MASSACHUSETTS WATER RESOURCES AUTHORITY

Board of Directors Report

on

Key Indicators of MWRA Performance

for

Second Quarter FY2014

Q1	Q2	Q3	Q4

Frederick A. Laskey, Executive Director
Michael J. Hornbrook, Chief Operating Officer
February 12, 2014

Board of Directors Report on Key Indicators of MWRA Performance
Second Quarter FY2014

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This quarterly report is prepared by MWRA staff to track a variety of MWRA performance measures for routine review by MWRA's board of directors. The content and format of this report is expected to develop as time passes. Information is reported on a preliminary basis as appropriate and available for internal management use and is subject to correction and clarification.

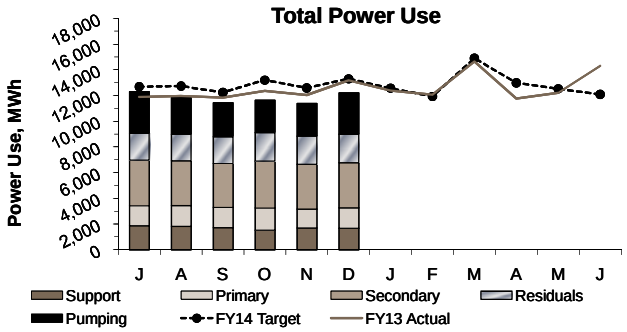
Frederick A. Laskey, Executive Director
Michael J. Hornbrook, Chief Operating Officer

February 12, 2014

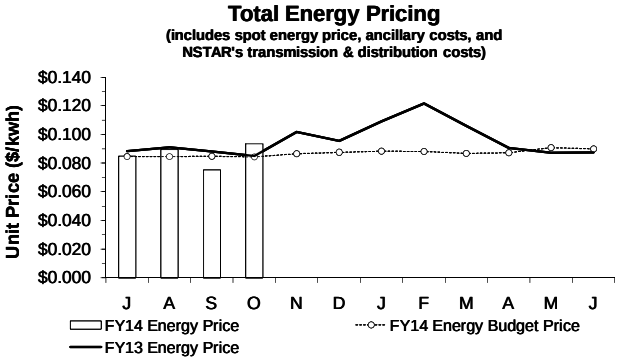
OPERATIONS AND MAINTENANCE

Deer Island Operations

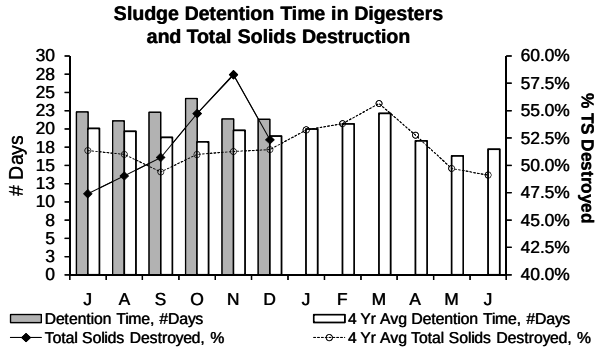
2nd Quarter - FY14



Total Power Use in the 2nd Quarter was 9.8% lower than the FY14 projections due mainly to lower-than-expected power used in wastewater pumping and for secondary wastewater treatment (as a result of energy optimization measures in the secondary reactor process area). Power used for pumping was 27.5% lower-than-expected for the quarter as the 4 year average plant flow (used in power use projections) was 30.0% lower-than-expected.

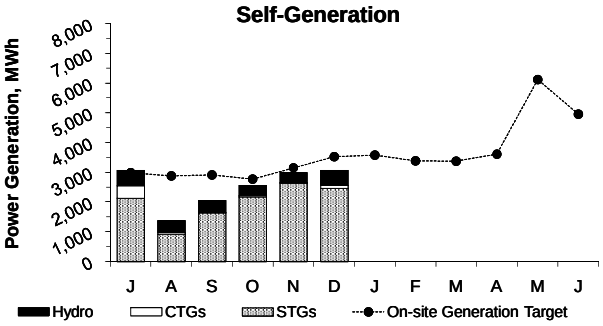


Under the current energy supply contract, a block portion of DI's energy is a fixed rate and the variable load above the block is purchased in real time. The actual total energy unit price in the 2nd Quarter (October only) was 11.1% higher than the FY14 budget estimate. Both November and December Total Energy Prices are not yet available as some of the invoices have not yet been received; the NSTAR and Hess invoices for both months are still pending as of reporting time. Year-to-date costs are $195,084 (5.9%) lower than budget through October (actuals only) even though the total energy unit price is 1.5% higher than budget as Total Power Purchased is 27.3% lower than budget. The total energy unit price includes a fixed block price, spot energy price, transmission & distribution charges, and ancillary charges. Note: Only the actual energy prices are now being reported. Therefore, the data lags by two (2) months due to the timing of invoice receipt.



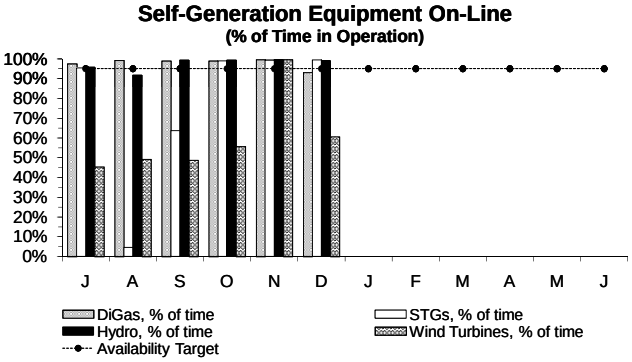
Total solids (TS) destruction following anaerobic sludge digestion averaged 55.1% during the 2nd Quarter with an average sludge detention time in the digesters of 22.3 days. Solids destruction was 7.6% higher than the 4 year average for the quarter as sludge detention time in the digesters was 17% higher than the 4 year average. The transition from Module #1 to Module #2 digester operation in October and November resulted in a temporary increase in the average number of digesters in operation, sludge detention time, and solids digestion.

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 significanty impacted by changes in the number of digesters and the resulting shifting around of sludge.

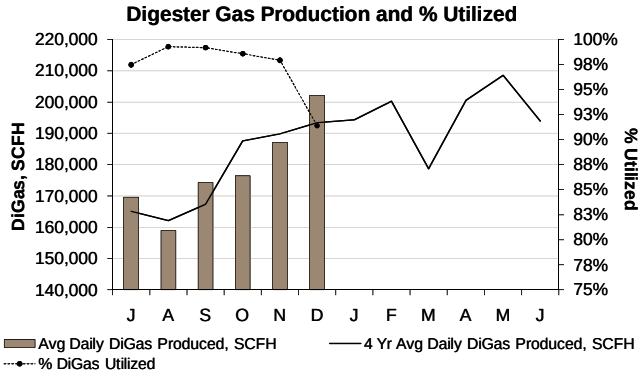


Power generated on-site during the 2nd Quarter was 3.1% lower than target due to 25.2% lower generation by the Hydro Turbines, 25.7% lower generation bythe CTGs, and 34.4% lower generation by the Wind Turbines than was budgeted. Generation by the STGs was however 5.4% higher-than-expected for the quarter and generation by the Solar Panels was on target. The Hydro Turbines generated less than target due to lower-than-expected plant flow. Generation by the CTGs was low as the units were only operated mainly for maintenance and checkout purposes during the quarter, and only briefly for NSTAR maintenance and a short demand response audit event in December. Generation by the Wind Turbines was lower-than-expected as several mechanical issues occurred during the quarter impacting both Wind Turbines.

Note: Power generation by the Solar Panels and the Wind Turbines are not included in the graph (as the amounts generated cannot be seen within the current scale of this graph); a total of 137 MWh was generated by the Solar Panels and 395 MWh was generated by the Wind Turbines in the 2nd Quarter.



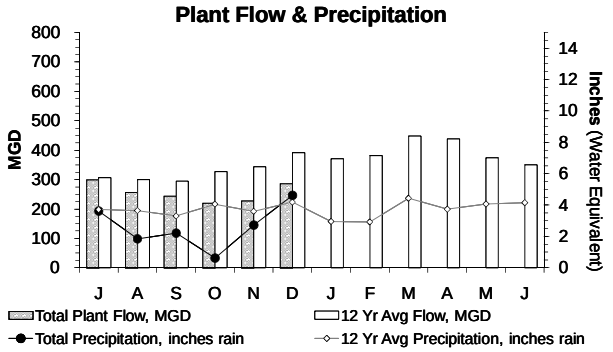
The DiGas, STGs, and Hydro Turbine systems all met their 95% Availability Target for the 2nd Quarter. The Wind Turbines fell 23% below the 95% target for the quarter due to several mechanical issues outlined in the Deer Island Operations & Maintenance Report.



The Avg Daily DiGas Production in the 2nd Quarter was on target (-0.9%) with the 4 Year Avg Daily DiGas Production for the same period. December's DiGas production is the highest DiGas production in FY14 to date and was 4.5% higher than the 4 year average. A slightly lower than normal 96.0% of all the DiGas produced in the quarter was utilized at the Thermal Power Plant (see page3) due to a 49-hour boiler gas compressor outage in December.

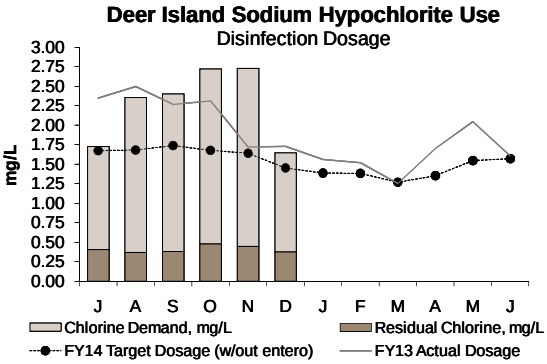
Deer Island Operations

2nd Quarter - FY14



The Total Plant Flow for the 2nd Quarter was 30.9% lower than the target 12 year average plant flow (244.3 MGD actual vs. 353.6 MGD expected) as precipitation was 33% lower-than-expected for the quarter (7.95 inches actual vs.11.84 inches expected).

October's Total Plant Flow of 219.65 MGD was a recordsetting monthly low flow for DITP (since DITP began treating South System flows in 1998) and was 22.32 MGD lower than the previous low flow record of 241.97 MGD from August 2007. A new record low for the Total North System flows was also set in October with a flow of 149.34 MGD which was 14.75 MGD lower than the previous record low of 164.09 MGD from the previous month. Additionally, the continuation of the low plant flow trend produced a record setting low in the 365-dry day flow of 262.8 MGD by the end of December.breaking the previous record of 263.4 MGD.



The disinfection dosing rate in the 2nd Quarter was 49% higher than the target. DITP maintained an average disinfection chlorine residual of 0.44 mg/L this quarter with an average dosing rate of 2.37 mg/L (as chlorine demand was 1.93 mg/L). Dosing was and has been much higher-than-expected due to a higher chlorine demand as a result of stronger wastewater caused by the record low plant flows and the lengthy period of much lower-than-normal plant flows.

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
J	2	2	0	99.7%	6.63
A	1	1	0	99.6%	6.25
S	1	1	0	99.97%	0.96
O	0	0	0	100.0%	0.00
N	1	1	0	99.8%	3.73
D	1	1	0	99.5%	6.07
J					
F					
M					
A					
M					
J					
Total	6	6	0	99.7%	23.64

99.7% of all flows were treated at full secondary for the 2nd Quarter of FY14. There were a total of two (2) separate secondary blending events; both due to high plant flows resulting from heavy rain. The secondary blending event in December occurred as a result of recordsetting rainfall combined with significant snow melt.

The two (2) blending events combined produced a total of 9.81 hours of blending and 60.88 Mgal of flow blended with secondary effluent.

Secondary permit limits were met at all times during the 2nd Quarter of FY14.

Deer Island Operations & Maintenance Report

Environmental/Pumping:

The 7.95 inches of precipitation in the 2nd Quarter of FY14 was 33% lower than the 12 year historical average precipitation for the quarter of 11.84 inches causing total plant flow for the quarter to be 30.9% lower than the target total plant flow (244.3 actual vs. 353.6 MGD target).

October's Total Plant Flow of 219.65 MGD was a recordsetting monthly low flow for DITP (since DITP began treating South System flows in 1998) and was 22.32 MGD lower than the previous low flow record of 241.97 MGD from August 2007. A new record low for the Total North System flows was also set in October with a flow of 149.34 MGD which was 14.75 MGD lower than the previous record low of 164.09 MGD from the previous month. Additionally, the continuation of the low plant flow trend produced a record setting low in the 365-dry day flow of 262.8 MGD by the end of December, breaking the previous record of 263.4 MGD from the previous month.

The plant achieved a maximum average hourly flow rate of 990.2 MGD in the 2nd Quarter during the evening of December 29 as a result of a storm event, that lasted approximately 16 hours and resulted in a total of 1.32 inches of rain in the Boston area, combined with significant snowmelt. Boston also set a new daily record snowfall of 6.4 inches of snow for December 17 which broke the previous record of 3.8 inches back in 1970. This snowstorm had no impact on plant flow as the daily average flow was 240.7 MGD and the maximum average hourly flow rate was only 301.3 MGD. Pumping and treatment operations at DITP continued without incident through these storms, as well as throughout the entire month.

Deer Island Operations & Maintenance Report (continued)

Odor Control Treatment:
Maintenance staff replaced and cleaned the spray nozzle system in wet chemical scrubber units #2 and #5 in the East Odor Control Facility, #3 and #4 in the West Odor Control Facility, as well as #3 and #4 in the Residuals Odor Control Facility . Over time, buildup of chemical precipitate on the spray nozzles significantly reduces the effectiveness of a wet chemical scrubber . Improved odor treatment was achieved once the spray nozzles were replaced and the units cleaned. These scrubber treat the process airflows from the primary batteries, grit facility and residuals facility.

Secondary Treatment:
Annual turnaround maintenance was performed on Train #1 at the Cryogenic Oxygen Facility in October. This turnaround maintenance is performed on roughly half of the components in the Cryo Facility and allows the remaining half of the facility to continue to operate and produce oxygen uninterrupted. Additionally, all the pressure relief valves (PRVs) throughout Train #2 were inspected and confirmed for proper operation by a contractor. This testing of all the pressure relief valves in the Cryo Facility is performed every five (5) years. The same turnaround maintenance and PRV testing was completed on Train #2 in April.

Residuals Treatment:
Plant Operations transitioned from Module #1 operation to Module #2 operation in October to allow for scheduled maintenance work in the Module #1 digester complex. All eight (8) digesters in Modules #2 and #3 were in operation for the remainder of the quarter, except during short periods of temporary shutdowns, when maintenance was performed on the overflow line in individual digesters.

Energy and Thermal Power Plant:
Solar power generation accounted for 1.49% (137 MWh) of the total power generated on-site in the 2nd Quarter while Wind Turbine generation accounted for 4.32% (395 MWh) of the total power generated on-site in the 2nd Quarter. Wind Turbine power generation typically includes generation by the two wind turbines located in the South Parking Lot and intermittent generation during optimization and testing by the FloDesign wind turbine installed near the Hydro Power Plant.

Overall, total power generated on-site accounted for 26.0% of Deer Island's total power use for the 2nd Quarter. Renewable power generated on-site (by Solar, Wind, STGs, and Hydro Turbines) accounted for 25.5% of Deer Island's total power use for the quarter.

Wind Turbine #2, which was returned to operation on October 18 after being out of service for a lengthy period of time, subsequently experienced a failure of the high speed coupling and has remained out of operation since December 10 pending repairs. Wind Turbine #1 was taken out of operation on October 9 to investigate a suspected vibration issue and was returned to service on November 7. Both Wind Turbines #1 and #2 were taken offline intermittently from November 19 through November 22 for scheduled preventative maintenance.

The DI Wind Turbines #1 and #2 generated a record total daily (midnight-to-midnight) wind production of 28,189 kWh on November 24. DI Wind production was at 98% of its maximum rated capacity with average wind speeds of 12.1 m/s (27 mph). This amounts to an estimated value of $3,800 (for electricity and Renewable Energy Certificate sales based on recent pricing/cost data).

NSTAR performed scheduled maintenance on their Bus B-side transformer on October 8 through October 23 which required DITP to transfer the entire plant load from the NSTAR Bus B-side to their Bus A-side while their B-side transformer remained offline during this maintenance. The equipment undergoing maintenance is owned and operated by NSTAR. Regulatory agencies (MaDEP and EPA) were appropriately pre-notified of this impending work and no impacts were encountered during this NSTAR maintenance. Nevertheless, DITP CTGs were available for backup power in the unlikely event of an issue with the electrical feed through NSTAR's single Bus A-side (without redundancy). Additional minor maintenance work was again performed on NSTAR's Bus B-side transformer in December requiring DITP to transfer the entire plant load to NSTAR's Bus A-side while the maintenance was in progress.

DITP experienced a momentary power loss (blip) during the morning of December 12 due to a NSTAR gas turbine trip at their Mystic Power Station. This power blip impacted a number of systems on DITP including a couple of wastewater pumps, the STGs and boiler, the digester gas delivery system, secondary reactor mixers, a number of digester mixers, and the fans in the Secondary Odor Control (SOC) Facility. All the main wastewater pumps were restarted immediately (with no impacts on the upstream systems) and all the other systems were brought back on-line as quickly as possible. There were no operational impacts as a result of this event.

Both digester gas compressors in the Thermal Power Plant that are used to increase the digester gas pressure into the boiler tripped on the afternoon of December 21 causing the boiler and STGs to trip. The boiler was restarted using fuel oil, while staff investigated the cause of the gas compressor trip, and the STGs were also returned to operation once the boiler was restarted. Since the boiler gas compressors were unable to operate, all the digester gas generated during this period had to be flared and the boilers could only operate by using fuel oil. The investigation found the cause of the trip to be a result of a failed microprocessor in the control panel for the compressors. A new controller was installed and programmed allowing the gas compressors to be returned to operation on December 23.

Clinton AWWTP:

The contract for the Rehabilitation of the Anaerobic digesters, primary clarifiers, and new influent gates at the Clinton Plant (contract 7277A) was advertised and bids are due in early January 2014. The estimated value of the contract is $3,700,000.

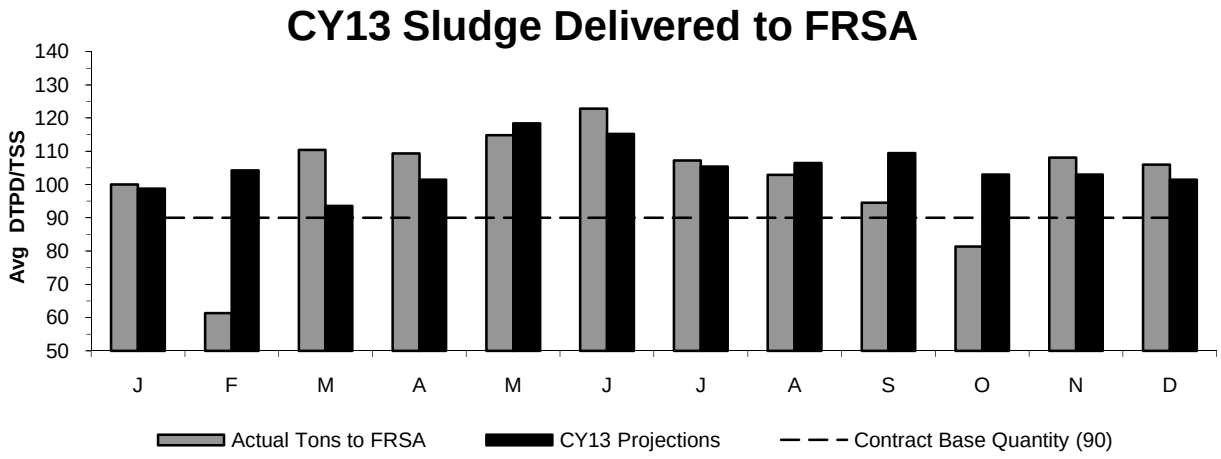
The plant missed a Gold Award for NPDES 2013 permit compliance due to a toxicity test excursion in December. The cause was tentatively determined to be from copper in the effluent at higher than normal concentrations. Ironically, the higher concentration is likely due to the lower flows we strive to comply with in the permit. The plant met its running average flow limit for the entire calendar year.

MWRA has awarded the design contract for the Phosphorous reduction process to FST Consulting Engineers for $1.15 million. MWRA has 3 years from the signing of the permit to comply with the requirements. The permit has not yet been signed.

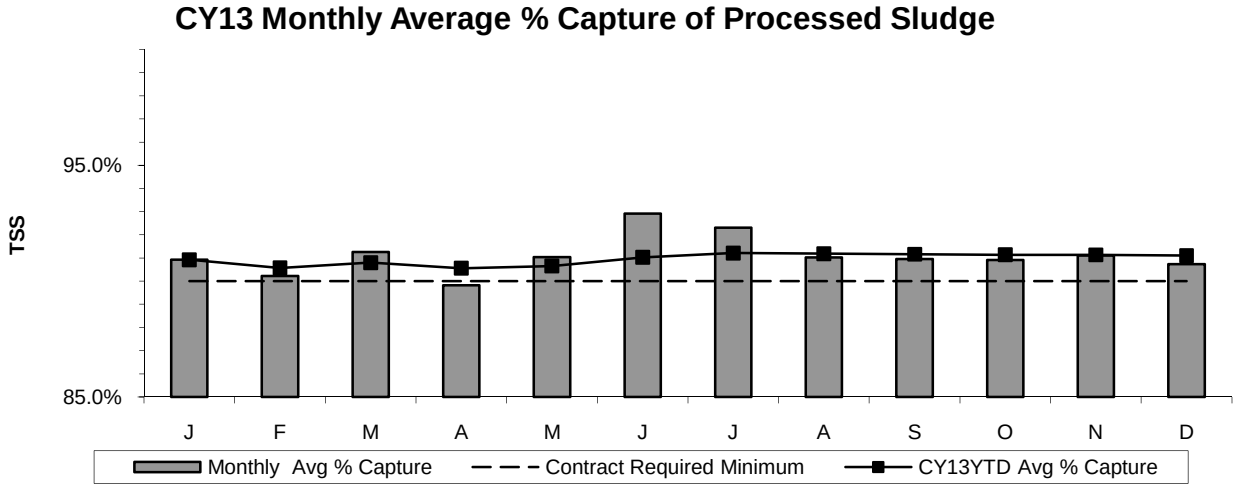
Deer Island Residuals

2nd quarter , FY14

MWRA pays a fixed monthly amount for the calendar year to process up to 90 DTPD/TSS as an annual average. The monthly invoice is based on 90 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. The base quantity of 90 DTPD/TSS was set for the 15-year term of the contract even though, on average, MWRA processes more than 90 DTPD/TSS each year.



The total amount of sludge pumped to FRSA in December was higher than the projected level. The higher amount is likely due to rain fall events that flushed settled deposits from the sewerage system. The average for the year was 101.6.



The contract requires NEFCo to capture at least 90% of the solids delivered to the Biosolids Processing Facility in Quincy. The capture rate of solids in December was 90.7% (The yearly average is 91.1%).

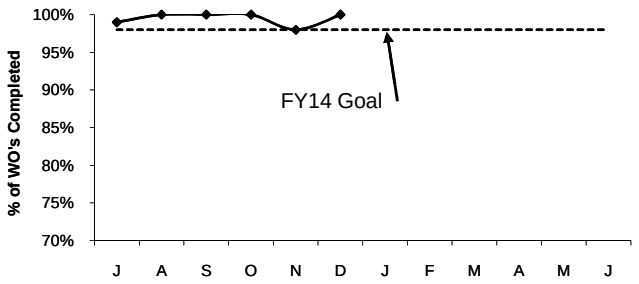
Deer Island Maintenance

2nd Quarter FY 14

Productivity Initiatives

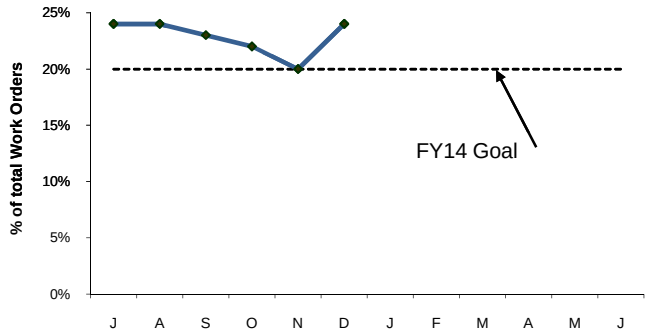
Productivity initiatives include increasing predictive maintenance compliance and increasing PdM work orders. Accomplishing these initiatives should result in a decrease in the overall maintenance backlog.

Predictive Maintenance Compliance



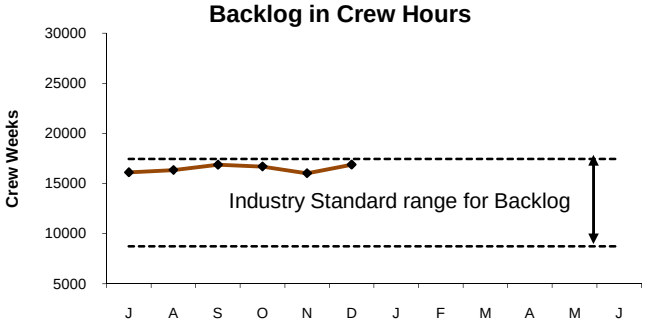
Deer Island's FY14 predictive maintenance goal is 98%. DITP completed 99% of all PdM work orders this quarter. DITP is continuing with an aggressive predictive maintenance program.

Predictive Maintenance



Deer Island's FY14 predictive maintenance goal is 20% of all work orders to be predictive maintenance. 22% 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

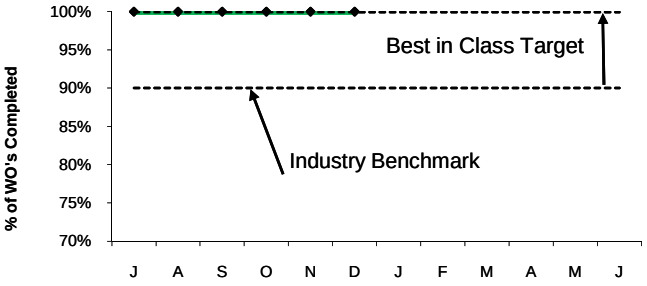


DITP's maintenance backlog was 16,528 hours this quarter. DITP is within, but at the upper end, of the industry average for backlog. The industry Standard for maintenance backlog with 97 staff (currently planned staffing levels) is between 8,730 hours and 17,460 hours. Management continues to monitor backlog and to ensure all critical systems and equipment are available.

Proactive Initiatives

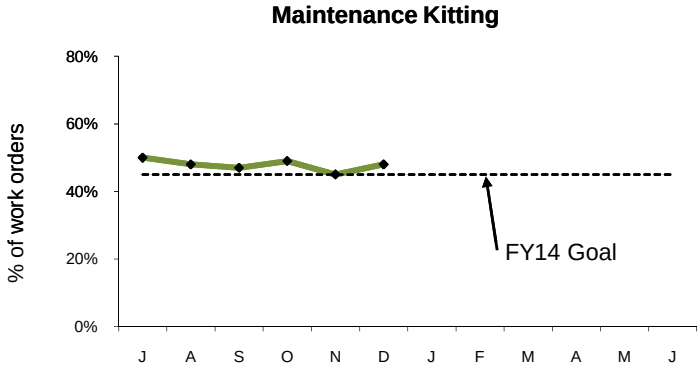
Proactive initiatives include completing 100% of all preventive maintenance tasks and increasing preventive maintenance kitting. These tasks should result in lower maintenance costs.

Preventive Maintenance Compliance



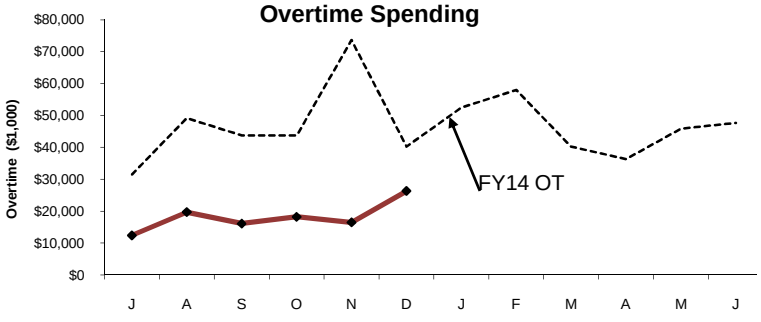
Deer Island's FY14 preventive maintenance goal is 100% completion of all PM work orders from Operations and Maintenance. DITP completed 100% of all PM work orders this quarter.

Maintenance Kitting



Deer Island's FY14 maintenance kitting goal is 45% of all work orders to be kitted. 47% of 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

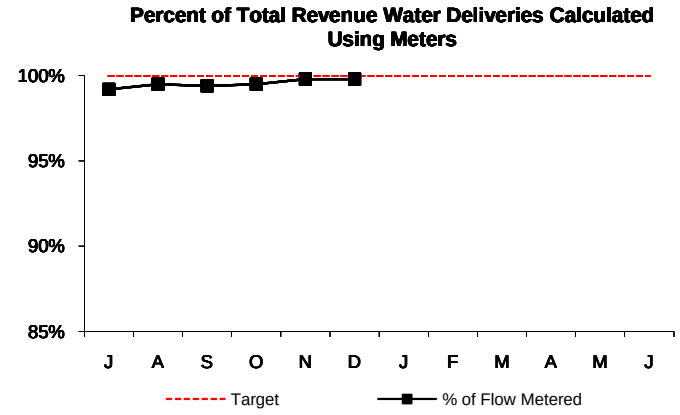


Maintenance overtime was under budget by $76K this quarter. Management continues to monitor backlog and to ensure all critical systems and equipment are available. This quarters overtime was spent on multiple snow events and two wet weather events, replace influent gate in Battery "D" influent channel, heat related issues, completed installation of both instrument compressors in Thermal Power Plant and continued the overhaul for pump #3 in Winthrop facility

Operations Division Metering

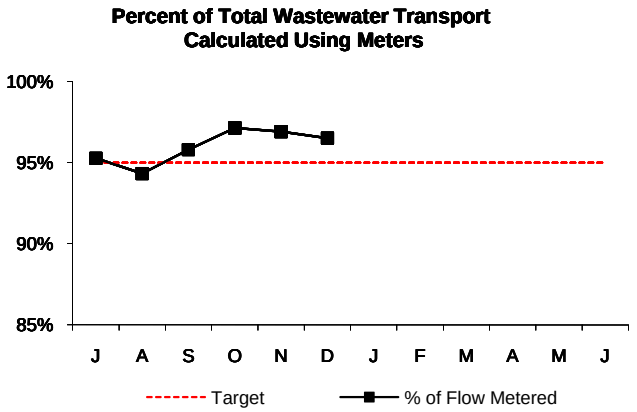
2nd Quarter - FY14

WATER METERS



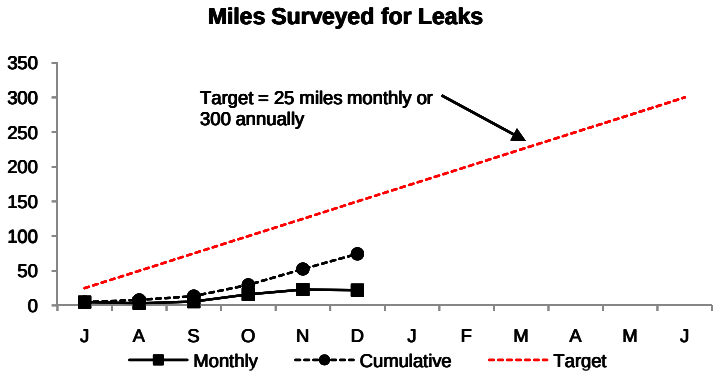
The target for revenue water deliveries calculated using meters is 100%. Estimates are generated for meters that are out of service due to instrumentation problems or in-house and capital construction projects. During the 2nd Quarter of FY14, meter actuals accounted for 99.7% of flow; only 0.3% of total revenue water deliveries were estimated. The following is the breakdown of estimations:
In-house and Capital Construction Projects - 0.1%
Instrumentation Failure - 0.2%

WASTEWATER METERS

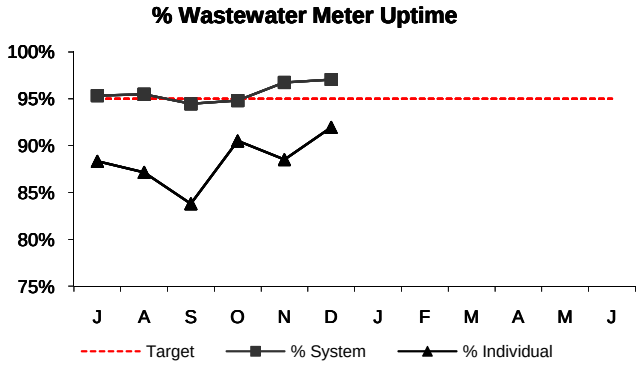


The target for revenue wastewater transport calculated using meters is 95%. Estimates are generated for meters missing data due to instrument failure and/or erratic meter behavior. Estimates are produced using data from previous time periods under similar flow conditions. During the 2nd Quarter of FY14, meter actuals accounted for 96.9% of flow; 3.1% of wastewater transport was estimated.

WATER DISTRIBUTION SYSTEM PIPELINES



During the 2nd Quarter of FY14 60.9 miles of water mains were inspected. The total mileage inspected for the fiscal year to date is 74.42. Miles inspected is less than target due to a previous staffing shortage as well as current weather conditions.



During the 2nd Quarter of FY14,out of a possible 1,551,648 data points, only 59,208 points were missed resulting in a system-wide up time of 96.2%. Of the 175.7 revenue meters installed, on average 17 experienced down time greater than the 5% target resulting in a 90.3% individual meter uptime. For the 2nd Quarter of FY14, down time for an individual meter is defined by any individual meter having less than 2,796.7 data points out of a potential 2,880 data points.

Water Distribution System

Month	J	A	S	O	N	D	J	F	M	A	M	J
Leaks Detected	2	1	0	8	5	6						
Leaks Repaired	0	1	2	5	4	5						
Backlog	2	2	0	3	4	5						
Avg. Lag Time	1.0	20.0	27.3	13.7	15.3	16.4						

During the 2nd Quarter of FY14, 19 leaks were detected. Eight leaks were detected in October, five in November and six in December. Fourteen out of the 19 leaks detected during the 2nd Q of FY14 have been repaired. The remaining five leaks (Walnut Street , Saugus; Linden Street, Waltham; Route 1, Malden; Everett Ave @ Revere Beach Parkway; and Adam Street Dorchester originally detected on: October 23rd, November 19th, December 13th, December 19th, December 26th respectively) remain unrepaired. All remaining leaks are small and non-surfacing; therefore, since they are not emergencies we are not permitted to dig up streets under the current weather conditions.

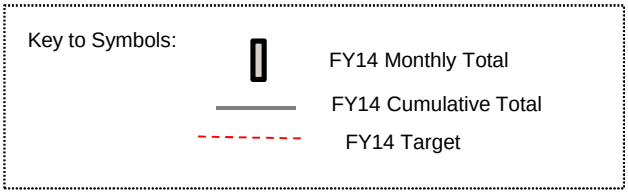
Water Distribution System Valves

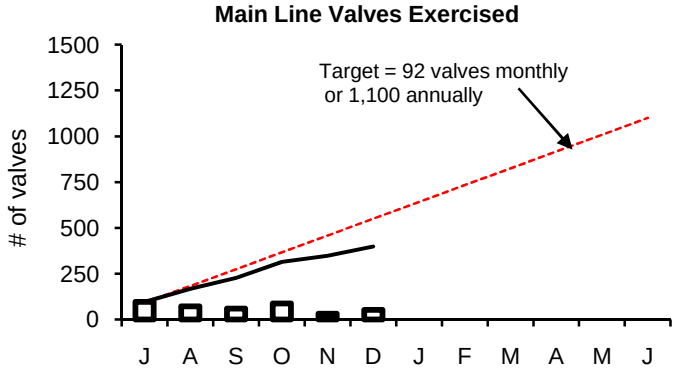
2nd Quarter - FY14

Background

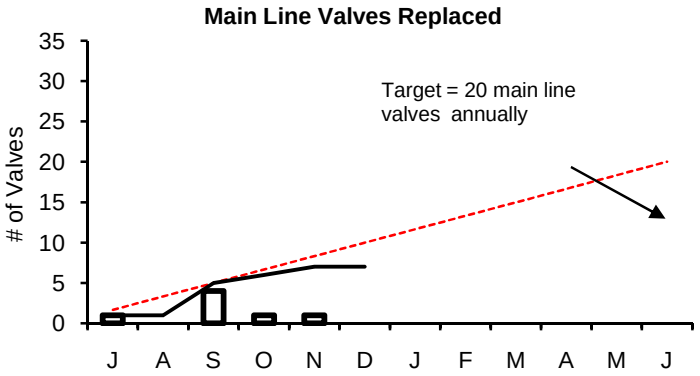
Valves are exercised, rehabilitated, or replaced in order to improve their operating condition. This work occurs year round. Valve replacements occur in roadway locations during the normal construction season, and in off-road locations during the winter season. Valve exercising can occur year round but 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.

Type of Valve	Inventory #	Operable Percentage	
		FY14 to Date	FY14 Targets
Main Line Valves	2,092	97.9%	95%
Blow-Off Valves	1,206	95.6%	95%
Air Release Valve	1,335	93.3%	95%
Control Valves	48		95%

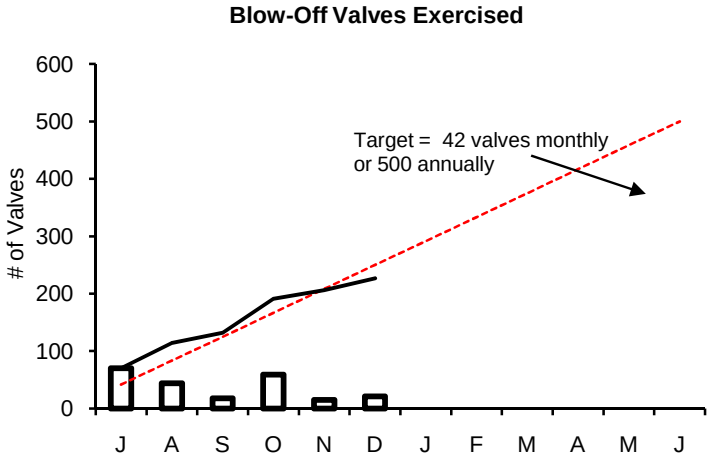




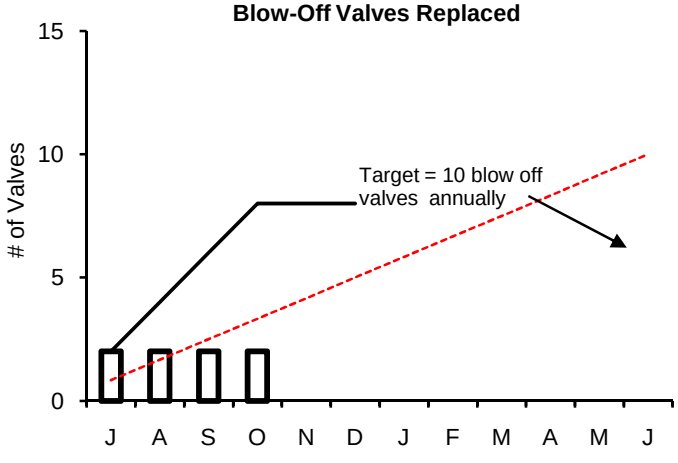
During the 2nd Q of FY14 staff exercised 172 main line valves.The total exercised for the fiscal year to date is 399.



During the 2nd Q of FY14 staff replaced two main line valves. The total replaced for the fiscal year to date is seven.



During the 2nd Q of FY14 staff exercised 95 blow-off valves. The total exercised for the fiscal year to date is 227.



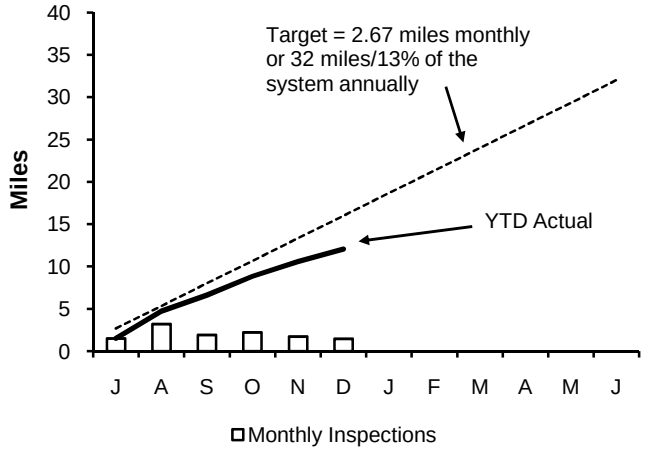
During the 2nd Q of FY14 staff replaced two blow-off valves. The total replaced for the fiscal year to date is eight.

Wastewater Pipeline and Structure Inspections and Maintenance

2nd Quarter - FY14

Inspections

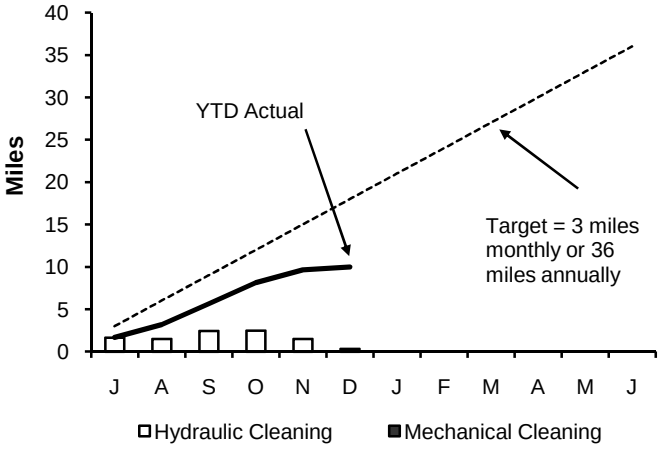
Pipeline Inspections



Staff internally inspected 1.48 miles of MWRA sewer pipeline during this quarter. The year to date total is 12.05 miles. No Community Assistance was provided to this quarter.

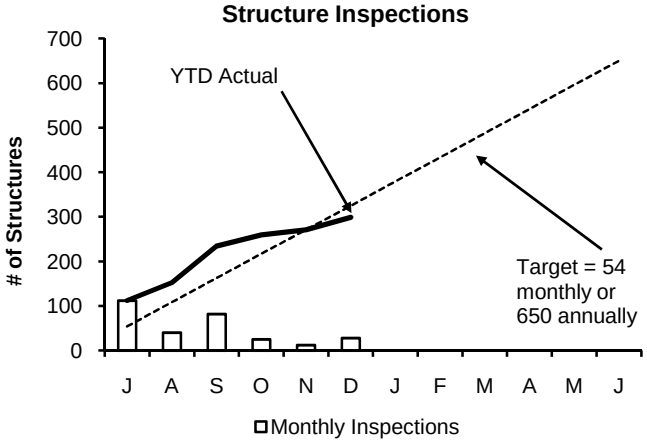
Maintenance

Pipeline Cleaning



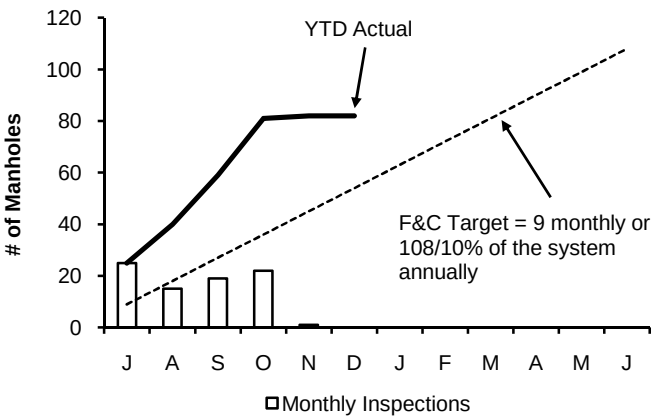
Staff cleaned 0.34 miles of MWRA's sewer system and removed 3 yards of grit and debris during this quarter. The year to date total is 9.98 miles. No Community Assistance was provided this quarter.

Structure Inspections



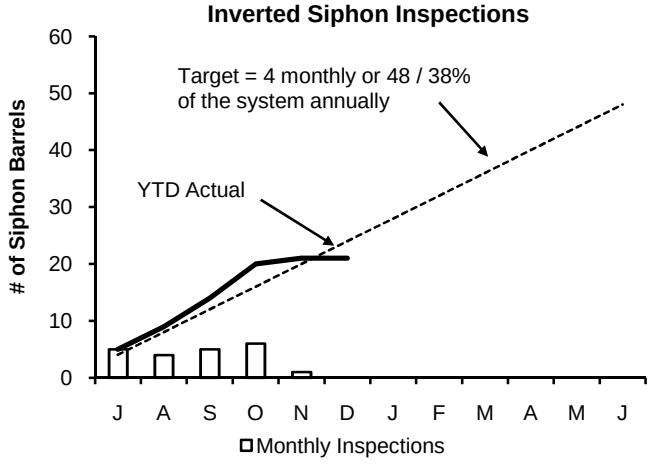
Staff inspected the 12 CSO structures and performed 29 additional manhole/structure inspections during this quarter. The year to date total is 299 inspections.

Manhole Rehabilitation



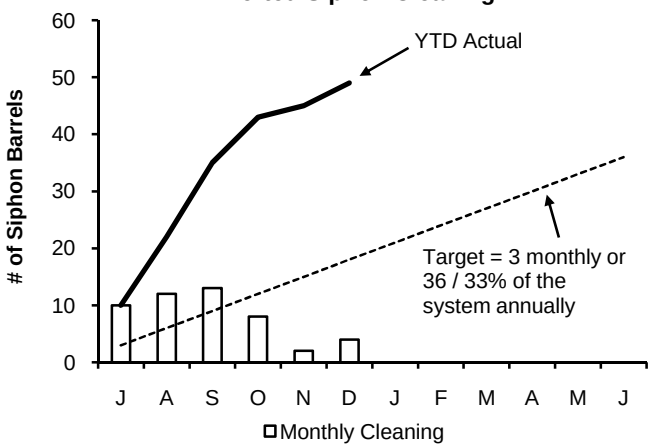
Staff did not replace any frames & covers during this quarter. The year to date total is 82.

Inverted Siphon Inspections



Staff did not inspect any siphon barrels during this quarter.Year to date total is 21 inspections.

Inverted Siphon Cleaning

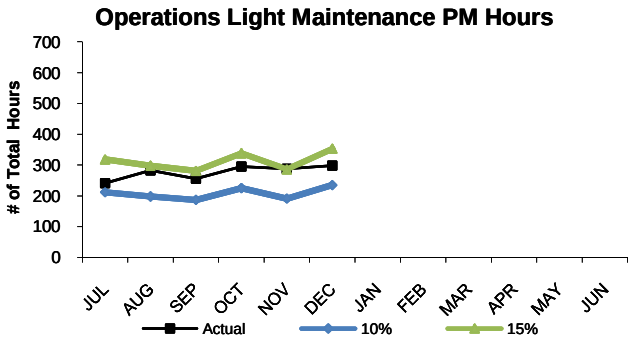


Staff cleaned 4 siphon barrels during this quarter.The year to date total is 49 barrels.

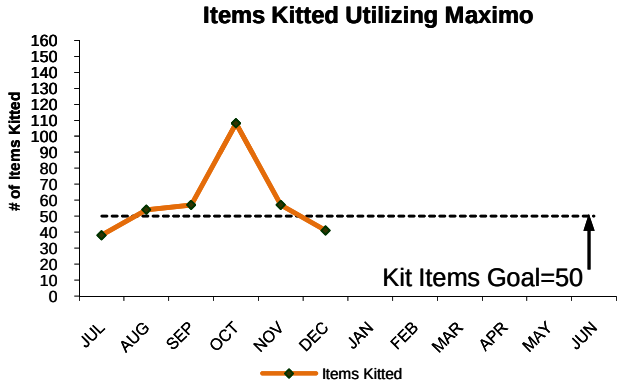
Field Operations' Metropolitan Equipment & Facility Maintenance

2nd Quarter, FY14

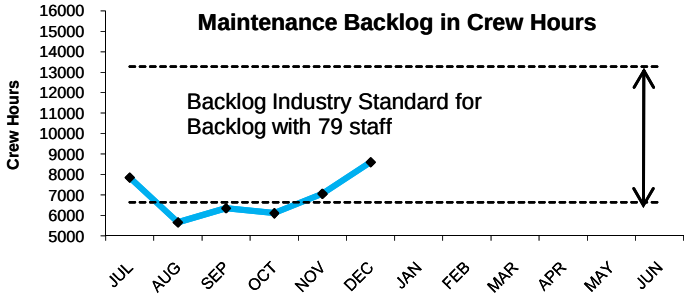
Several maintenance and productivity initiatives are in progress. The goal for the Overall PM completion and the Operator PM completion was raised to 100% for Fiscal Year 2010. The Operator PM and kitting initiatives frees up maintenance staff to perform corrective maintenance and project work, thus reducing maintenance spending. Backlog and overtime metrics monitor the success of these maintenance initiatives.



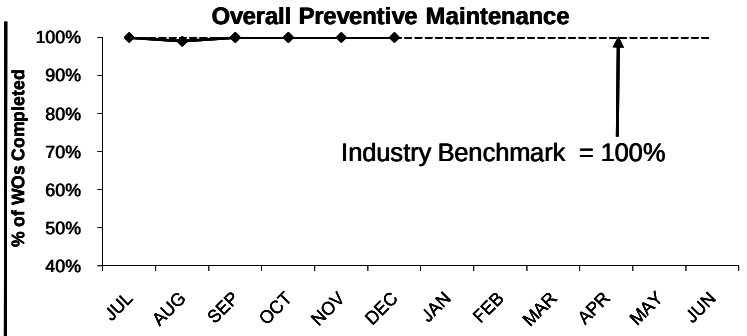
Operations staff averaged 294 hours of preventive maintenance during the 2nd Quarter, an average of 14% of the total PM *hours* for the 2st Quarter, which is within the industry benchmark of 10% to 15%.



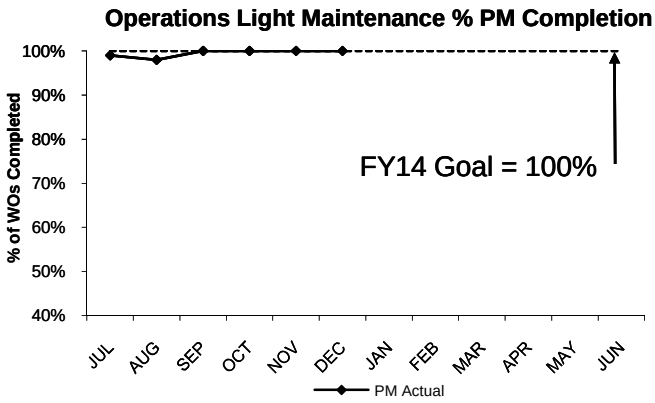
In an effort to more efficiently complete work, maintenance staff and work coordination staff have utilized the Lawson/Maximo interface to better kit stock and non stock material. The goal for FY14 is to "kit" 50 stock and non stock items total per month. An average of 67 items were kitted during the 2nd Quarter.



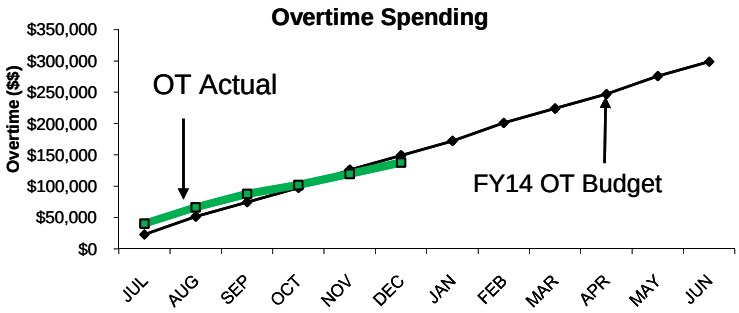
The 2nd Quarter backlog average is 7259 hours. Management's goal is to continue to control overtime and still stay within the industry benchmark of 6450 to 12,940 hours. There are currently three vacant positions Facility Specialist, Mechanic and Electrical Supervisor.



The Field Operations Department (FOD) preventive maintenance goal for FY14 is 100% of all PM work orders. Staff completed an average of 100% of all PM work orders in the 2nd Quarter.



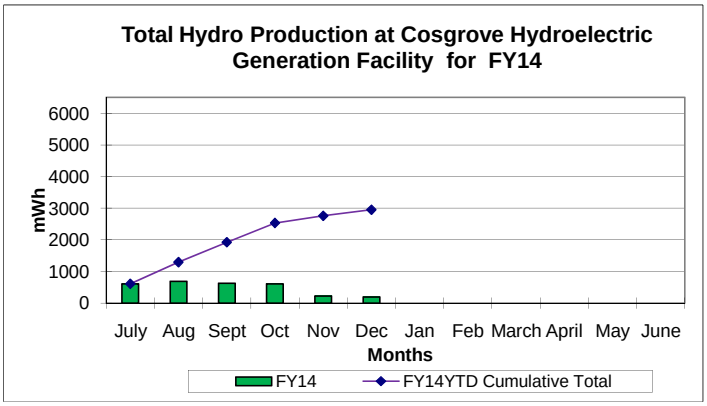
Wastewater Operators complete light maintenance PM's which frees up maintenance staff to perform corrective maintenance. Operations' FY14 PM goal is completion of 100% of all PM work orders assigned. Operations completed an average of 100% of PM work orders in the 2nd Quarter.

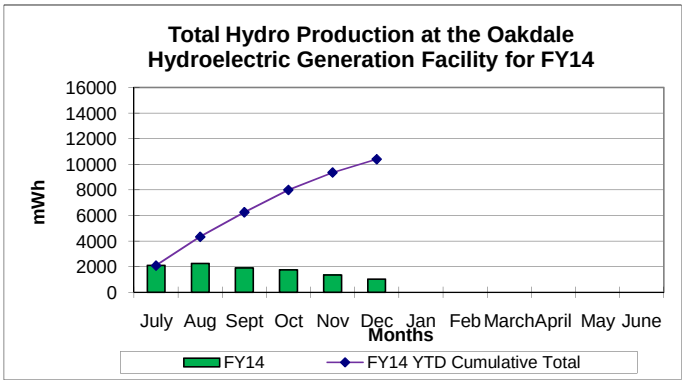


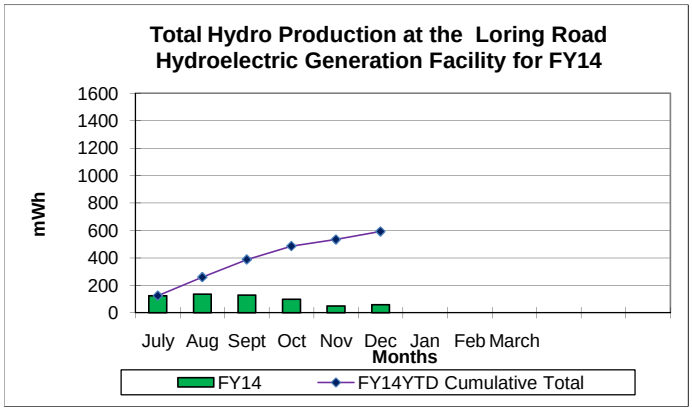
Maintenance overtime was $11k under budget for the 2nd Quarter. Overtime was used for emergency repairs and storm coverage.

Field Operations Hydroelectric Generation Quarterly Report

2nd Quarter - FY14







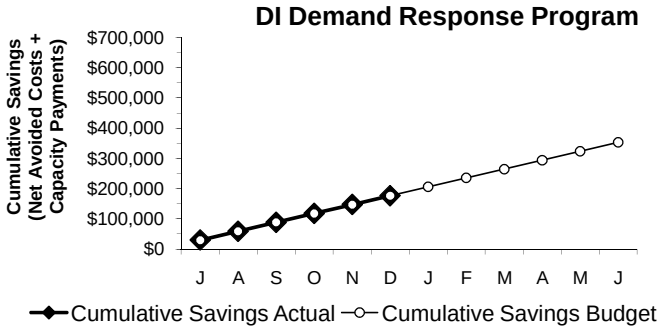
In the 2nd Quarter, the **Cosgrove Hydroelectric Station** generated a net of 1025 MWh; approximately 16% more power than was generated during the same quarter in FY13. The revenue generated at Cosgrove in the second quarter was $45,911 exclusive of Renewable Energy Certificates.

In the 2nd Quarter, the **Oakdale HydroelectricStation** generated a net of 4,142 MWh; approximately 14% more power than was generated during the same quarter in FY13. The net revenue generated in the second quarter was $217,814. (Power is generated when water is transferred from Quabbin to Wachusett.)

In the 2nd Quarter, the **Loring Road** hydroelectric 200 kW station generated 204 MWh; approximately 33% less power than was generated during the same quarter in FY13. The net revenue generated in the first quarter was $1,246. Power is generated as water conveyed from Norumbega to the Loring Road storage tanks is reduced in pressure and the energy available in this pressure reduction is captured by the new turbine. The facility operates continuously. Some power is consumed on site, with the bulk exported to the grid.

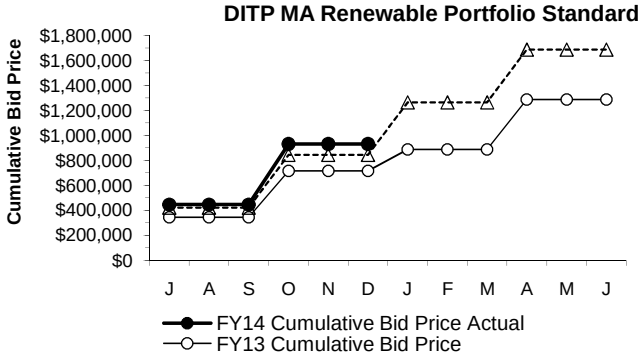
Energy Audits and Implementation of Audit Recommendations at FOD Facilities: Technical energy audits of 24 facilities were performed in FY13. The focus of these energy audits were to identify specific lighting, HVAC, pumps, and motors, and insulation, among other measures that could be implemented at these facilities to save energy. Implementation of these audit recommendations began in the second quarter of FY14, upon completion of projects reviews by operations staff. The installation of VFDs and an Energy Management System on the HVAC system at the Navy Yard and insulation of incoming water pipes at select water pump stations began in the 2nd quarter. In addition, initiation of discussions on gas conversion at two pump stations began in the second quarter.

Demand Response Payments: The John Carroll Water Treatment Plant, Loring Road Hydro, and Chelsea Creek, Columbus Park, and Ward Street Headworks are all enrolled in the ISO's Demand Response Program. The total net capacity payments for the second quarter of FY14 was $12,081. Nut Island was enrolled in the ISO Demand Response Program during the second quarter and will begin receiving payments in the 4th quarter of FY14 based on its audit performance.



Deer Island participates in the ISO-New England Demand Response Programs. By agreeing to have its Combustion Turbine Generators available to run and thus relieve the New England energy grid of Deer Island's load during times of high energy demand, MWRA receives monthly Capacity Payments from ISO-NE. When MWRA operates the CTGs during an ISO-NE called event, MWRA receives energy payments from ISO-NE and also avoids the cost of purchasing electricity from the grid. "Net Avoided Cost" is the avoided electricity costs, offset by the cost of running the CTGs and the energy payments from ISO-NE. Cumulative savings are the sum of Net Avoided Costs and monthly Capacity Payments - totaling $176,424 through December.

Note: Only the actual payments received are now being reported.

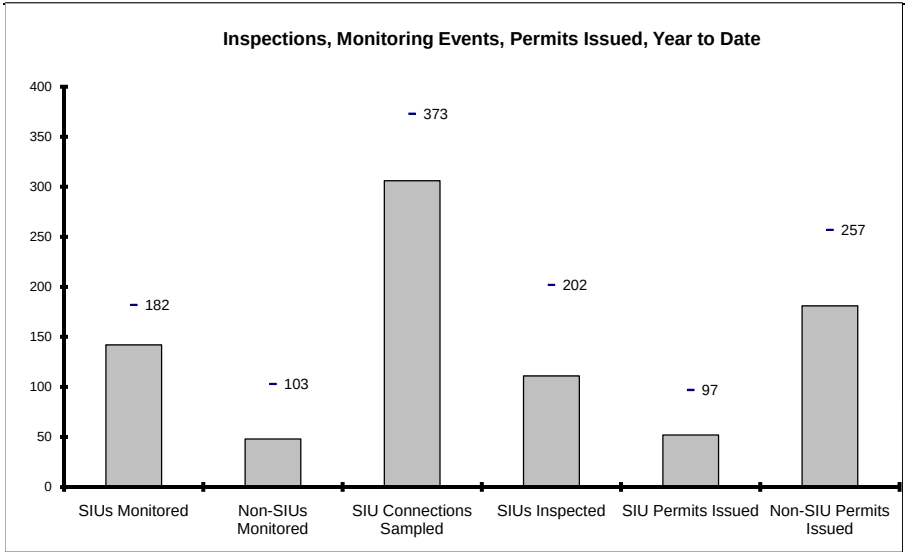


In Q2 FY14, a total of 7,077 Class I Renewable Energy Certificates (RECs) for a total value of $443,244 and 172 Solar Renewable Energy Certificates (S-RECs) for a total value of $42,000 were sold from Deer Island's renewable energy assets.

REC prices reflect the bid prices on the date that bids are accepted. Cumulative bid price reflects the total value of bids received to date. The FY14 budgeted cumulative bid estimate through the end of Q2 FY14 is $842,806 while the current actual bid total is $930,387.

Toxic Reduction and Control

2nd Quarter - FY 2014



EPA Required SIU Monitoring Events
for FY14: 182
YTD : **142**

Required Non-SIU Monitoring Events
for FY14: 103
YTD : **48**

SIU Connections to be Sampled
For FY14: 373
YTD: **306**

EPA Required SIU Inspections
for FY14: 202
YTD: **111**

SIU Permits due to Expire
In FY14: 97
YTD: **52**

Non-SIU Permits due to Expire
for FY14: 257
YTD: **181**

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 in the month. 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.

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 at any given time. During the course of the year, some SIUs do not discharge and cannot be monitored. TRAC also monitors one-third of the non-SIUs each year.

SIU and Non-SIU permits are issued with durations of two to five years, depending on the category of industry, varying the number of permits that expire in a given year.

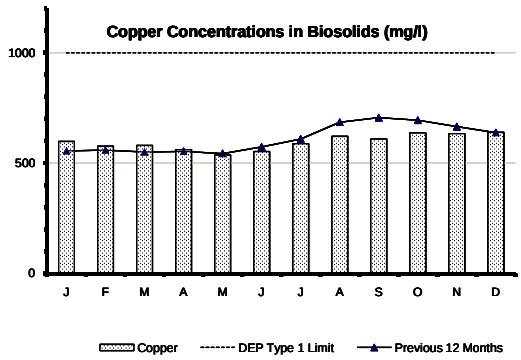
Number of Days to Issue a Permit								
	0 to 120		121 to 180		181 or more		Total Permits Issued	
	SIU	Non-SIU	SIU	Non-SIU	SIU	Non-SIU	SIU	Non-SIU
Jul	7	13	0	0	0	1	7	14
Aug	1	94	1	1	0	1	2	96
Sep	12	13	1	3	0	0	13	16
Oct	5	9	0	4	0	2	5	15
Nov	12	10	0	0	1	0	13	10
Dec	7	26	5	3	0	1	12	30
Jan							0	0
Feb							0	0
Mar							0	0
Apr							0	0
May							0	0
Jun							0	0
% YTD	85%	91%	13%	6%	2%	3%	52	181

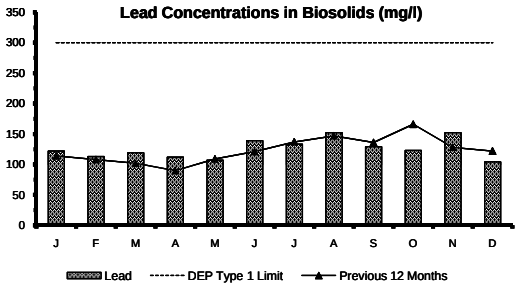
EPA requires MWRA to issue or renew 90% of SIU permits within 120 days of receipt of the application or the permit expiration date - whichever is later. EPA also requires the remaining 10% of SIU permits to be issued within 180 days.

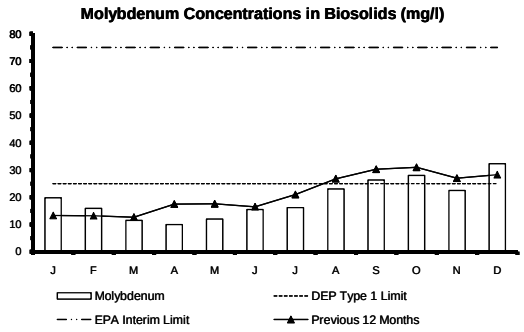
In the second quarter, eighty-five permits were issued. Twenty-four SIU permits and forty-five non-SIU permits were issued within 120 days after receipt of their applications. Five SIU permits and seven non-SIU permits were issued more than 120 days but before 180 days after receipt of their applications. One SIU permit and three non-SIU permits were issued after 180 days. The delays in permit issuance were due to consideration of unique permitting conditions, delays in payment of permit fees, and delays inherent in training the new staff.

Copper, lead, and molybdenum are metals of concern for MWRA as their concentrations in its biosolids have, at times, exceeded regulatory standards for unrestricted use as fertilizer. Cooling tower usage typically causes a seasonal spike in molybdenum concentrations due to the blowdown on large AC systems that use corrosion inhibitors containing molybdenum. Levels drop again following the end of the cooling season, although this is delayed due to biosolids processing time. TRAC has an ongoing program to persuade cooling tower operators to switch to phosphate-based corrosion inhibitors, but increases this year indicate that additional regulatory options must be considered.

In December, the level of molybdenum was above the DEP type 1 Limit. MWRA and its contractor (NEFCO) do not distribute product in Massachusetts between July and January under its approval of suitability. Staff are meeting in February to discuss regulatory options for reducing molybdenum.







Field Operations Highlights
2nd Quarter – FY14

Western Water Operations and Maintenance

Southborough: Staff installed over 2400 feet conduit for a new Verizon fiber optic connection between the Southborough Western Operations Center and the Verizon service connection point to provide a more reliable and higher speed network connection for Western Operations and Administration Facilities, at a cost about $30,000 less than using the Verizon contractor.

CWTP: Staff installed 100 feet of 8 inch PVC to re-route the vent line for the Sodium Bisulfite tank, to improve worker safety. Also, staff performed the normal half plant activities on the A side of the plant during the annual shut down. These activities include; replacing the rupture discs on the Ozone Contactors, rebuilding the chemical feed check valves, tightening the ozone drop leg connections, inspecting and lubricating the influent and effluent slice gates and operating and inspecting the tank drainage mud valves.

Wachusett Aqueduct: Staff supported Construction at the new Wachusett Aqueduct Emergency Interconnection Chamber while testing the new 120 inch butterfly valves for proper operation and clearances, by dewatering a portion of the Upper Hultman to facilitate the test.

Metro Water Operations & Maintenance

Water Pipeline Program: Valve replacements were completed on Section 24 Newton and Section 47 Watertown. Blow-off retrofits were completed on Section 8 in Everett and on Section 24 in Newton. The leaking blow-off valve on Section 2 at Beacon Street in Brookline was cut and capped. Over 50 miles of the MWRA water system was surveyed for leaks, including 10 miles of the Hultman Aqueduct. Several leaks were detected on the MWRA system and on community water systems. Leaks were repaired on Section 8 in Chelsea, Section 70 in Stoneham, Section 56 on the Lynnway in Lynn, and on WASM 10 on Felton Street in Waltham. Three separate leaks were repaired on the bottom of WASM 11, and subsequently an additional leak surfaced which required a shutdown and extensive community coordination to repair. Excavation began on the leak on Linden Street on WASM 10 in Waltham, but the leak was not uncovered. The site was backfilled and paved and will be dealt with in January. Leaks also surfaced on the Watertown Section pipeline, on Section 57 at Everett Avenue in Chelsea, and on Section 22 on Adams Street in Dorchester. Each was successfully isolated without any service issues.

Valve Program: Bellevue 1 Tank was drained for the roof rehabilitation contractor to begin work. Staff assisted Cambridge Department with several valve operations to control leakage into their large diameter transmission main, which needed to be isolated for CSO contract work to occur. Supply to Cambridge through Meter 145 continued to operate as expected during the quarter. Cambridge continues to work on a new connection within the city's distribution system, which should allow them to produce more water at their water treatment plant. Activation of the new connection is anticipated to occur in early January. Staff assisted Waltham with tank level measurements, water quality sampling and testing and dechlorination training so that the city could drain their Prospect Hill water storage tanks. Draw down of the Chestnut Hill Reservoir began to subject the invasive aquatic vegetation to freezing conditions which will kill it.

Wastewater Operations & Maintenance

Wastewater OCC Practice Drills: Wastewater Operations Staff worked with SCADA Staff to practice OCC operations from the Chelsea Radio Building and Carroll Water Treatment Plant remote locations. This required staff to relocate to the specific back-up OCC site and assume SCADA control. This annual drill will ensure staff maintains familiarity with each remote site in case of an actual emergency.

Backup Control and Manual Pump Testing: Staff performed local pump backup control operations and manual pump testing at wastewater pump stations to ensure consistent equipment operation in the event OCC control is impeded and to verify the accuracy of present operating parameters programmed into the equipment. These annual tests are now scheduled Maximo maintenance items.

Cottage Farm CSO-Spill Prevention Control and Countermeasure (SPCC) Plan-Update: A certified and updated SPCC Plan was delivered to the Cottage Farm CSO Facility. This 2013 updated version evaluated the previously existing SPCC control measures with the considerations for the recent fuel oil system modifications.

Intermediate Pump Station (IPS)-Boiler Burner Replacement: Staff assisted the contractor during the installation of a new dual fuel oil/gas burner on the existing boiler under the furnace maintenance contract. This modification is expected to save $135,000 in fuel costs.

Intermediate Pump Station (IPS) Spill Prevention Control and Countermeasure (SPCC) Plan: Operations Staff received the draft IPS SPCC Plan for review from the Real Estate/Environmental Department. This initial plan will ensure all regulatory requirements and facility spill controls will be in place and applied, including a monthly check list of specific SPCC items.

Weekly SCADA Alarm Meeting: Operations Staff met with Maintenance, Electrical, Process Control & Planning Support and SCADA Staff to review the top 20 weekly SCADA alarms. This allows all departments to verify specific alarm conditions and correct actual equipment alarm problems or address failed equipment items. Reviewing these alarms also provides the opportunity to address possible variations in the alarms trended over time.

CSO Evaluation: The project will evaluate treatment processes at Cottage Farm, Prison Point and Somerville Marginal CSOs and recommend improvements to facilities and operating procedures. The final sampling plan for use in process analysis has been submitted. Staff have independently completed equipment test and calibration at all three CSOs to ensure proper function during sampling. Currently waiting for significant storm events to conduct sampling.

TRAC

Annual Industrial Waste Report: MWRA submitted the report detailing its pretreatment program activities to US EPA and Mass DEP as required by our NPDES Permits for the Clinton and Deer Island Wastewater Treatment Plants by its October 31, 2013 due date.

Annual Incentive and Other Charges: In November, Facilities permitted by the TRAC Program were issued annual permit and monitoring charges totaling just over $2,000,000.

Monitoring: TRAC Staff completed compliance sampling for the Train A portion of the annual winter maintenance at the John J. Carroll Water Treatment Plant in accordance with the NPDES Permit. Compliance sampling for the Train B portion will begin in January.

Metro Equipment and Facility Maintenance

Bear Hill Tank-Electrical Connection: In the event of a power failure, Bear Hill Tank would not have an electrical supply. MWRA Electricians wired connections to the switch gear so that a towable generator to power the facility could be easily connected.

Prison Point-Engine #2: The #4 cylinder liner was running hot. An internal inspection for the liner to be damaged. A vendor and MWRA Mechanics removed the damaged liner and replace it with a spare. The engine was test run and returned to Operations.

Alewife #2 Screen: A length of chain failed causing a catastrophic failure of the #2 Screen. MWRA Mechanics removed the damaged chain and flights and installed new chain and clutch. The chain that failed was sent out for analysis.

Nut Island Damper #5: Odor Control Damper #5 failed due to age and corrosive environment. A new damper was purchased. This was a very difficult project because of the size and location of the damper, requiring staging for staff to work safely. MWRA HVAC Technicians rigged out the old damper and installed the new one, and MWRA Electricians installed a new actuator.

Gillis Pump Station #2 Generator: During routine generator maintenance testing conducted by MWRA Medium Voltage Electricians, various electrical issues were discovered with Generator #2. Issues included damage to bus duct, insulators and electrical cabinet. As repairs to Generator #2 were on going, generator #1 failed. MWRA Electricians working with the diesel engine service contractor found the voltage regulator to be faulty. A new voltage regulator was purchased, installed and Generator #1 was also returned to operation.

Hayes Pump #1 Motor: During routine vibration testing of Pump 1, the motor bearings were found to be out of tolerance and recommended to be rebuilt or replace the motor. MWRA Mechanics and Electricians removed the existing motor and installed a new motor. The motor was installed and laser aligned to the pump by MWRA Mechanics and returned to service. The original motor was sent out to be rebuilt and will be used as the spare for the facility.

Nut Island-Chemical Fill Eye Wash Station: A leak was discovered in the underground piping for the outdoor Eyewash Station at the chemical fill station. The repair consisted of saw cutting the concrete pad and shoring the excavation around the leak. MWRA Plumbers replaced the water line, properly insulated it, installed new eyewash and returned it to service.

Spring Street-#3 Motor: Vibration predictive maintenance indicated eminent bearing failure for Pump Motor #3. The motor was disconnected by MWRA Electricians and Mechanics. The motor was rebuilt by an outside vendor, reinstalled and returned to Operations.

Hyde Park Pump Station Generator: Lube oil analysis indicated cooling fluid in the lube oil. MWRA and the generator service contractor pressure tested the cooling system, found the after cooler to be leaking and installed a new one.

Nut Island Generator Radiator: The radiator for the Nut Island emergency generator needed to be replaced due to many years located in a harsh environment. As replacement would take a couple days, leaving the facility without emergency power, a generator large enough to power the facility was rented and wired by MWRA Electricians to provide emergency power during the change out. MWRA Electricians, Plumbers, Welder and Wastewater Pipeline Staff worked together to remove the original radiator and install the new one.

Gillis Sewer Ejection Line: The sewer line was repaired and replaced by the Plumber and Water Pipeline Crews. The line had sheared due to settling and was dug up and replaced.

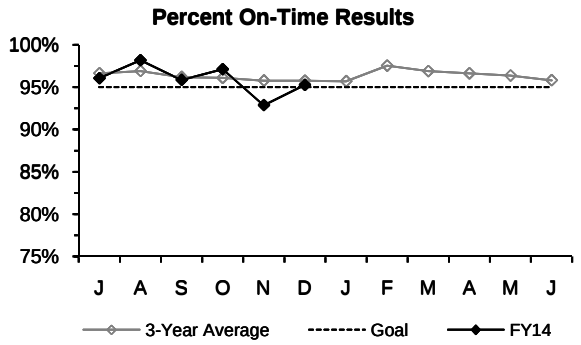
Operations Support

NIH Section 89 Failure Drill: Staff conducted a major field drill on 10/30 with the six NIH communities to practice emergency response to a failure of the PCCP pipe. This included community exercising of emergency connections and MWRA deployment of mobile pumping units to two locations to establish community to community transfers as called for in the Section 89 EAP. In November, staff continued with follow-up actions to practice responding to a failure of Section 89, including repeated deployment of the mobile pumps.

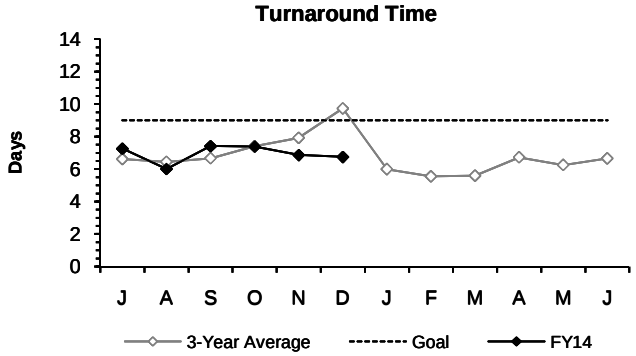
CVA Leak: Operations Engineering Staff continued investigating a leak near the Swift River crossing of the CVA and had prepared a shutdown plan to check if the leak could be repaired by an internal entry. In the 2nd Quarter, staff continued to work with Springfield Water &Sewer Commission to implement the emergency pumping connection and implemented planning for the line stop contract.

Laboratory Services

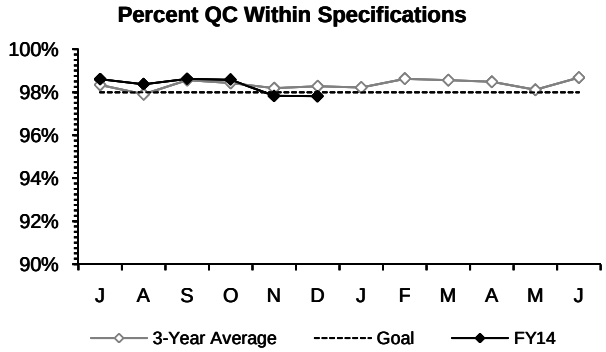
2nd Quarter FY14



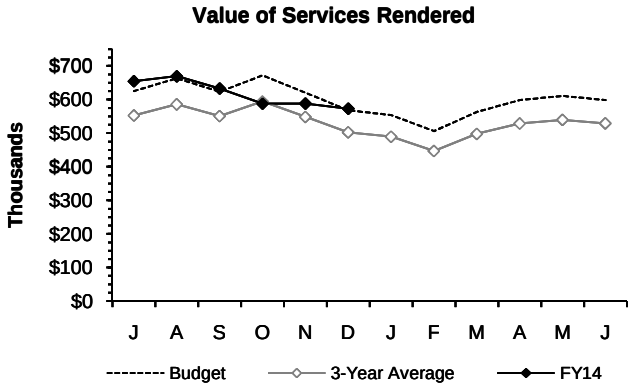
The Percent On-Time measurement was above the 95% goal for two months of the quarter. In November we were catching



Turnaround Time was faster than the 9-day goal each month of the quarter.



Percent of QC tests meeting specifications was slightly below the 98% in-house goal two months of the quarter due to poorer than normal recoveries of organic chemicals



Value of Services Rendered was above the seasonally adjusted budget projection two months of the quarter.

Highlights:
Gave a presentation on lab ethics at the quarterly meeting of the Independent Testing Laboratory Association.

Quality Assurance: DEP performed the every other year audit of the Quabbin Laboratory and no deficiencies were identified. Revised internal chain of custody SOP to comport with LIMS procedures. The in-house quarterly compliance audit on reporting limit and detection limit procedures found good compliance with requirements at all five lab locations.

LIMS: Interface testing of the new version of LIMS was completed successfully. Formal user testing is in progress. Identified issues are being rectified by MIS or the LIMS vendor. Go Live is currently scheduled for Janurary.

Clinton: Performed extra Volatile Acids testing to assist with an operational issue. Provided comments on the draft NPDES permit.

DITP: Tested additional sludge samples for a few weeks in support of a struvite reduction mass balance project.

Wastewater Operations: Tested samples from Revere sewers to investigate possible salt water intrusion.

ENQUAL Clean Water: Reviewed data for low level pesticide/PCB detects in DITP effluent to confirm the consistency of data processing practices. Began collecting regular influent and effuent samples for a silica research project at Boston University.

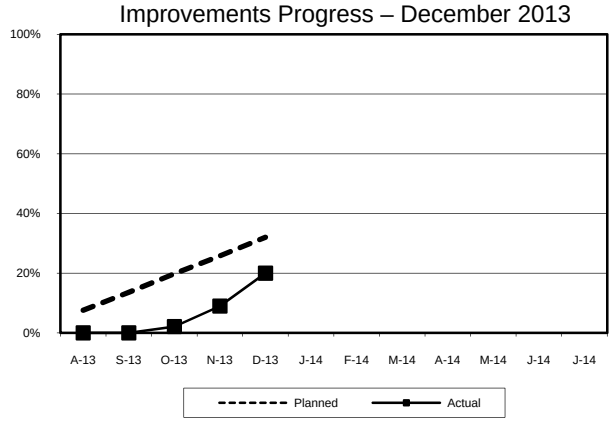
ENQUAL Drinking Water: Canton has decided to bring their drinking water samples to our Southboro Laboratory. This was prompted by their contract laboratory being unavailable to accept off-hours repeat bacteria samples. Completed annual Lead and Copper Rule samples for MWRA, plus Woburn, the DCR Quabbin facility and Hanscom AFB.

Outside Customers: Beginning to receive DCR samples from the Wachusett watershed to study the effect of logging on the surrounding water system.

CONSTRUCTION PROGRAMS

Projects In Construction
2nd Quarter, FY14
(Progress Percentages based on Construction Expenditures)

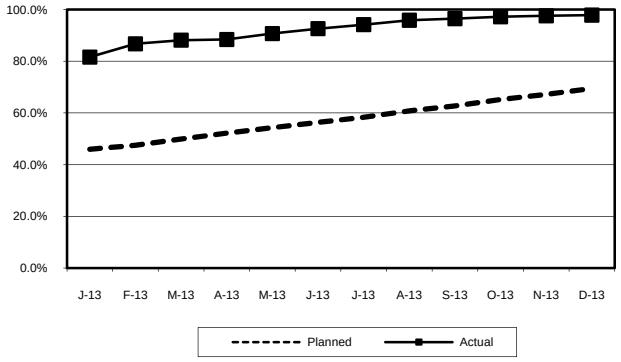
Nut Island Headworks Electrical and Conveyor Improvements Progress – December 2013



Project Summary: This project will replace the floor-slab-embedded electrical conduits in the bottom level of the headworks, as well as improvements to the grit and screenings conveyors.

Status and Issues: As of December, the Contractor, J.F. White, completed the excavation for exterior duct-banks, A1 & A2. They relocated equipment for wall penetrations W4, W5 and W6 in the boiler room. In addition, they completed the demo for roof penetrations R1 and R2 and for wall penetrations W1, W2 and W3.

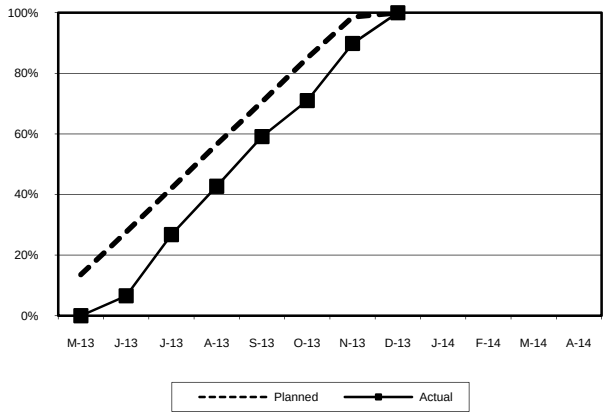
UV Disinfection Facilities CWTP Progress – December 2013



Project Summary: In accordance with the EPA's requirement to have two primary methods of disinfection, the Authority will add an Ultraviolet (UV) light disinfection process at the Carroll Water Treatment Plant, which will render Cryptosporidium inactive.

Status and Issues: As of December, the Contractor completed the removal and replacement of structural fill top soil on the roof of Tanks A & B per the Non-Conformance Report. The electrical contractor completed the installation of card readers for entry doors and performed preliminary function and reliability tests. They also disconnected and reconnected electrical power to knife gates inside the A-side UV room in order to rotate the knife gate actuators.

Watertown Section Rehabilitation Progress - December 2013



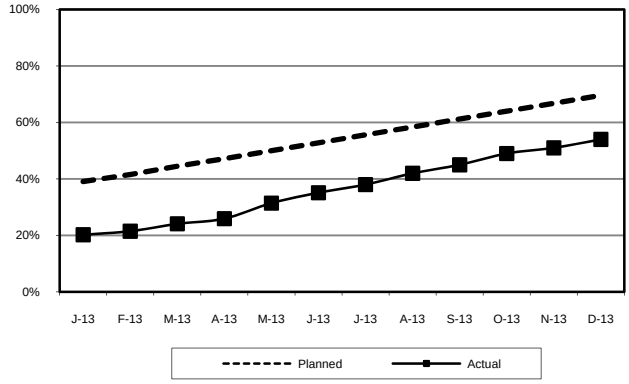
Project Summary: Watertown Section Rehabilitation involves the slip lining of a 5,300 foot-long 30-inch steel pipe with 24-inch High Density Polyethylene (HDPE) pipe and the installation of 400 feet of 24-inch and 30-inch diameter HDPE pipe by open cut.

Status and Issues: As of December, two mechanical coupling leaks developed and were repaired by the Contractor. The line was re-tested, but the test results were outside of the allowable parameters. The Authority has directed the Contractor to make additional repairs and re-test the line. Following an acceptable test, the close out process can begin.

Projects In Construction

(Progress Percentages based on Construction Expenditures)

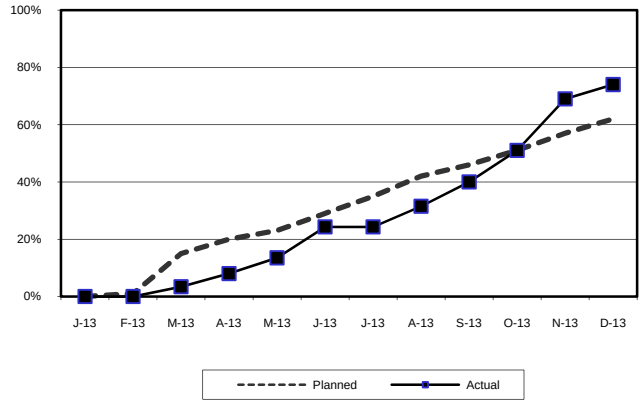
Spot Pond Water Storage Facility
Progress – December 2013



Project Summary: This is a design/build project for the construction of two, 10 million-gallon covered concrete storage tanks and a buried pump station, which will provide back-up redundancy for the Northern High and Northern Intermediate High distribution service areas.

Status and Issues: As of December, work on Tank #2 is nearing completion. Tank #1 base slab is 90% complete, wall sections 79% complete and the roof decks 35% complete. The concrete slabs and wall for the pump station are approximately 85% complete. The tank drain valve vault was installed along with the 8", 12" and 36" DI piping.

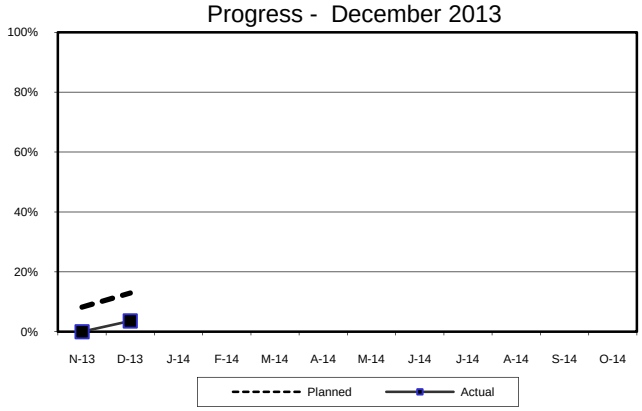
Quabbin UV Disinfection
Progress – December 2013



Project Summary: This project will improve the quality of the drinking water delivered to the CVA communities serviced by the MWRA. It involves the addition of UV disinfection at the Quabbin Disinfection Facility to meet the EPA's regulation for a second means of disinfection for unfiltered water systems.

Status and Issues: Through December, the Contractor completed the installation of the standing seam roof, began installing the aluminum roof trim and continued with the installation of 24-inch BFVs in the UV Room. Additional work included the installation of the domestic plumbing piping and electrical conduit throughout the UV Building.

Pump, Gear Box and Diesel Engine Upgrade
Prison Point and Cottage Farm CSO Facilities
Progress - December 2013



Project Summary: This project involves the rebuilding of pumps right angle gear drives and engines as well as the installation of diesel oxidation catalysts at the Prison Point and Cottage Farm CSO facilities.

Status and Issues: As of December, the Contractor, IPC Lydon, continued with project submittals and met with the right angle drive manufacturer, Phili Gear. In addition, the electrical sub-contractor laid out conduit runs for approval and commenced installing electrical conduit at Cottage Farm.

CSO CONTROL PROGRAM

2nd Quarter - FY14

MWRA and the CSO communities have completed 32 of the 35 projects in the Long-Term CSO Control Plan, including the Interceptor Connection Relief and Floatables Control at Outfall SOM01A project, which MWRA completed in December 2013 ahead of the June 2014 milestone in Schedule Seven. Two CSO projects are in construction: Reserved Channel Sewer Separation by BWSC and CAM004 Sewer Separation by the City of Cambridge. MWRA recently completed 100% design of the last project, Automated Gate and Floatables Control at Outfall MWR003 and Rindge Avenue Siphon Relief, and plans to issue notice to proceed with construction in August 2014. The following table reports on the progress of the three CSO projects not yet complete, as well as BWSC's continuing inflow removal work associated with the completed South Dorchester Bay Sewer Separation project.

Project		Court Milestones in Schedule Seven (Shaded milestones are complete.)			Status as of December 31, 2013
		Commence Design	Commence Construction	Complete Construction	
Reserved Channel Sewer Separation		Jul 06	May 09	Dec 15	BWSC continues to make progress with the nine planned contracts for the $64.8 million Reserved Channel Sewer Separation project. Contract 1 — CSO outfall rehab — $ 4.2 M — Complete Contract 2 — Sewer separation — $ 5.9 M — Complete Contract 3A — Sewer separation — $11.2 M — Complete Contract 3B — Sewer separation — $ 9.6 M — 85% complete Contract 4 — Sewer separation — $ 7.4 M — 70% complete Contract 7 — Pavement restoration — $ 1.1 M — Complete Contract 8 — Pavement restoration — $ 5.4 M — Ongoing BWSC advertised Contract 5 (sewer cleaning and lining – not MWRA-eligible) on December 18, 2013 and received bids for Contract 6 (downspout disconnections) on December 31, 2013, and anticipates awarding both contracts in early 2014. BWSC plans to complete all work for the Reserved Channel sewer separation project by December 2015, in compliance with Schedule Seven.
Cambridge/ Alewife Brook Sewer Separation	CAM004 Sewer Separation	Jan 97	Jul 98 Sep 12	Dec 15	Cambridge completed four initial construction contracts for this project more than a decade ago and has planned three additional contracts (contracts 8A, 8B and 9) to complete the project. Contract 8A — Huron Ave. corridor, west — 65% Complete Contract 8B — Huron Ave. corridor, east — 10% Complete Contract 9 — Concord Ave. corridor — Bids Received Cambridge advertised Contract 9 on October 30, 2013, and received bids on December 5, 2013. P. Gioioso and Sons was the low bidder at $24.2M, of which $6.4M is estimated to be MWRA's share after Cambridge's $8M share of eligible cost per the MOU/FAA ($9.8M difference is not eligible costs as it is not related to MWRA CSO control work). Cambridge anticipates contract award during January 2014. On November 13, MWRA's Board of Directors approved Amendment 11 to the Cambridge MOU/FAA, which included $8M for MWRA's share of the eligible cost of Contract 9.
	MWR003 Gate and Rindge Ave. Siphon Relief	Apr 12	Aug 14	Oct 15	On November 19, 2013, MWRA received the 100% design submission for the improvements at Outfall MWR003 and Rindge Ave. Siphon and expects to award the contract and issue the notice to proceed with construction by August 2014, in compliance with Schedule Seven.

CSO CONTROL PROGRAM (cont.)

Other CSO Related Work				
Project	**Court Milestones in Schedule Seven (Shaded milestones are complete.)**			**Status as of December 31, 2013**
	Commence Design	**Commence Construction**	**Complete Construction**	
South Dorchester Bay Sewer Separation Post-Construction Inflow Removal	N/A	N/A	N/A	BWSC continues to investigate alternatives for removing additional stormwater inflow from its Dorchester Interceptor or otherwise relieving hydraulic conditions in the interceptor during extreme storms following the closing of its CSO regulators with completion of the South Dorchester Bay sewer separation project in 2007. BWSC continues with a construction contract to remove some of the remaining inflow sources from its sewer system. The contract amount is $562,261, of which $204,000 is eligible for MWRA funding under the BWSC CSO MOU and FAA. MWRA's FY14 CIP includes a total of $5.6 million for the inflow removal effort, of which approximately $2.6 million is allocated to awarded design and construction contracts.

CIP Expenditures
2nd Quarter FY14

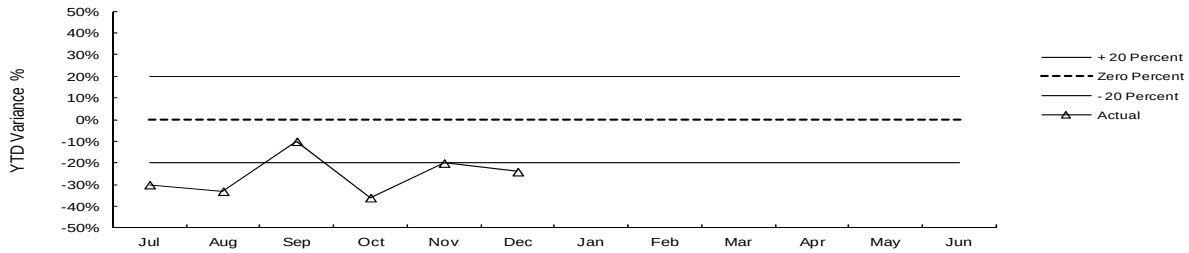
The Year-To-Date variances are highlighted below:

FY14 Capital Improvement Program Expenditure Variances through December by Program ($000)				
Program	FY14 Budget Through December	FY14 Actual Through December	Variance Amount	Variance Percent
Wastewater	24,849	17,521	(7,328)	-29%
Waterworks	30,360	24,521	(5,839)	-19%
Business and Operations Support	3,049	1,994	(1,055)	-35%
Total	$58,258	$44,036	($14,222)	-24%

Underspending within Wastewater is primarily due to lower than anticipated expenditures for contracts 8B and 9 for the Cambridge Sewer Separation project, timing of expenditures for the Reserved Channel Construction 8, and South Dorchester Sewer Separation contracts, award was less than budget for the Nut Island Electrical Grit & Screening Conveyance Construction, timing of equipment delivery for the Centrifuge Back-drive Replacement construction, reduced scope for the North Dorchester Outfall Design/Construction Administration/Resident Inspection contract, and delay in start-up of the Deer Island Roof 3 contract. This was partially offset by greater than anticipated community requests for grants and loans for the Infiltration/Inflow (I/I) Program and work anticipated in FY13 but completed in FY14 for the Digester Modules 1 & 2 Pipe Replacement and Expansion Joint Repair 2 contracts. Underspending in Waterworks is primarily due to delay in constructing permanent detention basin due to coordination issues and delay in equipment delivery for the Spot Pond Storage Facility Design/Build contract, WASM 3 Design Construction Administration/Resident Inspection award was less than budget, delay in equipment delivery for the Quabbin Ultraviolet Disinfection Construction, lower award for Gillis Pump Station Improvements, and Southern Spine Section 21,43 & 22 Design/Construction Services/Resident Inspection being completed under budget. This was partially offset by community requests for loans were greater than anticipated and contractor progress for the Weston Aqueduct Supply Mains Watertown Section.

CIP Expenditure Variance

Total FY14 CIP Budget of $142,461,000.



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 12/28/2013	$84 million
Unused capacity under the debt cap:	$730 million
Estimated date for exhausting construction fund without new borrowing:	May-14
Estimated date for debt cap increase to support new borrowing:	Not anticipated at this time
Commercial paper outstanding: Commercial paper capacity:	$144 million $350 million
Budgeted FY14 capital spending*:	$125 million

* Cash based spending is discounted for construction retainage.

DRINKING WATER QUALITY AND SUPPLY

Source Water – Microbial Results and UV Absorbance

2nd Quarter – FY14

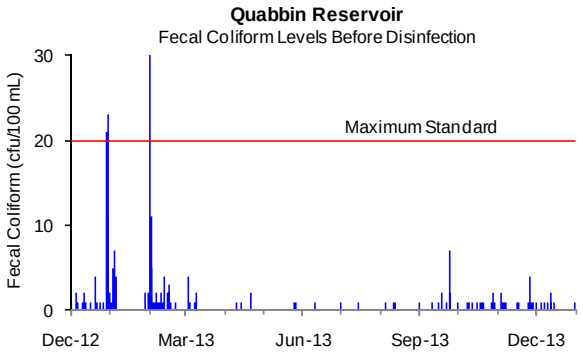
Source Water – Microbial Results

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 coliform, 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 Ware Disinfection Facility (WDF) raw water tap before being treated and entering the CVA system.

All samples collected during the 2nd 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.**

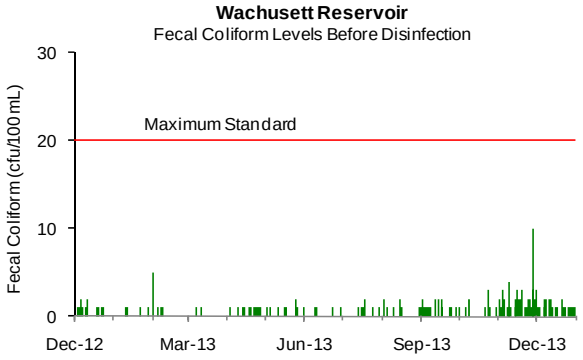


Sample Site: Wachusett Reservoir

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 2nd Quarter were below 20 cfu/100mL. **For the current six-month period, 0% of the samples exceeded a count of 20 cfu/100mL.**

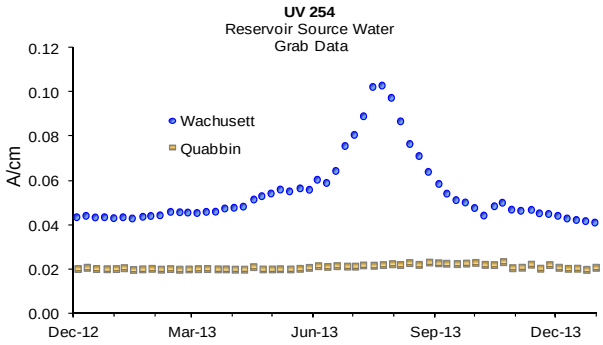


Source Water – UV Absorbance

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. Hurricanes can have a significant and long lasting impact.

Quabbin Reservoir UV-254 levels are currently around 0.02 A/cm.

Wachusett Reservoir UV-254 levels are currently around 0.04 A/cm.



Source Water – Turbidity

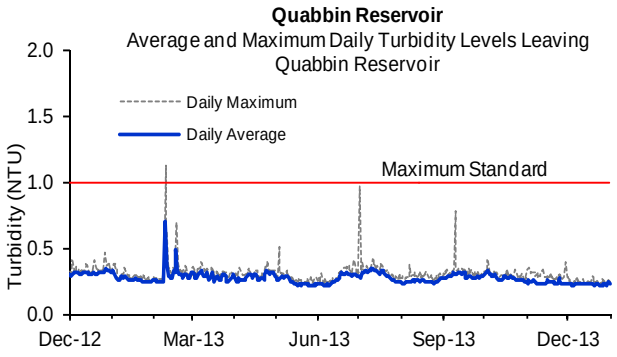
2nd Quarter – FY14

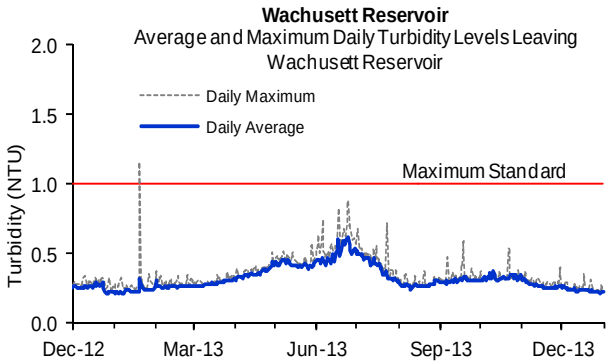
Turbidity is a measure of suspended and colloidal particles including clay, silt, organic and inorganic matter, algae and microorganisms. The effects of turbidity depend on the nature of the matter that causes the turbidity. High levels of particulate matter may have a higher disinfection demand or may 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 5 NTU (Nephelometric Turbidity Units), and water only can be above 1 NTU if it does not interfere with effective disinfection.

Turbidity of Quabbin Reservoir water is monitored continuously at the Ware Disinfection Facility (WDF) before chlorination. Turbidity of Wachusett Reservoir is monitored continuously at the Carroll Water Treatment Plant before ozonation.

Maximum turbidity results at Quabbin and Wachusett were within DEP standards for the quarter

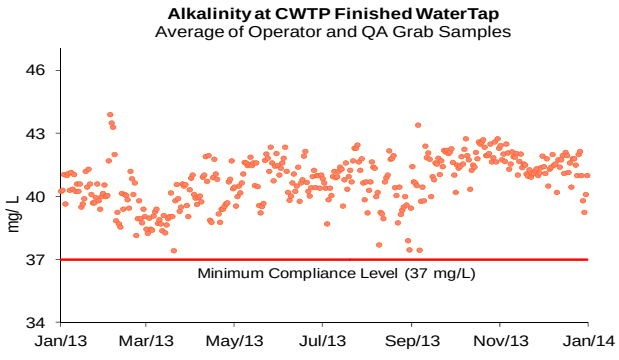


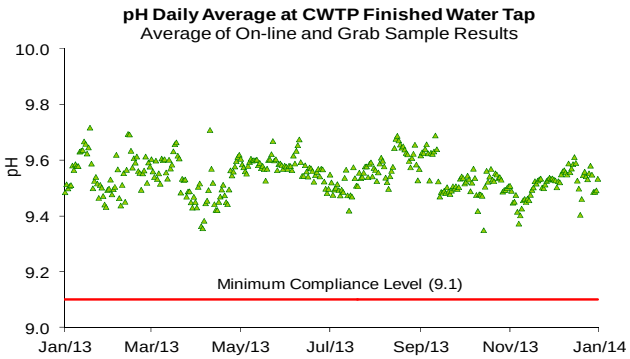


Treated Water – pH and Alkalinity Compliance

MWRA adjusts the alkalinity and pH of Wachusett water 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 samples have a minimum compliance level of 9.1 for pH and 37 mg/L for alkalinity. Samples from 27 distribution system taps 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.

Distribution system samples were collected on December 11 and 12, 2013. Distribution system sample pH ranged from 9.3 to 9.6 and alkalinity ranged from 41 to 43 mg/L. No sample results were below DEP limits for this quarter.





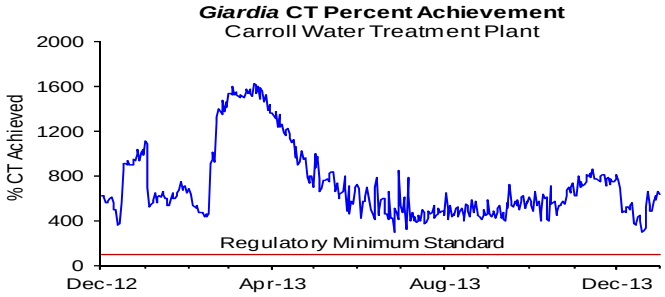
Treated Water – Disinfection Effectiveness

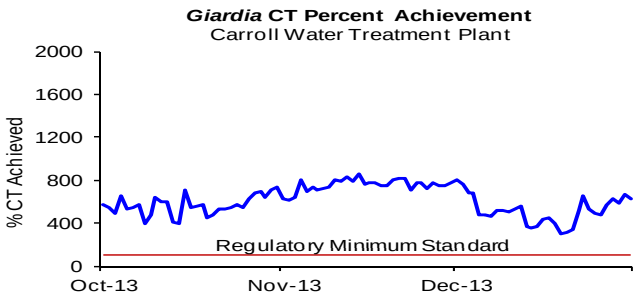
2nd Quarter – FY14

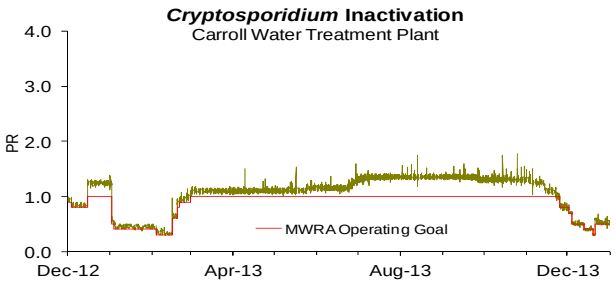
At the Carroll Water Treatment Plant (CWTP), MWRA reports on both regulatory required 99.9% inactivation for *Giardia* (reported as "CT"), and its voluntary operating goal of 99% inactivation for *Cryptosporidium*. MWRA calculates hourly CT inactivation rates and reports daily CT inactivation rates at maximum flow, as specified by EPA regulations. The concentration (C) of the disinfectant over time (T) yields a measure of the effectiveness of disinfection. CT achievement for *Giardia* assures CT achievement for viruses, which have a lower CT requirement. The required CT for ozonated water varies with water temperature. Compliance with the *Giardia* standard is expressed as percent of required CT achieved; 100% is the minimum allowed. To avoid confusion with regulatory requirements, inactivation of *Cryptosporidium* is reported as Performance Ratio (PR); a PR of 1 demonstrates inactivation of 99% of *Cryptosporidium* based on site-specific data.

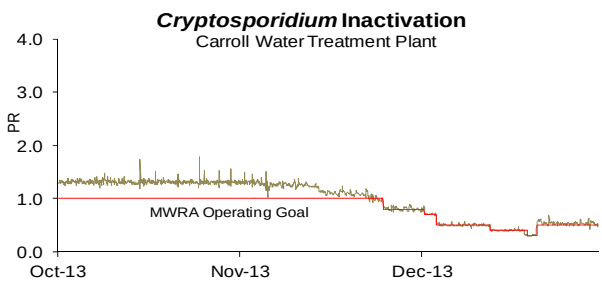
Wachusett Reservoir – MetroWest/Metro Boston Supply:

- Ozone dose at the CWTP varied between 1.6 to 3.8 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.
- MWRA will not be able to fully meet the voluntary *Cryptosporidium* inactivation target during the winter months due to the UV construction eliminating the extended ozone contactors. This change in treatment was reviewed and approved by the MA DEP as part of its permitting for this project. The lowest ozone PR achieved this quarter was 0.3, which provides 75% *Cryptosporidium* inactivation.
- UV treatment has been added at the Carroll Water Treatment Plant. UV is a highly effective disinfectant. The UV system is operating in extended testing mode and is achieving over 99% *Cryptosporidium* inactivation of 95% of the water.



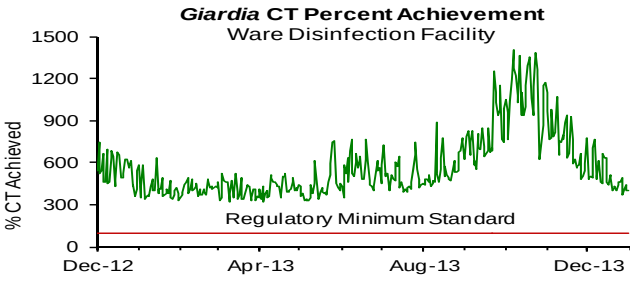


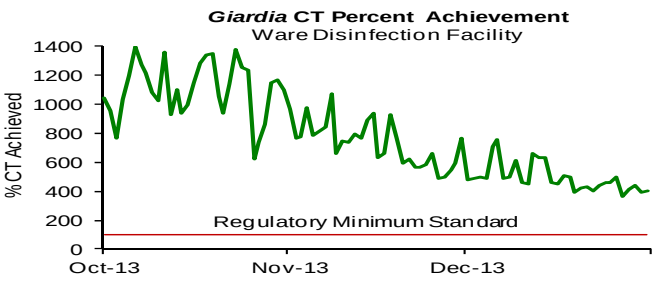




Quabbin Reservoir at Ware Disinfection Facility (CVA Supply):

CT was maintained above 100% at all times the plant was providing water into the distribution system for the quarter, as well as every day for the last fiscal year. The chlorine dose at Ware Disinfection Facility (WDF) is adjusted in order to achieve MWRA's seasonal target of ≥0.75 mg/L (November 01 – May 31) and ≥1.0 mg/L (June 1– October 31) at Ludlow Monitoring Station. The chlorine dose at WDF varied between 1.3 to 1.7 mg/L for the quarter.





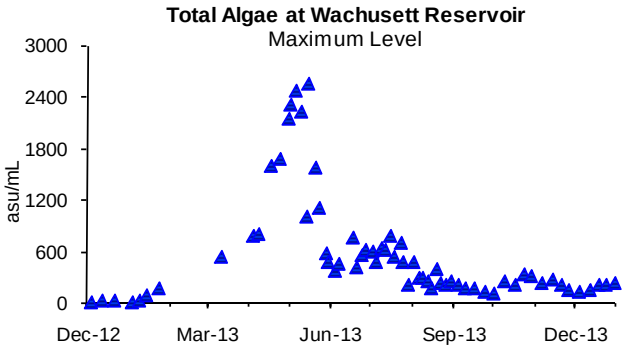
Source Water - Algae

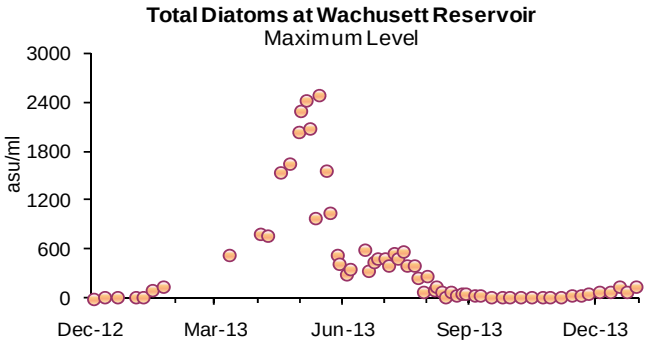
2nd Quarter – FY14

Algae levels in Wachusett 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 reservoir with copper sulfate, an algaecide. 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 2nd Quarter, there were no complaints which may be related to algae reported from local water departments.



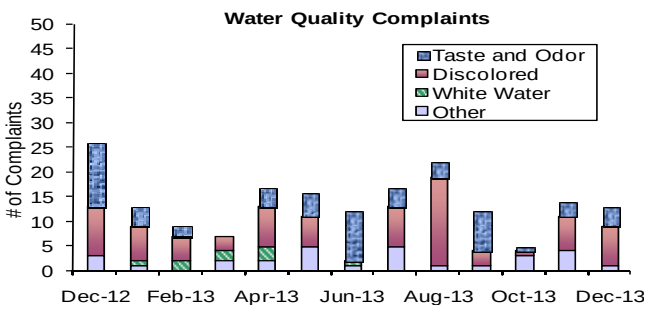


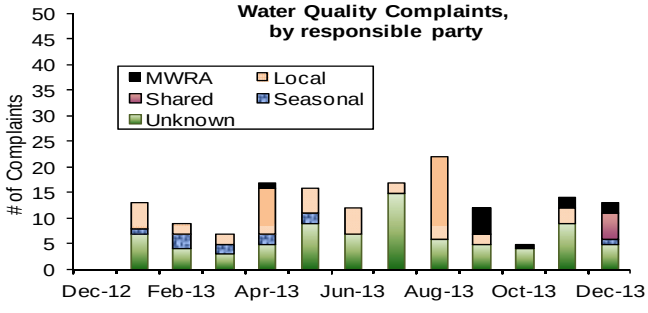
Drinking Water Quality Customer Complaints: Taste, Odor, or Appearance

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 32 complaints during the quarter compared to 69 compared complaints for 2nd Quarter of FY13. Of these complaints, 16 were for "discolored water", 8 were for "taste and odor", and 8 were for "other". Of these complaints, 3 were local community issues, 5 were an MWRA issue, 5 were a shared MWRA and local community issue, 1 was seasonal in nature, and 18 were unknown.





* *Reporting by Responsible Party trending initiated January 2013.

Bacteria & Chlorine Residual Results for Communities in MWRA Testing Program

2nd Quarter – FY14

While all communities collect bacteria samples for the Total Coliform Rule (TCR), 43 systems (including Deer Island and Westborough State Hospital) use MWRA's Laboratory for TCR compliance testing. These systems collect samples for bacteriological analysis and measure water temperature and chlorine residual at the time of collection.

There are 139 sampling locations for which MWRA is required to report TCR results. These locations include a subset of the community TCR locations, as well as sites along MWRA's transmission system, water storage tanks, and pumping stations.

The TCR requires that no more than 5% of all samples may be total coliform positive in a month (or that no more than one sample be positive when less than 40 samples are collected each month). Public notification is required if this standard is exceeded.

Escherichia coli (*E.coli*) is a specific coliform species that is almost always present in fecal material and whose presence indicates potential contamination of fecal origin. If *E.coli* are detected in a drinking water sample, this is considered evidence of a critical public health concern. Public notification is required if follow-up tests confirm the presence of *E.coli* or total coliform. 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

In the 2nd Quarter, twenty-six of the 6,076 community samples (0.04% system-wide) submitted to MWRA labs for analysis tested positive for coliform (Bedford, Boston, Hanscom AFB, Lynnfield, Needham, Swampscott, Waltham, Winthrop – in October; Framingham, Hanscom AFB, Needham and South Hadley FD – in November). Lynnfield and Bedford violated the TCR in October. South Hadley FD violated the TCR in November. Of the 1,914 MWRA samples taken, five tested positive (0.3%) for total coliform. No sample tested positive for *E.coli*. Only 4.5% of samples had any chlorine residuals lower than 0.2 mg/L for the quarter.

		# Coliform Samples (a)	Total Coliform # (%) Positive	E.coli # Positive	Public Notification Required?	Minimum Chlorine Residual (mg/L)	Average Chlorine Residual (mg/L)
	MWRA Sampling Locations (d)	1914	5 (0.3%)	0	No	0.02	2.13
Fully Served	ARLINGTON	181	0 (0%)	0		0.01	1.50
	BELMONT	104	0 (0%)	0		0.01	1.80
	BOSTON	801	2 (0.3%)	0	No	0.24	2.23
	BROOKLINE	221	0 (0%)	0		0.06	2.43
	CHELSEA	169	0 (0%)	0		1.20	1.64
	DEER ISLAND	53	0 (0%)	0		1.00	2.47
	EVERETT	170	0 (0%)	0		0.01	1.13
	FRAMINGHAM	222	2 (0.9.%)	0	No	0.14	1.80
	LEXINGTON	114	0 (0%)	0		0.89	2.64
	LYNNFIELD	24	2 (8.3%)	0	Yes	0.17	1.05
	MALDEN	234	0 (0%)	0		1.54	1.63
	MARBLEHEAD	72	0 (0%)	0		0.16	2.02
	MEDFORD	204	0 (0%)	0		0.17	1.81
	MELROSE	117	0 (0%)	0		0.01	1.15
	MILTON	96	0 (0%)	0		1.22	1.86
	NAHANT	30	0 (0%)	0		0.06	1.31
	NEWTON	276	0 (0%)	0		0.35	2.35
	NORWOOD	99	0 (0%)	0		0.02	1.80
	QUINCY	299	0 (0%)	0		0.06	1.64
	READING	140	0 (0%)	0		0.01	1.41
	REVERE	195	0 (0%)	0		0.99	2.30
	SAUGUS	112	0 (0%)	0		1.37	1.88
	SOMERVILLE	272	0 (0%)	0		1.08	1.97
	SOUTHBOROUGH	30	0 (0%)	0		0.15	2.20
	STONEHAM	91	0 (0%)	0		0.90	2.13
	SWAMPSCOTT	57	1 (1.8%)	0	No	0.14	1.60
	WALTHAM	225	3 (1.3%)	0	No	0.46	2.05
	WATERTOWN	130	0 (0%)	0		0.62	2.36
	WESTBORO HOSPITAL	15	0 (0%)	0		0.04	0.30
	WESTON	48	0 (0%)	0		1.48	2.51
	WINTHROP	75	1 (1.3%)	0	No	0.01	1.21
	Total: Fully Served	*4876*	*11 (0.2%)*				
CVA & Partially Served	BEDFORD	81	8 (9.9%)	0	Yes	0.09	1.10
	CANTON	93	0 (0%)	0		0.01	0.54
	HANSCOM AFB	33	2 (6.1%)	0	No	0.06	0.94
	MARLBORO	126	0 (0%)	0		0.37	2.46
	NEEDHAM	130	3 (2.3%)	0	No	0.06	0.93
b	NORTHBORO	48	0 (0%)	0		0.03	1.43
	WAKEFIELD	154	0 (0%)	0		0.41	1.35
	WELLESLEY	113	0 (0%)	0		0.02	0.64
	WILMINGTON	87	0 (0%)	0		0.11	1.40
	WINCHESTER	70	0 (0%)	0		0.24	1.66
	WOBURN	210	0 (0%)	0		0.01	0.99
c	SOUTH HADLEY FD1	55	2 (3.6%)	0	No	0.18	0.51
	Total: CVA & Partially Served	*1200*	*15 (1.3%)*				
	Total: Community Samples	*6076*	*26 (0.4%)*				

(a) The number of samples collected depends on the population served and the number of repeat samples required.
(b) These communities are partially supplied, and may mix their chlorinated supply with MWRA chloraminated supply.
(c) Part of the Chicopee Valley Aqueduct System. Free chlorine system.
(d) MWRA total coliform and chlorine residual results include data from 125 community pipe locations as described above. In most cases these community results are accurately indicative of MWRA water as it enters the community system; however, some are clearly strongly influenced by local pipe conditions. Residuals in the MWRA system are typically between 1.0 and 2.8 mg/L.

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

2nd Quarter – FY14

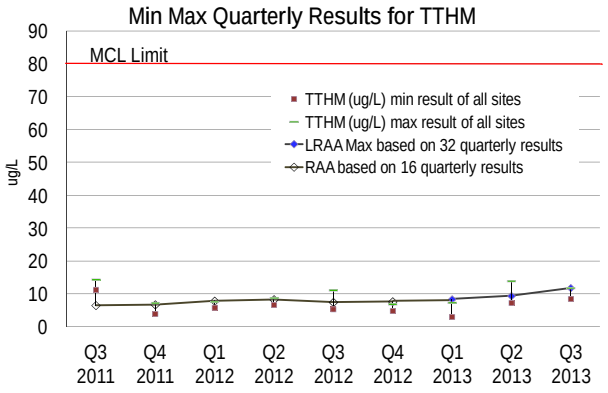
Total Trihalomethanes (TTHMs) and Haloacetic Acids (HAA5s) are by-products of disinfection treatment with chlorine. TTHMs and HAA5s are of concern due to their potential adverse health effects at high levels. EPA's running annual average (RAA) standard is 80 µg/L for TTHMs and 60 µg/L for HAA5s. For the MetroBoston system, effective Q2 2013, under the Stage 2 DBP Rule, compliance is based on locational running annual averages (LRAA). Sampling locations have increased from 16 to 32 each quarter. Data prior to Q1 2013 reports the running annual average, and since Q1 2013, the maximum LRAA is reported (in addition to min and max values). Partially served communities are responsible for their own compliance monitoring and reporting, and must be contacted directly for their results.

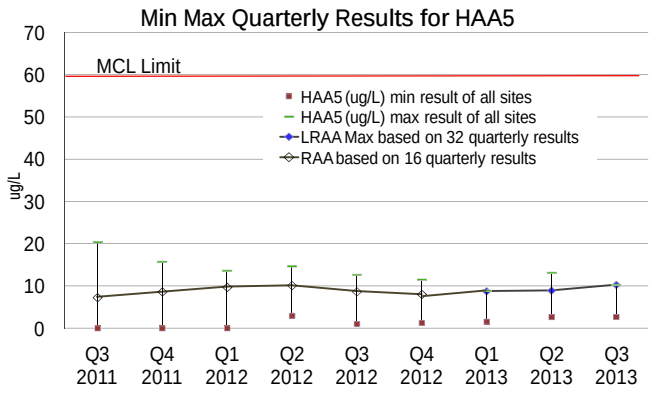
For the CVA communities, effective Q3 2013, under the Stage 2 DBP Rule, compliance is based on a LRAA for each community. Sampling locations have increased from 12 to 14 each quarter. Prior to Q3 2013, the running annual average is reported, and since Q3 2013, the maximum LRAA is reported (in addition to min and max values). The chart below combines all three CVA communities data. Partially served communities are responsible for their own compliance monitoring and reporting, and must be contacted directly for their results.

Bromate is tested monthly per DEP requirements for water systems that treat with ozone. Bromide in the raw water may be converted into bromate following ozonation. EPA's RAA MCL standard for bromate is 10 ug/L.

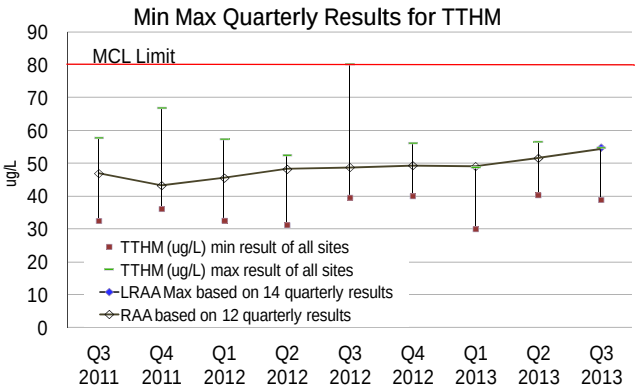
The RAA for TTHMs and HAA5s for MWRA's Compliance Program (represented as the line in the top two graphs below) remain below current standards. The LRAA for TTHMs = 11.8 ug/L; HAA5s = 10.3 ug/L. The current RAA for Bromate = 0.0 ug/L. CVA's DBP levels continue to be below current standards.

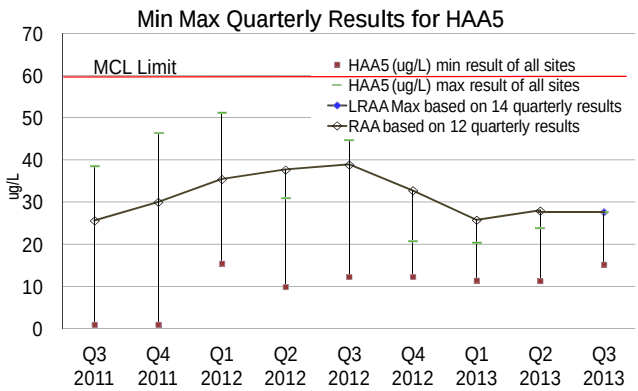
MetroBoston Disinfection By-Products





CVA Disinfection By-Products





Water Supply and Source Water Management

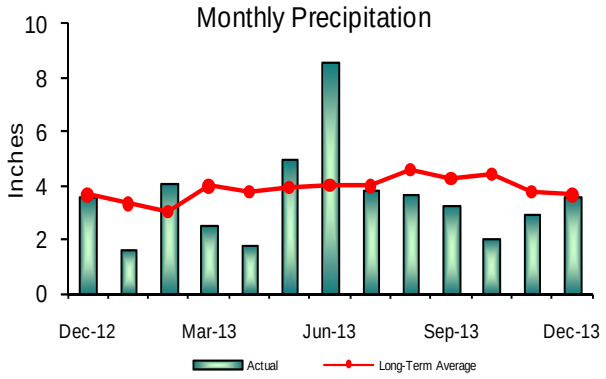
2nd Quarter – FY14

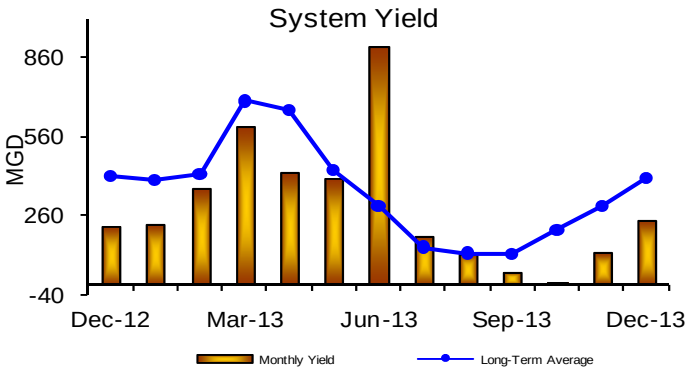
Background

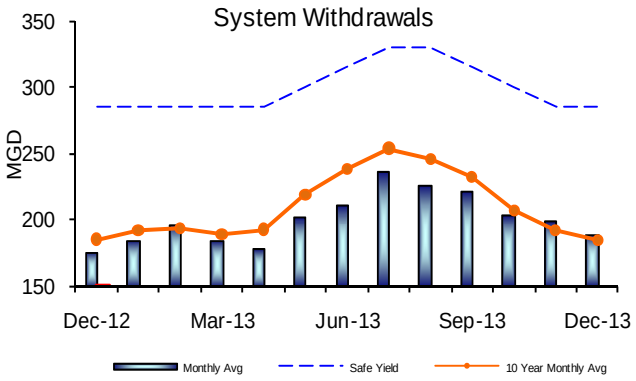
A reliable supply of water in MWRA's reservoirs depends on adequate precipitation during the year and seasonal hydrologic inputs from watersheds that surround the reservoirs. Demand for water typically increases with higher summer temperatures and then decreases as temperatures decline. Quabbin Reservoir 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.

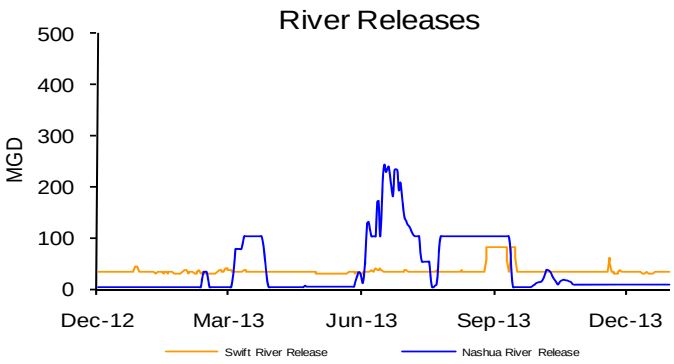
Outcome

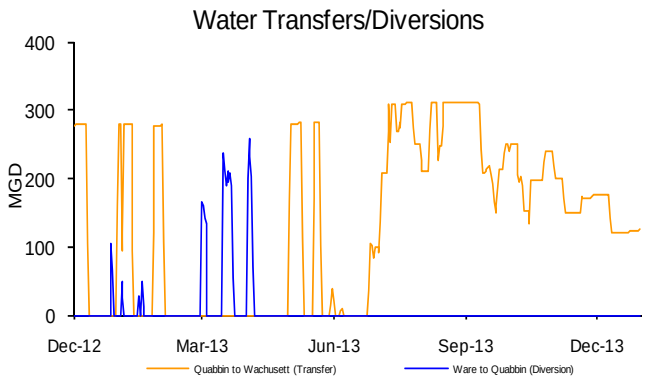
Quabbin Reservoir level remains within the normal operating range for this period of the year. The volume of the Quabbin Reservoir was at 88.3% as of December 31, 2013; a 2.9% decrease for the quarter, which represents a decrease of 11.7 billion gallons of storage. Yield and precipitation for the quarter were below their their respective long term quarterly averages. Monthly withdrawals continue to be below its long-term average.

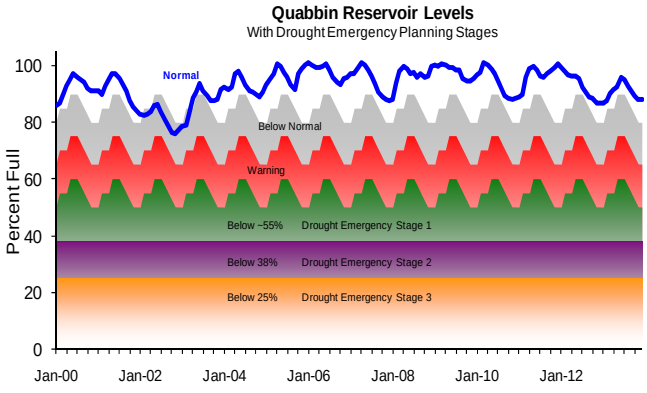












WASTEWATER QUALITY

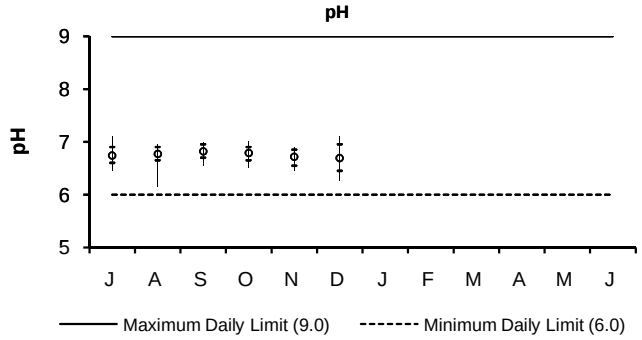
NPDES Permit Compliance: Deer Island Treatment Plant

2nd Quarter - FY14

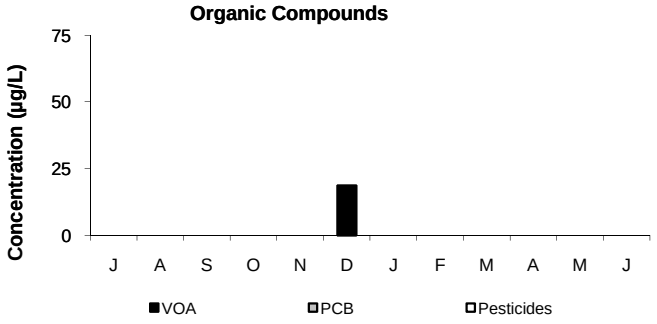
NPDES Permit Limits

Effluent Characteristics		*Units*	*Limits*	*October*	*November*	*December*	*2nd Quarter Violations*	*FY14 YTD Violations*
Dry Day Flow:		mgd	436	269.2	263.4	262.8	0	0
cBOD:	Monthly Average	mg/L	25	4.2	6.4	7.0	0	0
	Weekly Average	mg/L	40	4.7	8.2	7.9	0	0
TSS:	Monthly Average	mg/L	30	4.7	6.7	9.1	0	0
	Weekly Average	mg/L	45	5.5	8.8	9.7	0	0
TCR:	Monthly Average	ug/L	456	<40	<40	<40	0	0
	Daily Maximum	ug/L	631	<40	<40	<40	0	0
Fecal Coliform:	Daily Geometric Mean	col/100mL	14000	9	17	11	0	0
	Weekly Geometric Mean	col/100mL	14000	6	6	6	0	0
	% of Samples >14000	%	10	0	0	0	0	0
	Consecutive Samples >14000	#	3	0	0	0	0	0
pH:		SU	6.0-9.0	6.5-7.0	6.5-6.9	6.3-7.1	0	0
PCB, Aroclors:	Monthly Average	ug/L	0.000045	UNDETECTED			0	0
Acute Toxicity:	Mysid Shrimp	%	≥50	>100	>100	>100	0	0
	Inland Silverside	%	≥50	>100	>100	>100	0	0
Chronic Toxicity:	Sea Urchin	%	≥1.5	100	100	100	0	0
	Inland Silverside	%	≥1.5	50	25	50	0	0

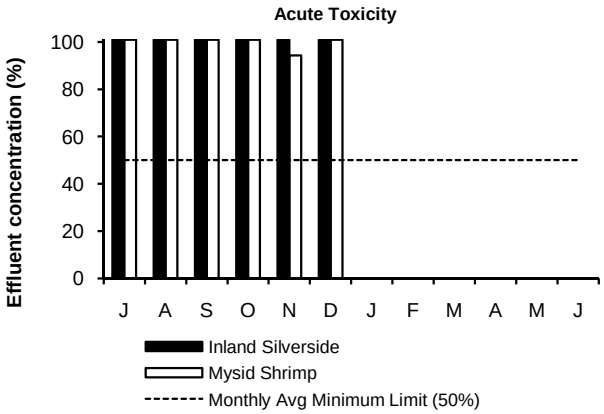
There have been no permit violations in FY14 at the Deer Island Treatment Plant.



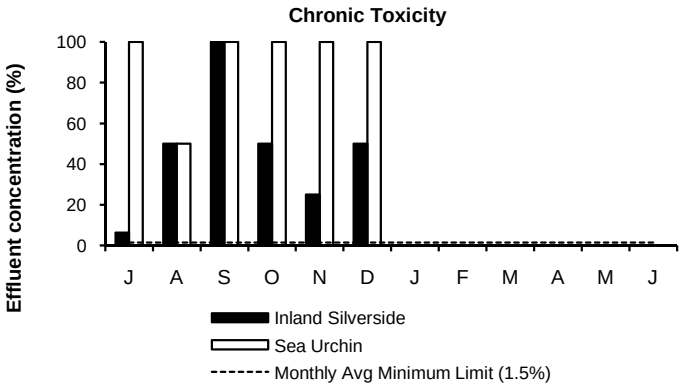
pH is a measure of the alkalinity or acidity of the effluent. Fluctuations in pH do not have an adverse effect on marine environments. Because of the pure oxygen used in the activated sludge reactor, the effluent pH tends to be at the lower pH range. pH measurements for the 2nd Quarter were within the daily permit limits.



An important wastewater component monitored in the effluent is organic compounds, such as volatile organic acids, pesticides, and polychlorinated biphenyls, which are all sampled monthly. The secondary treatment process has significantly reduced organic compounds in the effluent stream. In the 2nd Quarter, VOAs were detected in December. The other monthly samples throughout the quarter were below the detection limit.



The acute toxicity test simulates the short-term toxic effects of chemicals in wastewater effluent on marine animals. The test measures the concentration (percent) of effluent that kills half the test organisms within four days. The higher the concentration of effluent required, the less toxic the effluent. For permit compliance, the effluent concentration that causes mortality to mysid shrimp and inland silverside must be at least 50%. Acute toxicity permit limits were met for the 2nd Quarter for both the inland silverside and mysid shrimp.



Typically, effects of chronic exposures differ from those of acute exposures. Because of this, chronic toxicity responses are not necessarily related to acute toxicity. The chronic toxicity test simulates the long-term toxic effects of chemicals in wastewater effluent on marine animals. To meet permit limits, a solution of 1.5% effluent and 98.5% dillution water must show no observed effect on the growth and reproduction of the test species. Chronic toxicity permit limits were met for the 2nd Quarter for both the inland silverside and sea urchin.

NPDES Permit Compliance: Clinton Wastewater Treatment Plant

2nd Quarter - FY14

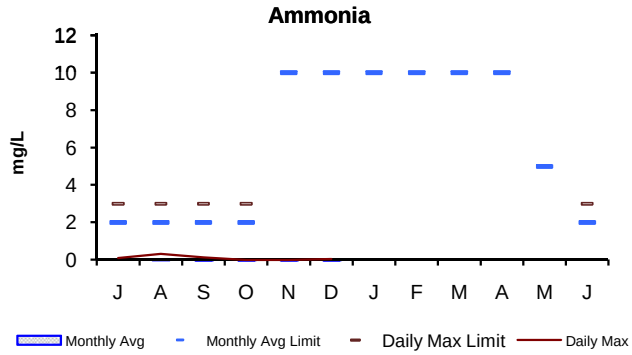
NPDES Permit Limits

Effluent Characteristics		*Units*	*Limits*	*October*	*November*	*December*	*2nd Quarter Violations*	*FY14 YTD Violations*
Flow:		mgd	3.01	2.55	2.50	2.46	0	0
BOD:	Monthly Average:	mg/L	20	2.9	4.5	5.3	0	0
	Weekly Average:	mg/L	20	3.1	6.7	6.2	0	0
TSS:	Monthly Average:	mg/L	20	2.9	5.2	6.9	0	0
	Weekly Average:	mg/L	20	3.7	7.7	7.5	0	0
pH:		SU	6.5-8.3	7.0-7.5	7.0-7.5	7.0-7.5	0	0
Dissolved Oxygen:	Daily Minimum:	mg/L	6	6.2	6.1	9.0	0	0
Fecal Coliform:	Daily Geometric Mean:	col/100mL	400	6	28	5	0	0
	Monthly Geometric Mean:	col/100mL	200	3	4	3	0	0
TCR:	Monthly Average:	ug/L	50	0	0	0	0	0
	Daily Maximum:	ug/L	50	7	0	0	0	0
Total Ammonia Nitrogen:	May 1 - May 31							
	Monthly Average:	mg/L	10.0	0.00	0.00	0.02	0	0
	Daily Maximum:	mg/L	35.2	0.00	0.00	0.05	0	0
Copper:	Monthly Average:	ug/L	20	6.7	5.8	9.9	0	0
Phosphorus:	May 1 - Oct 31							
	Monthly Average:	mg/L	1.0	0.25	--	--	0	0
Acute Toxicity:	Daily Minimum:	%	≥100	*N/A	*N/A	>100	0	0
Chronic Toxicity:	Daily Minimum:	%	≥62.5	*N/A	*N/A	12.5	1	1

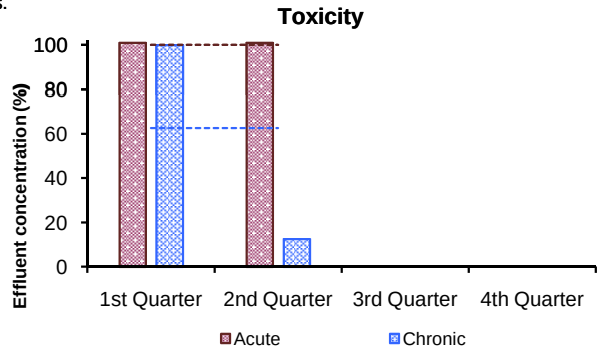
There has been one permit violation in FY14 at the Clinton Treatment Plant.

1st Quarter: There were no permit violations in the 1st Quarter of FY14.
2nd Quarter: There was one permit violation in the 2nd Quarter of FY14. In December 2013, the chronic toxicity was 12.5%, which is below the permit minimum of 62.5%.

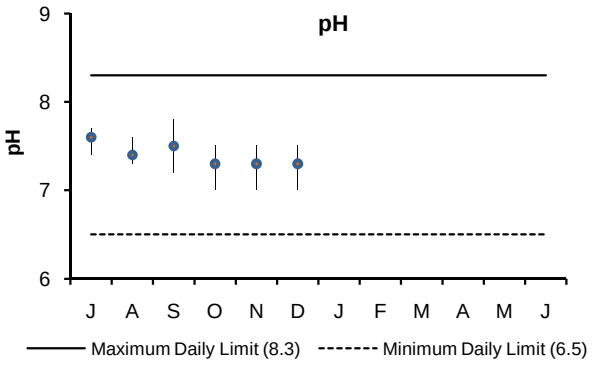
*Toxicity testing at the Clinton Treatment Plant is conducted on a quarterly basis.



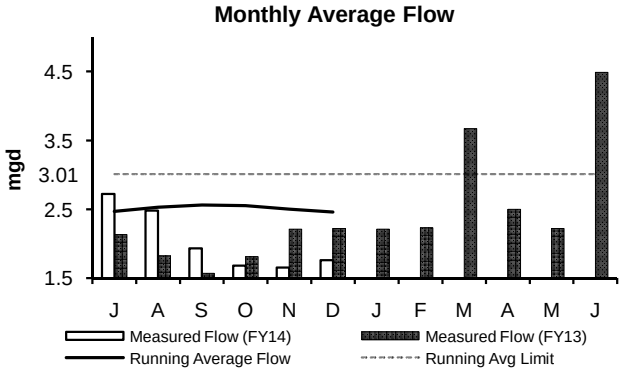
The 2nd Quarter's monthly average and daily maximum concentrations were below the permit limits. The monthly average and daily maximum limits for the 2nd Quarter are 2 mg/L and 3 mg/L (October) and 10.0 mg/L and 35.2 mg/L (November and December). The permit limits are most stringent from June to October when warm weather conditions are most conducive to potential eutrophication.



Acute and chronic toxicity testing simulates the short- and long-term toxic effects of chemicals in wastewater effluent on aquatic animals. For permit compliance, the effluent concentration that causes mortality to the daphnid in acute and chronic testing must be at least >100% and 62.5%, respectively. The chronic toxicity was below the permit minimum and therefore is a permit violation in December 2013.



pH is a measure of the alkalinity or acidity of the effluent. All daily pH results for the 2nd Quarter were within the range allowed by the permit.



The graph depicts the running annual average monthly flow, measured in million gallons per day, exiting the plant. The average monthly flows during the 2nd Quarter met the NPDES permit limit.

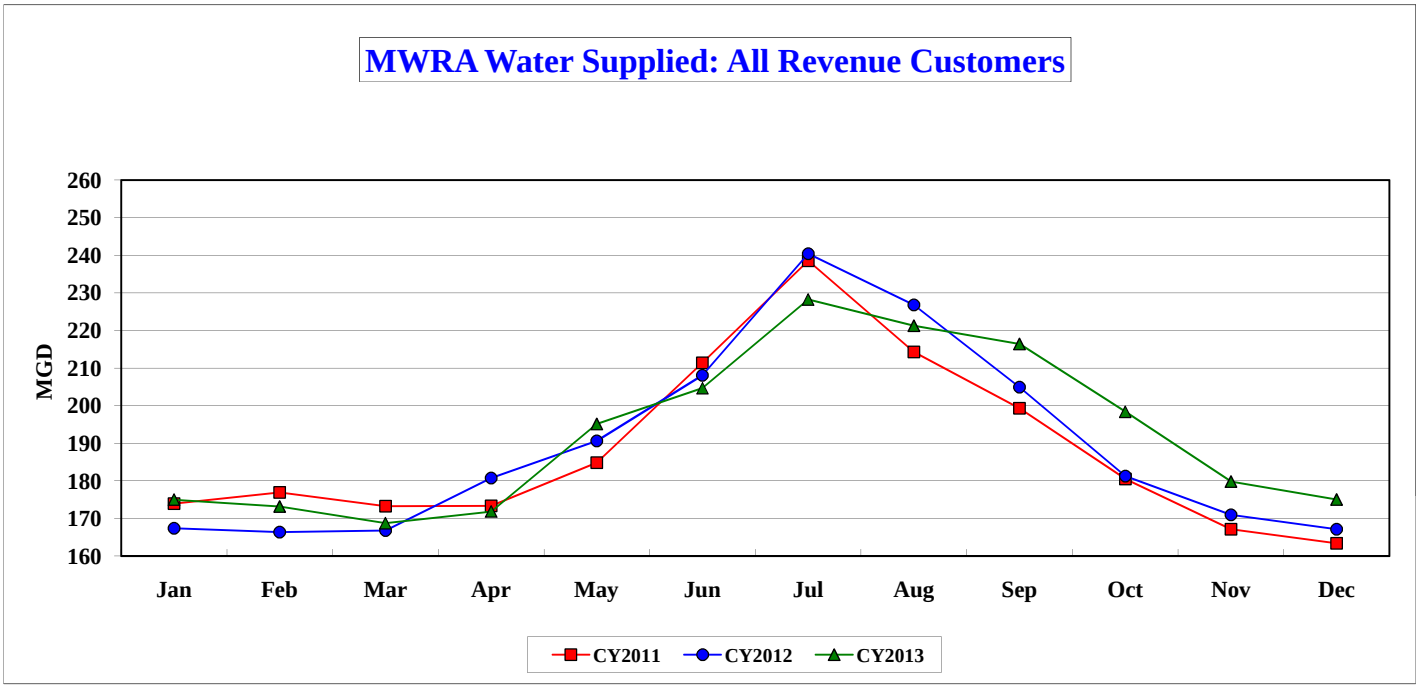
COMMUNITY FLOWS AND PROGRAMS

Total Water Use
MWRA Core Customers
2nd Quarter - FY14

Massachusetts Water Resources Authority
Water Supplied: All Revenue Customers

MGD	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average
CY2011	173.966	176.954	173.282	173.365	184.876	211.428	238.555	214.332	199.314	180.513	167.117	163.398	188.186
CY2012	167.372	166.339	166.837	180.719	190.613	208.064	240.451	226.777	204.916	181.292	171.007	167.163	189.401
CY2013	174.996	173.168	168.729	171.838	195.119	204.640	228.278	221.268	216.427	198.406	179.809	175.062	192.460

MG	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
CY2011	5,392.957	4,954.726	5,371.743	5,200.956	5,731.167	6,342.840	7,395.198	6,644.291	5,979.426	5,595.917	5,013.513	5,065.332	68,688.064
CY2012	5,188.526	4,823.828	5,171.960	5,421.579	5,908.998	6,241.906	7,453.978	7,030.086	6,147.483	5,620.049	5,130.219	5,182.049	69,320.661
CY2013	5,424.874	4,848.707	5,230.598	5,155.146	6,048.690	6,139.195	7,076.614	6,859.306	6,492.801	6,150.597	5,394.269	5,426.928	70,247.724



Attached for your information is the December 2013 Community Water Use Report recently distributed to communities served by the MWRA 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 2013 water use will be used to allocate the FY15 water utility rate revenue requirement.

December 2013 water supplied of 175.1 mgd (for revenue generating users) is up 7.9 mgd or 4.7% compared to December 2012. This includes 9.0 mgd supplied to the City of Cambridge and 0.5 mgd supplied to the Town of Hudson.

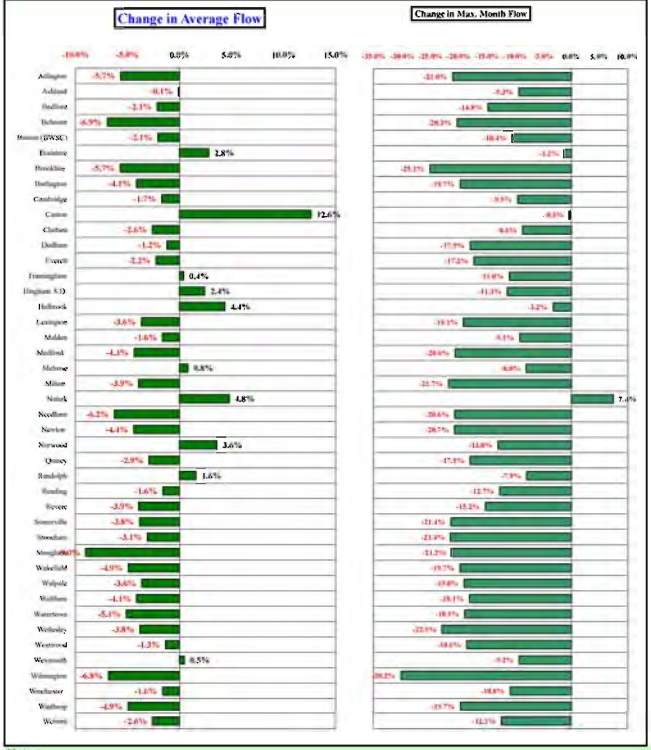
Including the water supplied to Cambridge and Hudson, annual system-wide consumption for CY13 is higher than CY12 with 192.5 mgd being supplied to MWRA customers through December. This is 3.1 mgd higher than CY12, and is an increase of 1.6%. Netting out the 3.3mgd supplied to Cambridge and Hudson, system -wide CY13 consumption was essentially level with CY12 , with a decrease of 0.2mgd.

Community Wastewater Flows

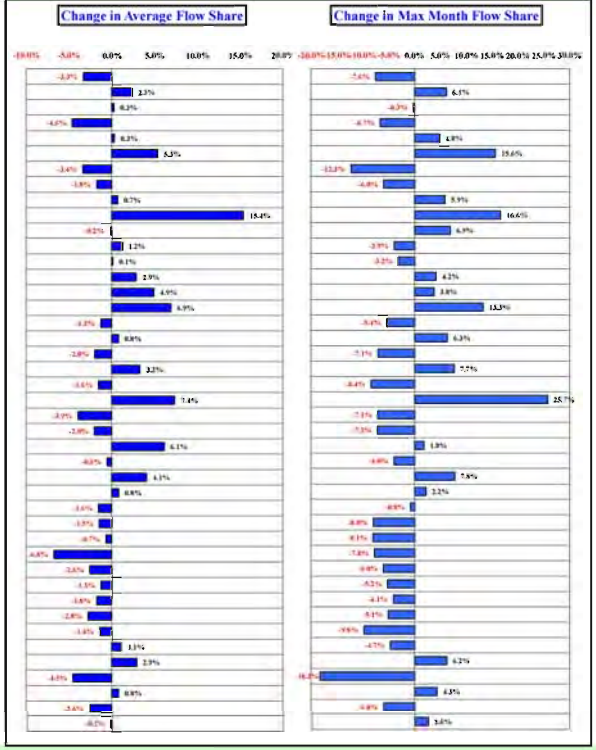
2nd Quarter - FY14

How Projected CY2013 Community Wastewater Flows Could Effect FY2015 Sewer Assessments [1,2,3]

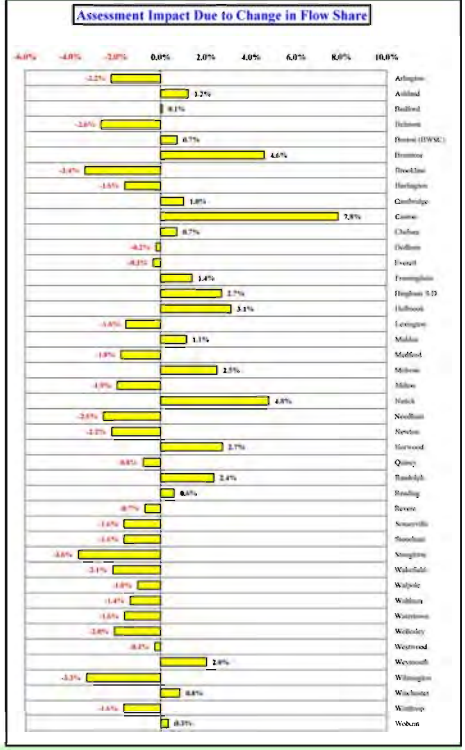
The flow components of FY2015 sewer assessments will be calculated using a 3-year average of CY2011 to CY2013 wastewater flows compared to FY2014 assessments that used a 3-year average of CY2010 to CY2012 wastewater flows.



But as MWRA's sewer assessments are a ZERO-SUM calculation, a community's assessment is strongly influenced by the RELATIVE change in CY2011 to CY2013 flow share compared to CY2010 to CY2012 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]



Notes:

[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 CY2010 to CY2013 average wastewater flows as of 12/16/13. Flow data is preliminary and subject to change pending additional MWRA and community review.

[3] CY2010 to CY2012 wastewater flows based on actual meter data. CY2013 flows based on actual meter data for January to October and projected flows for November to December.

[4] Represents ONLY the impact on the total BASE assessment resulting from the changes in average and maximum wastewater FLOW SHARES.

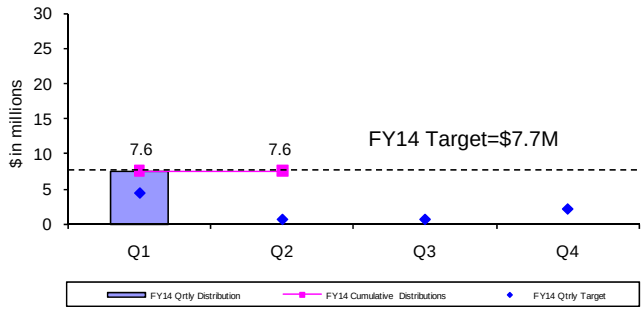
Flow Impacts
1/27/2014

Community Support Programs
2nd Quarter – FY14

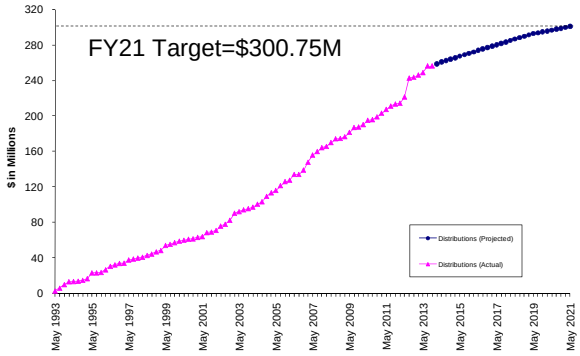
Infiltration/Inflow Local Financial Assistance Program

MWRA's Infiltration/Inflow (I/I) Local Financial Assistance Program provides $300.75 million in grants and interest-free loans (average of about $10 million per year from FY93 through FY21) 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. Interest-free loans are repaid to MWRA over a five-year period beginning one year after distribution of the funds.

FY14 Quarterly Distributions of Sewer Grant/Loans



I/I Local Financial Assistance Program Distribution FY93-FY21

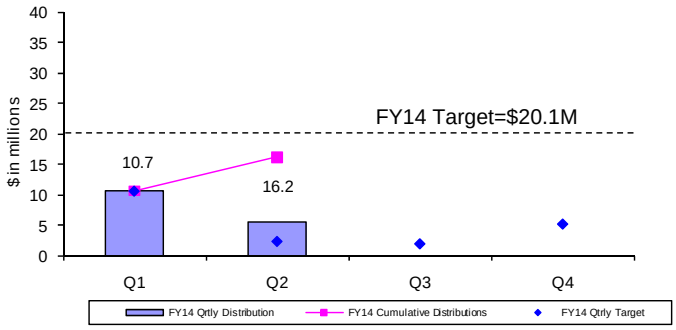


During the 2nd Quarter of FY14, $0.0 million in financial assistance (45% grants and 55% interest-free loans) was distributed to fund local sewer rehabilitation projects. Total grant/loan distribution for FY14 is $7.6 million. From FY93 through the 2nd Quarter of FY14, all 43 member sewer communities have participated in the program and more than $256 million has been distributed to fund 452 local I/I reduction and sewer system rehabilitation projects. Distribution of the remaining funds has been approved through FY21 and community loan repayments will be made through FY26. All scheduled community loan repayments have been made.

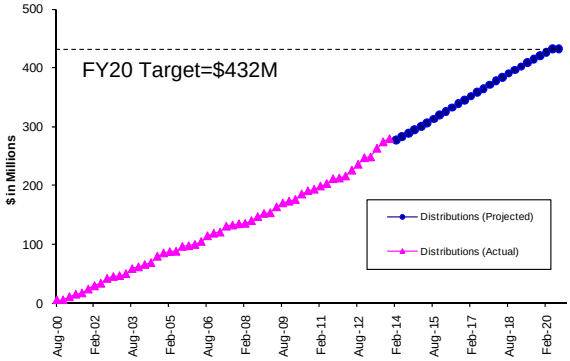
Water Local Pipeline and Water System Assistance Programs

MWRA's Local Pipeline and Water System Assistance Programs (LPAP and LWSAP) provide $432 million in interest-free loans (an average of about $22 million per year from FY01 through FY20) to member water communities to perform water main rehabilitation projects within their locally-owned water distribution systems. 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 - LPAP concluded in FY13 with $222 million in loan distributions. The Phase 2 - LWSAP continues through FY20.

FY14 Quarterly Distributions of Water Loans



Local Pipeline and Water System Assistance Programs Distribution FY01-FY20



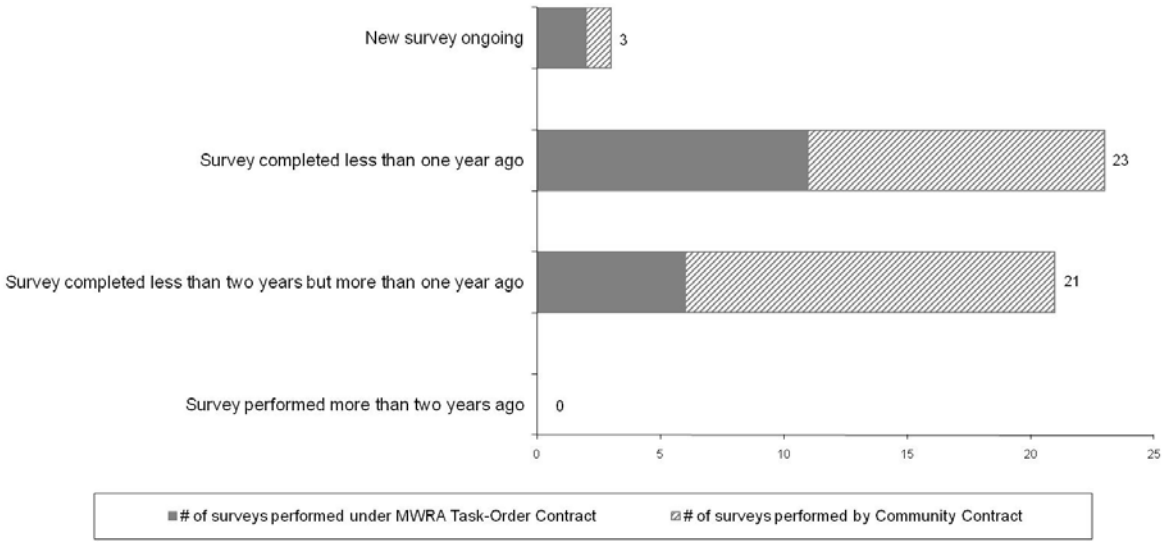
During the 2nd Quarter of FY14, $5.5 million in interest-free loans was distributed to fund local water projects in Boston and Quincy. Total loan distribution for FY14 is $16.2 million. From FY01 through the 1st Quarter of FY14, more than $278 million has been distributed to fund 316 local water system rehabilitation projects in 38 MWRA member water communities. Distribution of the remaining funds has been approved through FY20 and community loan repayments will be made through FY30. All scheduled community loan repayments have been made.

Community Support Programs

2nd Quarter – FY14

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 2nd Quarter of FY14, 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 210 mgd. The local Water Conservation Program includes distribution of water conservation education brochures (indoor and outdoor bill-stuffers) and low-flow water fixtures and related materials (shower heads, faucet aerators, toilet leak detection dye tabs, and instructions), 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.

FY14 DISTRIBUTION	Annual Target	Q1	Q2	Q3	Q4	Annual Total
Educational Brochures	100,000	55,816	24,172			79,988
Low-Flow Fixtures (showerheads and faucet aerators)	10,000	2,323	3,624			5,947
Toilet Leak Detection Dye Tablets	------	827	954			1,781

BUSINESS SERVICES

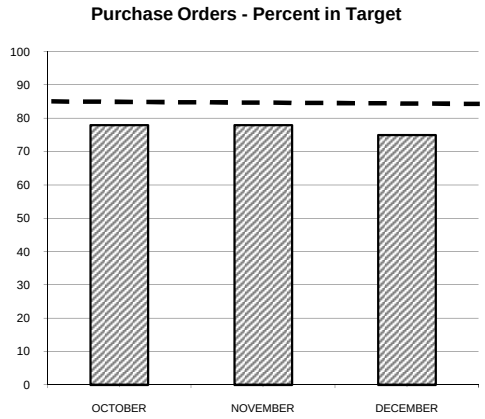
Procurement: Purchasing and Contracts

Second Quarter FY14

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

Outcome: Processed 77% of purchase orders within target; Average Processing Time was 7.94 days vs. 6.38 days in Qtr 2 of FY13. Processed 85% (17 of 20) contracts within target timeframes; Average Processing Time was 84 days vs. 148 days in Qtr 2 FY13.

Purchasing



	No.	TARGET	PERCENT IN TARGET
$0 - $500	1118	3 DAYS	74.2%
$500 - $2K	954	7 DAYS	84.6%
$2K - $5K	192	10 DAYS	55.2%
$5K - $10K	89	25 DAYS	78.6%
$10K - $25K	82	30 DAYS	71.9%
$25K - $50K	22	60 DAYS	63.6%
Over $50K	28	90 DAYS	67.8%

The Purchasing Unit processed 2485 purchase orders, 305 fewer than the 2790 processed in Qtr 2 of FY13 for a total value of $13,091,376 versus a dollar value of $20,250,332 in Qtr 2 FY13.

The purchase order processing target was not met for the $0-$500 due to vendor price confirmations, $2k - $5k due to inadequate specifications resulting in delays in vendor sourcing the $10k - $25k category due to vendor sourcing, sole source requirements and end user confirmation, the $25-$50k due to end user specification requirements and sole source requirements, and the $50K and over due to sole source clarification.

Contracts, Change Orders and Amendments

Three contracts were not processed within target timelines, one due to the expansion of a contract to include the work of an additional contract, another because of delays resulting from a rescheduled Board of Director's meeting and delay in the execution of the contract by the consultant, and a third because it was held pending issuance of a facility permit by DEP.

Procurement processed sixteen contracts with a value of $26,594,615 and seven amendments with a value of $2,255,648.

Twenty one change orders were executed during the period. The dollar value of all non-credit change orders during the 1st Quarter FY14 was $358,677 and the value of credit change orders was ($784,105).

Staff reviewed 44 proposed change orders and 30 draft change orders.

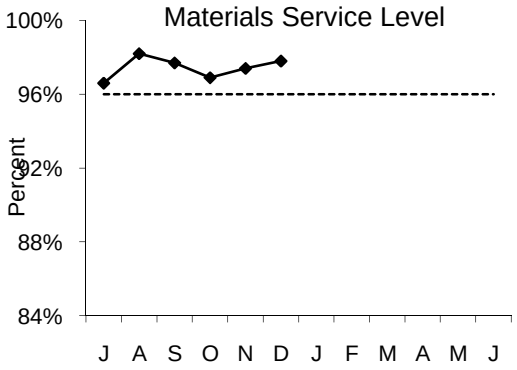
Procurement processed twenty contracts with a value of $46,911.010 and six amendment with a value of $340,510.

Twenty seven change orders were executed during the period. The dollar value of all non-credit change orders during the 2nd Quarter FY14 was $717,074 and the value of credit change orders was ($531,243).

Staff reviewed 33 proposed change orders and 61 draft change orders.

Materials Management

2nd Quarter, FY14



The service level is the percentage of stock requests filled. The goal is to maintain a service level of 96%. Staff issued 8,659 (97.3%) of the 8,895 items requested in Q2 from the inventory locations for a total dollar value of $1,504,525.

Inventory Value - All Sites

Inventory goals focus on:

- Maintaining optimum levels of consumables and spare parts inventory
- 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 FY14 goal is to reduce consumable inventory from the July '13 base level ($6.9 million) by 4.0% (approximately $276,182), to $6.6 million by June 30, 2014 (see chart below).

Items added to inventory this quarter include:

- Deer Island – VFD Mounting kit, temperature indicator, band saw blades, thermo coupler, signal isolator and VFDs for Core; Air hoses, gripper plugs and pressure transmitter for Residuals.
- Chelsea – plate frame, circuit breakers, trailer adapter, air filter, ABS sensor, front hub bearing, rotor bolts, pinch valves, radiator hose, brake calipers, snow plow motor and brake adjuster for VMM; ball valve, fuel pump, couplings, water heater, pinch valve, backflow preventer, muffin monster, rotork actuator, actuator and mechanical seal for Work Order Coordination Group.
- Southboro – gate box risers for Maintenance; wiper blades, air filters, oil filters, gaskets and radiator hoses for VMM.

Property Pass Program:

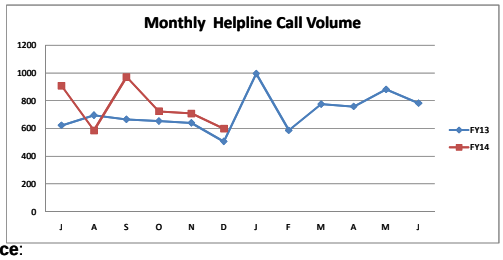
- Audits were conducted at Southboro, Norumbega, Barre, Nash Hill and Chelsea Mechanics/Maintenance tool bags during Q2.
- Numerous obsolete monitors, computers, printers, keyboards, mice, power supplies, laptops, and a television have been received into property pass as surplus. Disposition is being handled as part of our ongoing recycling efforts.
- Scrap revenue received to date for the quarter amounted to $51,616.
- Revenue received from online vehicle auction held during Q2 amounted to $23,159. Year to date revenue received amounts to $79,936.

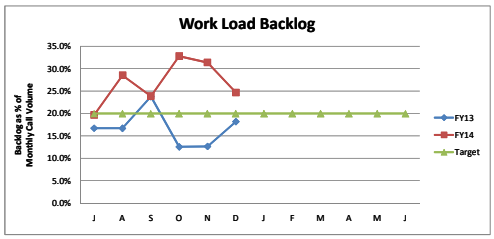
Items	Base Value July-13	Current Value w/o Cumulative New Adds	Reduction / Increase To Base
Consumable Inventory Value	6,954,017	6,880,896	-73,121
Spare Parts Inventory Value	7,358,692	7,196,906	-161,786
Total Inventory Value	14,312,709	14,077,802	-234,907

Note: New adds are items added at an inventory location for the first time for the purpose of servicing a group/department to meet their business needs/objectives.

MIS Program

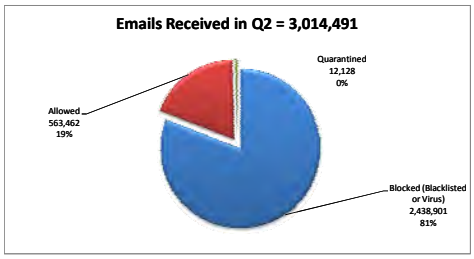
2nd Quarter FY14

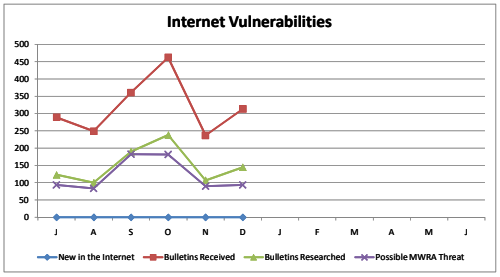




Performance:

Call Volume: Peaked in October and increased by 18.8% from Q2 last year. Call Backlog: Peaked in October and was 12.8% above the targeted benchmark of 20%. As of the end of December the Call Backlog is 4% above the target.





Information Security:

During Q2, staff pushed security fixes and updates to desktops and servers throughout the quarter in order to protect against 69 vulnerabilities.

LANDesk Antivirus quarantined 8 distinct viruses from 9 MWRA computers. MWRA's systems are current with anti-virus providers' signatures for all known malware.

Infrastructure:

Data Network Connectivity: Western Operations has completed installation of approximately 1000 feet of conduit from the street to the Southborough facility. An order was placed with Verizon to run fiber optic cable through the conduit allowing Verizon to provide a high speed data network connection and redundancy to the Southborough facility in case of an MIS data network failure.

Applications/Training/Records Center:

Strategic Sourcing and Contract Management: Staff and users continued to work several staggered weeks with a dedicated Infor/Lawson Consultant. Activities included work on test logs and scripts, addendum documents, change order processing options, and data mapping and migration for the Contract Card report and AP and Affirmative Action reporting requirements. Data migration from the old contracts and MBE/WBE systems to the new system continues. Data migration must be done in multiple passes increasing the export and import data set with each pass due to the data structure contract attributes (closed and open contacts with or without addendums, change orders retain age, etc.). Users have begun to compare the data in the new system against the old system. Staff also tested and published seven vendor-provided crystal reports after configuring for our environment. Continued testing and working on the custom Contract Card report. Completed the development of a bid tabulation report for general bids; it is currently being reviewed internally. Two additional customized bid tabulation reports have been started. One shows the sub contractor bids on an event and the other shows the bidding non-construction and events.

iPad Rollout (Fall 2013) Project: The goal of this project is to deploy 18 iPads to targeted MWRA staff who can evaluate the devices for application use opportunities within their functional areas. Updated and verified rollout instructions and posted all documentation related to iPads on a share that is accessible by all Desktop Support Staff and trained desktop staff on the rollout. Service procedures, data backup, and wiping of the devices for lost/stolen devices are being documented for publication and distribution.

Tiscor InspectNTrack: InspectNTrack is a web-based application that allows user access from any MWRA-networked PC. The application lets users manage and report on facility inspections. Scanners communicate with InspectNTrack within the MWRA network either by docking to a PC or via a Wi-Fi connection. This project consolidated four departmental, stand-alone Inspection Manager databases into a single, server-based InspectNTrack database. A total of 52 operators from different shifts were trained on how to use the scanner to collect data on new inspection routes. Headworks and Deer Island are performing acceptance testing on the development system

Infor/Lawson Calendar Year End Support: Supported HR and Payroll with numerous calendar year end tasks related to tax changes, insurance reporting, W2 and 1099 forms, 2014 holiday calendar etc.

Water Quality Reporting System: Created the production environment for the Aquarius application. This application is part of a Water Quality initiative to create a QC, QA system that properly manages water quality data. The repository will be used for DEP reporting and is a key component of the current CT Calculators being developed by the Riverside Consulting group.

Veeder Root: Upgraded the production system to version 4.3. The upgrade was needed to solve an issue with alerts being sent for old alarms. This upgrade appears to have corrected this problem.

WWQ: Upgraded the production data warehouses for WWQ and OMS to reflect new column sizes for the LabWare LIMS 6 upgrade.

PIMS: Assisted TRAC with generating annual fees for permit renewals. Updated the limit comparison screen to show additional pollutants submitted by industries.

Library & Records Center: The Library completed 33 research requests (65 YTD), added 34 books (101 YTD) and 171 ENQUAD Reports (457 YTD), distributed 98 periodicals (176 YTD) and 1,659 electronically linked articles to staff (3,793). The Records Center added 145 boxes (477 YTD), conducted 4 training sessions, and attended 3 Records Conservation Board Meetings.

IT Training: For the quarter, 178 staff attended 11 classes and 11 workshops. 17% of the workforce has attended at least one class year-to-date. TISCOR InspectNTrack training classes were offered. Delivered a SMART Board demo. Searching Windows 7, Windows XP, and Outlook job aids for LAW completed. Lawson Time Entry and Timesheet Approval training classes were offered. Added SMART Board job aids on the MIS How-to page on Pipeline. Active & Vital Records training classes were offered. Emergency Notification Systems demos were offered. Making Calls To and From a Satellite Phone and Making Phone Satellite Calls From a Mitel PBX Phone job aids completed and posted in the EOCs.

Legal Matters
2nd Quarter FY 2014

PROJECT ASSISTANCE

COURT AND ADMINISTRATIVE ORDER

- **Boston Harbor Litigation and CSO**: Reviewed and filed Compliance and Progress Report with Federal District Court. Submitted annual summary regarding the sewage pumpout boat supplemental environmental project to the United States in accordance with the September 8, 2008 Stipulation and Order in the Boston Harbor case. Submitted annual report to EPA and DEP providing updated information on the landfill sites that NEFCO identified as acceptable landfill sites for use as part of its emergency residuals disposal back up plan in accordance with the September 28, 2005 Order in the Boston Harbor case issued pursuant MWRA's Motion to Vacate the Second Long-Term Residuals Management Scheduling Order.

- **NPDES**: Provided final comments on the NPDES Permit for Clinton wastewater treatment plant.

- **Administrative Consent Order (DITP power outages)**: Reviewed and submitted updated semi-annual C*onsultant's Deer Island Energy Recommendations Tracking Sheet* to DEP and EPA.

REAL ESTATE, CONTRACT AND OTHER SUPPORT

- **Loring Road:** Executed new Interconnection Services Agreement and Power Purchase Agreement with NSTAR for the Loring Road facility.

- **Chelsea Water Main:** Drafted a transfer of ownership document to transfer ownership of an abandoned 24-inch water main to the City of Chelsea.

- **Fore River Railroad:** Drafted a seventh Indenture of Lease to remove the property to be conveyed to March Fourth LLC as part of the easement swap.

- **John J. Carroll Water Treatment Plant:** Finalized an Interconnection Services Agreement with NGRID for the photovoltaic array at JJCWTP.

- **Watershed Protection Act Acquisitions**: Reviewed and provided comments as to documentation for the following parcels: W-1096 in Holden, a fee interest on property of Carlson; and W-1097 in Petersham, a WPR on property of Anderson.

- **Ware:** Drafted a Grant of Easement from DCAM/DCR to MWRA for the Ware facility pursuant to Chapter 113, Acts of 2013.

- **Fore River:** Drafted a berthing agreement template for berthing of vessels at the Fore River Facility pier.

- **Wachusett Aqueduct Pumping Station:** Coordinated the drafting of a cost recovery agreement among MWRA, DCR and NGRID in support of NGRID's future relocation of a power pole and 69 kV power line encroaching upon the intended location of the to-be-constructed pump station.

- **Public Access Permits:** Finalized five (5) Public Access Permits for Southborough, Framingham and Natick.
- **Construction Contract:** Provided a review and recommendation on three (3) claims.
- **Deer Island:** Drafted a License with V^2 allowing V^2 to test a prototype modular wind energy system for potential use by the U.S. Army on Deer Island.
- **Cross Harbor Cable:** Met with representatives of NSTAR for an initial meeting to discuss the options for extending the Interconnection Services Agreement for NSTAR, through its subsidiary HEEC to provide power to Deer Island Treatment Plant.

MISCELLANEOUS

- Reviewed and approved twenty (20) Section 8(m) Permits and one (1) Direct Connect Permit.

LABOR, EMPLOYMENT AND ADMINISTRATIVE

New Matters

Four demands for arbitration were filed.

A Charge was filed at the Massachusetts Commission Against Discrimination alleging that the MWRA discriminated against an employee on the basis of disability and retaliation.

LABOR, EMPLOYMENT AND ADMINISTRATIVE (cont.)

Matters Concluded

Received an arbitrator's decision upholding two days of a five day suspension of an employee, while reversing three days of the suspension.

Received an arbitrator's decision in favor of MWRA finding that the MWRA did not violate Article 15 of a collective bargaining agreement when it did not assign overtime to an employee.

Received an arbitrator's decision in favor of MWRA finding that the assignment of employees is a management right that may not be addressed by an arbitrator.

Settled State Division of Labor Relations cross complaint regarding a step placement agreement.

LITIGATION / TRAC

New Matters

During the Second Quarter of FY 2014, one new lawsuit was received.

Daniel O'Connell's Sons, Inc. v. MWRA: This action arises out of MWRA Contract No. 6899, Primary and Secondary Clarifier Rehabilitation, Deer Island Treatment Plant, under which plaintiff Daniel O'Connell's Sons, Inc. rehabilitated 102 primary and secondary clarifiers at DITP. Plaintiff seeks money damages for the additional costs associated with making modifications to the head shaft driven sprockets ("bull sprockets") in the primary and secondary clarifiers at DITP.

Significant Developments

(Former Employee) v. MWRA: On October 8, 2013 the MWRA filed an application against plaintiff for not responding to discovery requests. On October 10, 2013, Final Judgment was entered in favor of MWRA with costs. Plaintiff still has time to attempt to vacate Judgment.

MWRA v. J.F. Shea, et al.: In October, the Superior Court granted in part and denied in part a motion brought by MWRA to compel the production of documents which the defendant Victaulic Company refused to produce under a claim of work product privilege. Victaulic was ordered to produce its Weston break site photographs toward the end of discovery despite a ruling that they did in fact constitute work product. On November 6, at the conclusion of the second day of the deposition of Victaulic's witness, all defendants proposed a resumption of settlement negotiations (amongst themselves) and the postponement of up to ten additional deposition dates. All noticed depositions were rescheduled for the period January – March 2013 in anticipation of a successful mediation among all parties by year end. Mediation efforts led to a settlement in principle to settle MWRA's claims by a payment to MWRA of $3.1 million which was approved by the Board.

Matters Concluded

Three cases closed during the Second Quarter FY 2014.

Seaver Electric Inc. v. J.F. White Contracting Co., et al.: This was a construction contract claim. Plaintiff was the electrical subcontractor on the Braintree/Weymouth Intermediate Pumping Station Project. Plaintiff sought damages for being ordered to perform work which it alleged was beyond the scope of the applicable specifications under its subcontract with general contractor J.F. White Contracting. Plaintiff alleged $565,670.36 in contract damages, the loss of which Seaver alleged caused it to lose bonding capacity and ultimately to go out of business. Seaver had estimated the "lost business" damages at $5,000,000. Following completion of discovery, all parties filed motions for summary judgment. Suffolk Superior Court Judge Peter Lauriat allowed the defendants' motions for summary judgment as to all of the claims by plaintiff in the case. On April 24, 2012, the Superior Court entered a separate and final judgment dismissing all of plaintiff's claims. On May 16, 2012, plaintiff filed a Notice of Appeal based upon the separate and final judgment. Following submission of briefs, oral argument was heard on June 18, 2013. On August 5, 2013, the Appeals Court issued an opinion affirming the dismissal of plaintiff's complaint. Plaintiff thereafter filed an Application for Further Appellate Review with the Supreme Judicial Court, which request was denied on October 3, 2013.

K&R Construction Company LLC v. MWRA: K&R was the landscaping contractor for MWRA on Contract OP-170, Section 22 Pipeline Easement Clearing (Quincy, Mass.). K&R alleged that MWRA's Contract documents underestimated the actual square footage of the work area, as well as the amount of material required to loam and seed the work area. K&R sued MWRA, seeking to recover K&R's costs incurred for extra work and materials. K&R initiated settlement discussions, and indicated that it was looking to recover its out of pocket additional expenses. The parties ultimately reached a negotiated settlement. The parties filed a stipulation of dismissal as to the litigation on October 25, 2013, and on October 29, the court entered a judgment of dismissal.

LITIGATION / TRAC (cont.)

Nagy Mikael v. MWRA: The plaintiff in this case was one of a group of homeowners that MWRA had arranged to take off their private wells and placed on municipal water supplies, for the duration of the construction of the MetroWest Water Supply Tunnel. MWRA had made this arrangement in an MOA with the Town of Weston. The plaintiff alleged that MWRA breached its obligation under the MOA with Weston to provide him with a replacement to his private well after it proved impossible to restore. Plaintiff demanded a new well drilled to deep bedrock, which MWRA rejected, because its original commitment was only to restore plaintiff's shallow well. MWRA settled this action for $10,000, based on MWRA's estimated cost of a shallow well.

Subpoenas During the Second Quarter of FY 2014, no new subpoenas were received, and one subpoena was pending at the end of the Second Quarter FY 2014.

Public Records During the Second Quarter of FY 2014 seven new public records requests were received and four public records requests were closed.

SUMMARY OF PENDING LITIGATION MATTERS

TYPE OF CASE/MATTER	As of Dec 2013	As of Sept 2013	As of June 2013
Construction/Contract/Bid Protest (other than BHP)	5	6	6
Tort/Labor/Employment	6	7	6
Environmental/Regulatory/Other	1	1	1
Eminent Domain/Real Estate	0	0	0
total – all defensive cases	**12**	**14**	**13**
Affirmative Cases: MWRA v. J. F. Shea Co., Inc., et al.	1	1	1
Other Litigation matters (restraining orders, etc.) MWRA v. Thomas Mercer	1	1	1
total – all pending lawsuits	**14**	**16**	**15**
Significant claims not in suit:	0	0	1
Bankruptcy	1	0	0
Wage Garnishment	15	14	14
TRAC/Adjudicatory Appeals	4	5	15
Subpoenas	1	3	3
TOTAL – ALL LITIGATION MATTERS	35	38	48

TRAC/MISC.

New Appeals There were no new TRAC appeals received in the 2nd Quarter FY 2014.

Settlement by Agreement of Parties No cases were settled by Agreement of Parties in the 2nd Quarter FY 2014.

Stipulation of Dismissal No cases were dismissed by Stipulation of Dismissal, fine waived.

Notice of Dismissal Fine paid in full No cases were dismissed by Joint Stipulation of Dismissal with Prejudice, fine paid in full.

Tentative Decisions No Tentative Decisions were issued in the 2nd Quarter FY 2014.

Final Decisions No Final Decisions were issued during the 2nd Quarter FY 2014.

Internal & Contract Audit Program
2nd Quarter FY14

Highlights

Fleet Services Follow-Up Review Staff issued a final report on its review of the corrective actions initiated by Fleet Services in response to a January, 2012 audit report. Substantial progress has been made in utilizing Maximo to automatically generate preventative maintenance work orders. Fleet Services is now including work order numbers and vehicle plate numbers on most non-stock documentation and capturing actual hours spent by staff to complete a work order. Open recommendations are primarily focused on addressing the Lawson/Maximo interface and adhering to the manufacturers' recommended maintenance schedules.

Status of Open Audit Recommendations (12 recommendations closed in the 2nd quarter)

The Internal Audit Department follows up on open recommendations on a continuous basis. All pending recommendations have target implementation dates. When a recommendation has not been acted on in 48 months the appropriateness of the recommendation is re-evaluated during a subsequent audit. On closed assignments 98% of recommendations have been implemented.

Report Title (date)	Recommendations Pending Implementation	Closed Recommendations
Warehouse Practices (9/30/10)	1	9
Facility Card Access Controls (2/22/11)	3	17
DITP Data Center Access Controls (10/14/11)	2	20
Chelsea Facility Physical Security (12/31/12)	9	22
Hardware Equipment Management (5/22/13)	19	17
Review of Purchase Card Activity (6/28/13)	1	2
Bay State Fertilizer (9/3/13)	4	1
Follow-up Report on Fleet Services Activities (12/31/13)	6	11
Total Recommendations	**45**	**99**

Audit Savings

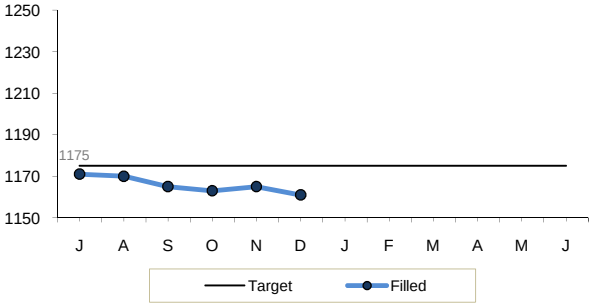
The Internal Audit Department's target is to achieve at least $1 million in cost savings each year. Cost savings vary each year based upon many factors. In some cases, cost savings for one year may be the result of work in prior years.

Savings	FY10	FY11	FY12	FY13	FY14 (2Q)	TOTAL
Consultants	$194,238	$520,176	$259,245	$587,314	$45,043	$1,606,016
Contractors & Vendors	$599,835	$3,129,538	$435,760	$2,153,688	$184,214	$6,503,035
Internal Audits	$206,282	$152,478	$407,350	$391,083	$93,971	$1,251,164
Total	**$1,000,355**	**$3,802,192**	**$1,102,355**	**$3,132,085**	**$323,228**	**$9,360,215**

OTHER MANAGEMENT

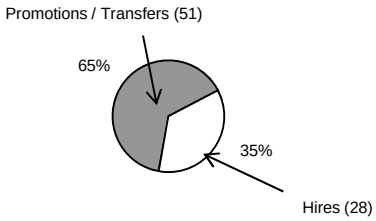
Workforce Management
2nd Quarter FY14

Filled Position Tracking



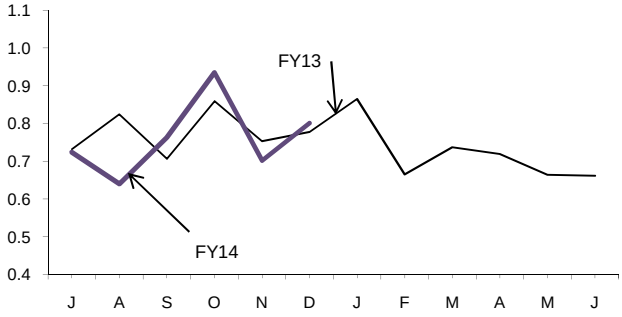
FY14 Target for Filled Positions = 1175
Filled Positions as of December 2013 = 1161

Positions Filled by Hires/Promotions
FY14-YTD



	Pr/Trns	Hires	Total	
FY11	48 (62%)	30 (38%)	78	
FY12	42 (61%)	27 (39%)	69	
FY13	82 (64%)	47 (36%)	129	
FY14	51 (65%)	28 (35%)	79	(To Date)

Average Monthly Sick Leave Usage
Per Employee



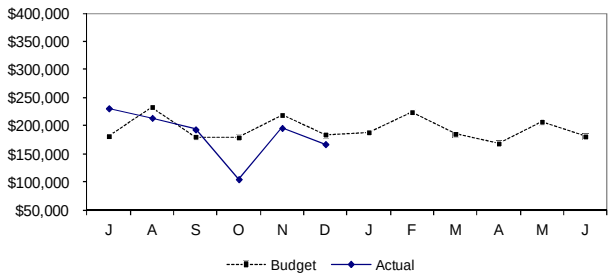
Average monthly sick leave for the 2nd Quarter of FY14 increased as compared to the 1st Quarter (8.51 to 9.13 days).

In Q2 of FY14, the average quarterly sick leave usage has decreased 1.97% from the same time last year.

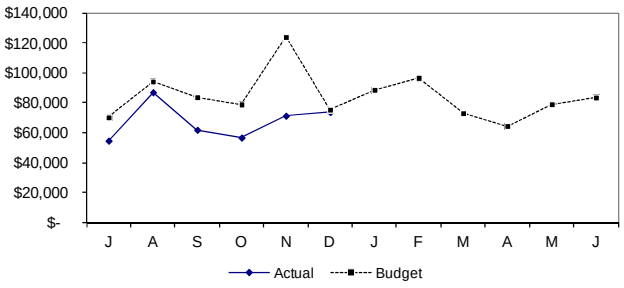
	Number of Employees	YTD	Annualized Total	Annual FMLA %	FY13
A&F	182	5.12	10.24	45.1%	8.48
Aff. Action	7	4.90	9.80	0.0%	12.25
Executive	5	2.99	5.97	0.0%	3.08
Int. Audit	8	3.88	7.76	0.0%	7.36
Law	16	5.08	10.16	19.5%	11.80
OEP	5	13.79	28.12	65.9%	5.89
Operations	939	4.39	8.79	20.0%	9.02
Pub. Affs.	12	5.76	11.52	38.7%	9.08
MWRA Avg	**1174**	**4.57**	**9.13**	**24.8%**	**8.95**

Percent of sick leave usage attributable to Family and Medical Leave Act (FMLA) leave is 24.8% for the 2nd Quarter of FY14.

Field Operations
Current Month Overtime $



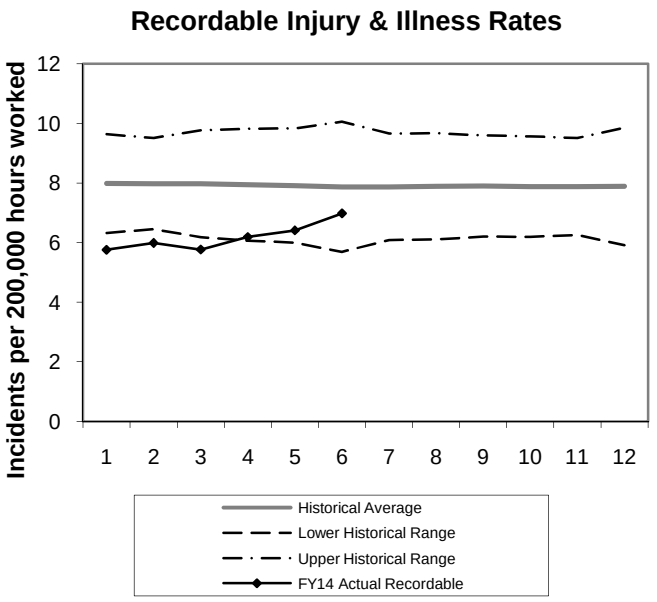
Deer Island Treatment Plant
Current Month Overtime $

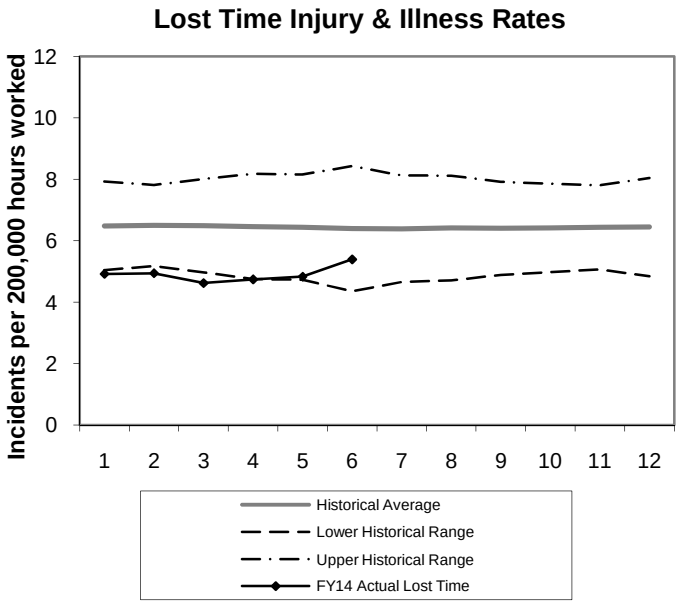


Total Overtime for **Field Operations** for the second quarter of FY14 was $469,226 which is ($114k) under budget. Emergency overtime was $167k, which was ($126k) under budget, due mainly to the lack of rain events. Spending for rain events, totaled $85k, $43k was for snow removal, $32k was for emergency maintenance. Coverage overtime was $121k, which was ($24k) under budget, due mainly to lower than budgeted shift coverage requirements Planned overtime was $182k or $36k over budget, mainly for planned operations at $49k, half plant operations at Carroll at $36k, and maintenance off hours work at $19k.

Deer Island's total overtime expenditure for the second quarter of FY14 was $202K, which was ($77K) or (27.5%) under budget. The variance reflects less than anticipated storm coverage requirement, (1,643 hours or $84K), along with Management's continued efforts to control overtime spending by allowing overtime for maintenance or repair of critical systems and equipment only, ($30K). These items are partially offset by higher than anticipated shift coverage overtime due to a 3rd Class Engineer FMLA in Thermal, 650 hours or $37K.

Workplace Safety
Second Quarter FY 14





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.

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.

3 The “Historical Average” is computed using the actual MWRA monthly incident rates for FY99 through FY13. The “Upper” and “Lower Historical Ranges” are computed using these same data – adding and subtracting two standard deviations respectively. FY14 actual incident rates can be expected to fall within this historical range.

Workers Compensation Claims Highlights - Second Quarter FY14

	New	Closed	Open Claims
Lost Time	11	17	62
Medical Only	19	25	28
Report Only	19	21	
	New		**YTD Light Duty Returns**
Light Duty Returns	4		6

Highlights/Comments:

Light Duty Returns

Oct 1 employee returned to work light duty from IA

Nov 2 employees returned to work light duty from IA, after two weeks, one went to full duty

Dec 1 employee returned to work light duty from IA

Regular Duty Returns

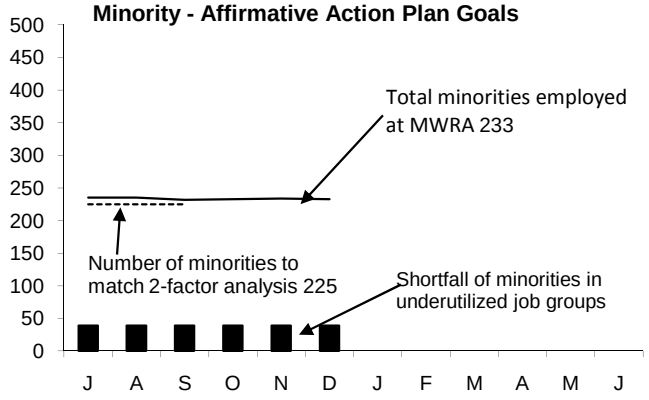
Oct 1 employee returned to work full duty from IA

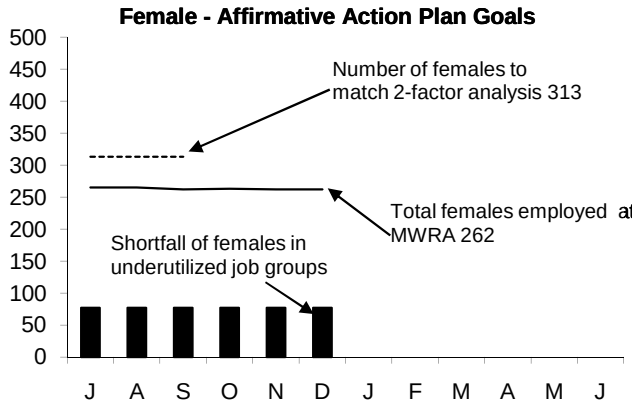
Nov 1 employee returned to work full duty from light duty (noted above)

Dec 1 employee returned to work full duty from IA

MWRA Job Group Representation

2nd. Quarter, FY14





Highlights:

At the end of Q2 FY14, 9 job groups or a total of 39 positions are underutilized by minorities as compared to 10 job groups or a total of 39 positions at the end of Q2 FY13; for females 14 job groups or a total of 77 positions are underutilized by females as compared to 14 job groups or a total of 101 positions at the end of Q2 FY13. During Q2, 4 minorities and 2 females were hired. During this same period, 1 minority and 3 females terminated.

Underutilized Job Groups - Workforce Representation

Job Group	Employees as of 12/31/2013	Minorities as of 12/31/2013	Achievement Level	Minority Over or Under Under utilized	Females As of 10/31/2013	Achievement Level	Female Over or Under Under utilized
Administrator A	18	3	2	1	3	5	-2
Administrator B	20	0	3	-3	4	5	-1
Clerical A	45	18	12	6	39	20	19
Clerical B	32	8	9	-1	11	1	10
Engineer A	81	14	19	-5	12	17	-5
Engineer B	50	13	10	3	6	12	-6
Craft A	112	12	20	-8	0	4	-4
Craft B	153	32	23	9	3	7	-4
Laborer	65	22	10	12	3	4	-1
Management A	104	14	21	-7	34	47	-13
Management B	50	11	12	-1	14	21	-7
Operator A	68	5	7	-2	2	4	-2
Operator B	67	6	14	-8	4	2	2
Para Professional	52	12	11	1	23	32	-9
Professional A	35	3	6	-3	22	16	6
Professional B	165	44	41	3	77	89	-12
Technical A	51	15	7	8	5	8	-3
Technical B	6	1	1	0	0	2	-2
Total	**1174**	**233**	**228**	**36/-39**	**262**	**296**	**41/-77**

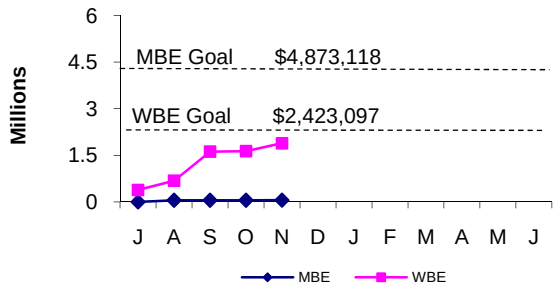
AACU Candidate Referrals for Underutilized Positions

Job Group	Title	# of Vac	Requisition Int. / Ext.	Promotions/ Transfers	AACU Ref. External	Position Status
Craft B	Plumber/Pipefitter	2	Int/Ext	0	1	NH = (2) WM
Craft B	Warehouse Materials Handler	2	Int	2	0	T = WM & WF
Craft B	Metal Fabricator/Welder	2	Int/Ext	0	0	NH = (2) WM
Craft B	Instrument Technician	1	Int/Ext	1	1	Promo = WM
Craft A	Executive Secretary	1	Int/Ext	1	0	Promo = WF
Craft A	M&O Specialist	1	Int	1	0	Promo = WM
Engineer A	Senior Program Manager	1	Int	1	0	Promo = WM
Engineer B	Junior Civil Engineer	1	Ext	1	0	Demotion = WM
Laborers	Building & Grounds Worker	2	Ext	0	0	NH = BM, WM
Laborers	Skilled Laborer	1	Ext	0	0	NH = HM
Management A	Senior Program Manager, NPDES	1	Int	1	0	Promo = WF
Management B	Asset Control Supervisor	1	Int	1	0	Promo = WM
Management B	Trans Courier Supervisor	1	Int	0	0	In Progress
Management B	Shift Operations Manager	1	Int	1	0	Promo = WM
Operator B	Operator	2	Ext	2	1	Promo = (2) WM
Operator A	Area Supervisor	1	Int	1	0	Promo = WM
Professional B	Senior Laboratory Technician	3	Int/Ext	1	1	T=WM,NH=WF& BF
Professional B	Chemist II	1	Int	1	0	Promo = WF
Professional B	Chemist I	1	Int/Ext	1	1	Promo = AF

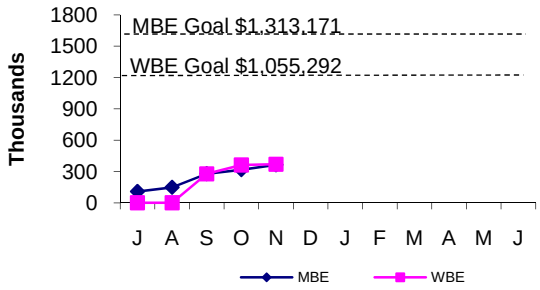
MBE/WBE Expenditures
2nd Quarter, FY14

Background: MBE/WBE targets are determined based on annual MWRA expenditure forecasts in the procurement categories noted below. MBE/WBE percentage goals, resulting from a 2002 Availability Analysis, are applied to the MWRA CIP and CEB expenditure forecasts. As a result of the Availability Analysis, the category of Non-Professional Services is included in Goods/Services. Consistent with contractor reporting requirements, MBE/WBE expenditure data is available through November.

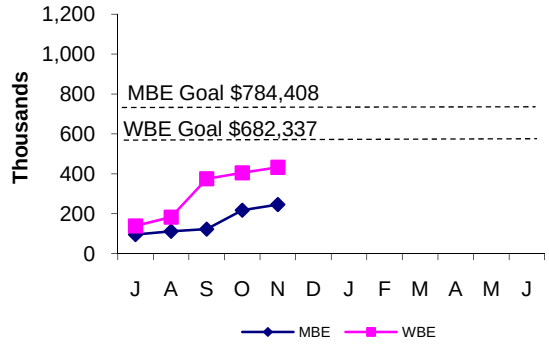
Construction



Professional



Goods/Services



FY14 spending and percentage of goals achieved, as well as FY13 performance are as follows:

	MBE				WBE			
	FY14 Year-to-Date		FY13		FY14 Year-to-Date		FY13	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
Construction	56,206	1.2%	5,364,613	121.7%	1,887,403	77.9%	4,522,050	206.4%
Professional Svc.	363,643	27.7%	1,477,040	134.3%	369,599	35.0%	557,922	63.1%
Goods & Svcs.	245,987	31.4%	1,128,359	378.4%	432,388	63.4%	578,379	223.0%
Total	665,836	9.6%	$7,970,012	137.3%	2,689,390	64.6%	$5,658,351	169.7%

MBE/WBE dollar totals include MBE and WBE payments to prime contractors, consultants and vendors.

CEB Expenses through
2nd Quarter FY14

	December 2013 Year-to-Date ($000)					
	Budget	Actual	Variance	%	FY14 Budet	%
EXPENSES						
WAGES AND SALARIES	$ 45,743	$ 44,282	$ (1,460)	-3.2%	$ 94,874	46.7%
OVERTIME	1,815	1,620	(196)	-10.8%	3,580	45.2%
FRINGE BENEFITS	8,978	9,005	27	0.3%	18,064	49.8%
WORKERS' COMPENSATION	1,000	1,770	770	77.0%	2,000	88.5%
CHEMICALS	5,589	5,572	(18)	-0.3%	10,671	52.2%
ENERGY AND UTILITIES	10,223	10,419	196	1.9%	22,761	45.8%
MAINTENANCE	12,712	13,226	513	4.0%	27,762	47.6%
TRAINING AND MEETINGS	129	152	24	18.4%	331	46.1%
PROFESSIONAL SERVICES	2,423	2,459	36	1.5%	6,083	40.4%
OTHER MATERIALS	1,764	1,924	160	9.0%	5,969	32.2%
OTHER SERVICES	11,300	11,203	(97)	-0.9%	22,279	50.3%
TOTAL DIRECT EXPENSES	**$ 101,676**	**$ 101,631**	**$ (46)**	**0.0%**	**$ 214,374**	**47.4%**
INSURANCE	$ 1,047	$ 853	$ (194)	-18.5%	$ 2,094	40.8%
WATERSHED/PILOT	13,607	13,612	4	0.0%	27,215	50.0%
BECo PAYMENT	1,680	1,676	(4)	-0.2%	3,347	50.1%
MITIGATION	783	773	(11)	-1.4%	1,567	49.3%
ADDITIONS TO RESERVES	85	85	-	0.0%	169	50.0%
RETIREMENT FUND	12,432	12,447	16	0.1%	12,432	100.1%
TOTAL INDIRECT EXPENSES	**$ 29,634**	**$ 29,446**	**$ (188)**	**-0.6%**	**$ 46,823**	**62.9%**
STATE REVOLVING FUND	$ 36,128	$ 36,128	$ -	0.0%	$ 75,961	47.6%
SENIOR DEBT	101,669	101,669	-	0.0%	204,471	49.7%
DEBT SERVICE ASSISTANCE	-	-	-	---	132	0.0%
CURRENT REVENUE/CAPITAL	4,600	4,600	-	0.0%	9,200	50.0%
SUBORDINATE MWRA DEBT	49,918	49,918	-	0.0%	100,117	49.9%
LOCAL WATER PIPELINE CP	2,064	2,064	-	0.0%	4,128	50.0%
CAPITAL LEASE	1,609	1,609	-	0.0%	3,217	50.0%
VARIABLE DEBT	-	(6,402)	(6,402)	---	-	0.0%
DEFEASANCE ACCOUNT	-	6,402	6,402	---	-	0.0%
TOTAL DEBT SERVICE	**$ 195,987**	**$ 195,987**	**$ -**	**0.0%**	**$ 397,226**	**49.3%**
TOTAL EXPENSES	**$ 327,298**	**$ 327,064**	**$ (234)**	**-0.1%**	**$ 658,423**	**49.7%**
REVENUE & INCOME						
RATE REVENUE	$ 314,361	$ 314,361	$ -	0.0%	$ 628,721	50.0%
OTHER USER CHARGES	3,793	3,753	(39)	-1.0%	8,127	46.2%
OTHER REVENUE	4,210	5,014	804	19.1%	6,444	77.8%
RATE STABILIZATION	1,750	1,750	-	0.0%	3,500	50.0%
INVESTMENT INCOME	6,314	6,118	(195)	-3.1%	11,631	52.6%
TOTAL REVENUE & INCOME	**$ 330,427**	**$ 330,996**	**$ 569**	**0.2%**	**$ 658,423**	**50.3%**

As of December 2013, total revenue was $331.0 million, $569,000 or 0.2% higher than budget and total expenses were $327.1 million, $234,000 or 0.1% less than budget for a net variance of $803,000.

Expenses –

- **Direct Expenses** are $101.6 million, $46,000 less than budget.
- **Wages and Salaries** are underspent by $1.5 million or 3.2% due to lower headcount and mix of salaries for people retiring and new hires offset by higher than budgeted use of accrued leave time.
- **Workers Compensation** expenses are higher than budget by $770,000 or 77.0%. To date, medical expenses are $511,000 higher than budget.
- **Maintenance** is overspent by $513,000 or 4.0% year-to-date. Material purchases are overspent by $1.2 million and services are underspent by $637,000 mainly due to timing related for FY13 projects completed in FY14.
- **Utilities** are over budget by $196,000 or 1.9% primarily due to the timing of a diesel fuel purchase of $542,000 at Deer Island budgeted in March, purchased in November offset by lower electricity of $247,000, water of $55,000, and natural gas of $46,000.
- **Overtime** is underspent by $196,000 or 10.8% at both Deer Island and Field Operations due to lower than budgeted wet weather events.
- **Other Materials** are over budget by $160,000 or 9.0% mainly due to unbudgeted purchase of gas detection equipment and the timing of work clothes, vehicle purchases, and postage.
- **Other Services** are underspent by $97,000 or 0.9% year-to-date. The majority of the variance is due to lower than budgeted sludge quantities of $242,000 and Grit & Screenings Removal of $42,000, offset by higher spending for space/lease rentals of $53,000, permit fees of $47,000, and police details of $46,000.
- **Indirect Expenses** are $29.4 million, $188,000 or 0.6% under budget mainly due to lower insurance expenses of $194,000, mostly related to claims.
- **Debt Service Expenses** totaled $196.0 million which is at budgeted level after the transfer of $6.4 million of a favorable year-to-date variance to the Defeasance Account.

Revenue and Income –

- **Total Revenue / Income** for December is $331.0 million, $569,000 or 0.2% higher than budget due to higher Non-Rate Revenue of $765,000 offset by lower Investment Income of $195,000 due to lower than budgeted long-term rates. The higher Non-Rate Revenue is mainly due to $186,000 for the sale of unbudgeted emergency water for the Town of Hudson, $165,000 for the sale of surplus equipment, $108,000 for higher energy revenue due to higher Demand Response and Renewable Portfolio Standard (RPS) sales, timing of Fore River Railroad and Rutland Holden reimbursement of $53,000 and $24,000 respectively, and approximately $268,000 for a variety of vendor rebates and other smaller items.

Cost of Debt
2nd Quarter, FY14

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.

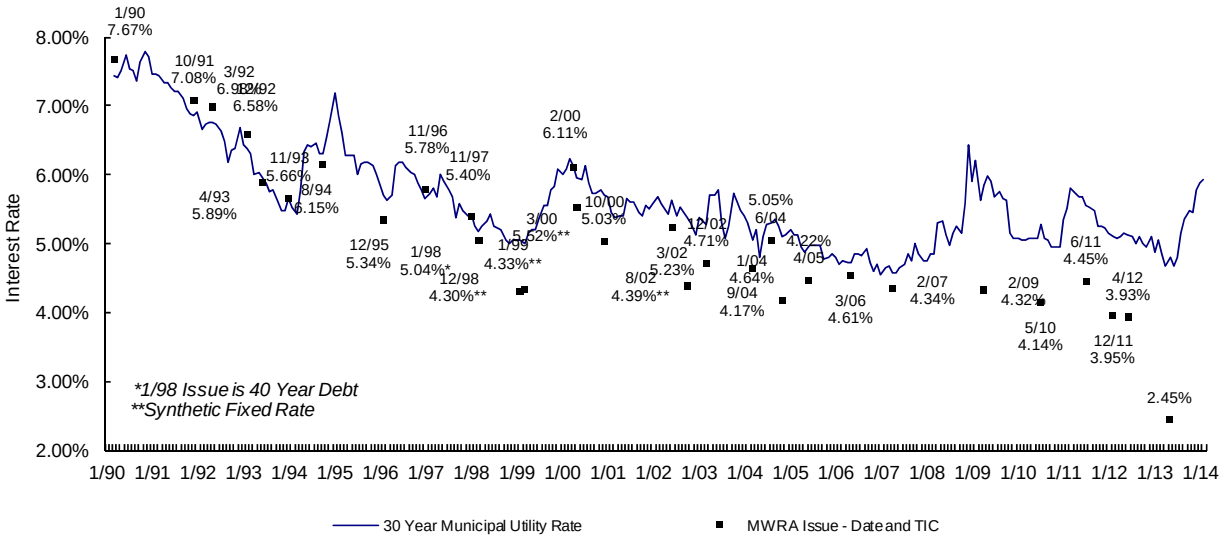
Average Cost of MWRA Debt

Fixed Debt ($4,040)	4.34%
Variable Debt ($484.3)	0.71%
SRF Debt ($1,023)	1.22%
Weighted Average Debt Cost ($5,556)	3.44%

Most Recent Senior Fixed Debt Issue
March 2013

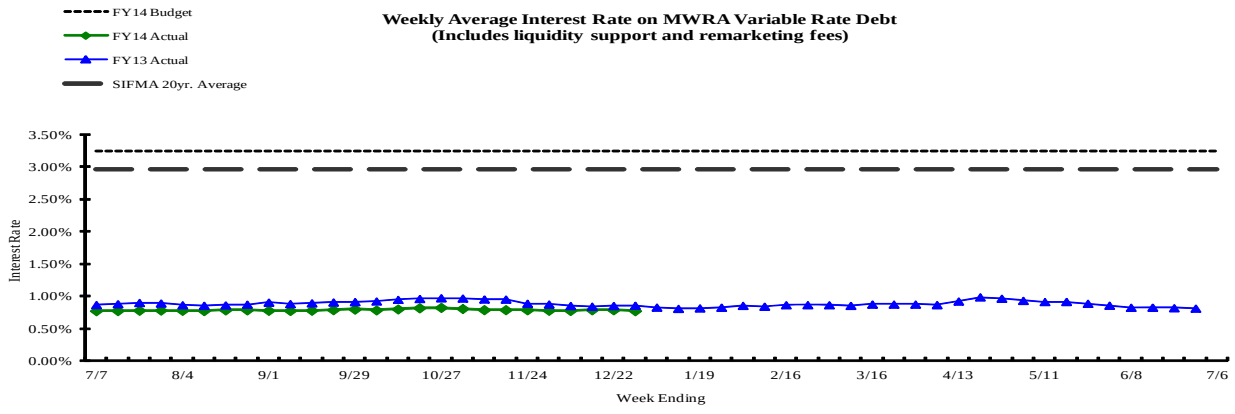
2013 Series A ($170.6)	2.45%

MWRA Fixed Rate Debt vs. 30 Year Municipal Utility Interest Rate



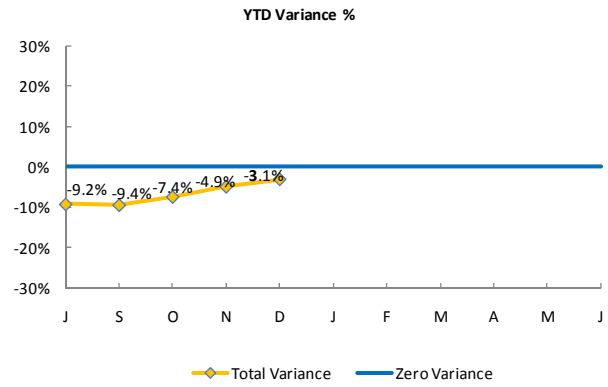
Weekly Average variable Interest Rates vs. Budget

MWRA currently has ten variable rate debt issues with $1.1 billion outstanding, excluding commercial paper. Of the ten outstanding series, five have portions which have been swapped to fixed rate. 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 December, SIFMA rates fluctuated with a high of 0.06% and a low of 0.05%. MWRA's issuance of variable rate debt, although consistently less expensive in recent years, results in exposure to additional interest rate risk as compared to fixed rate debt.

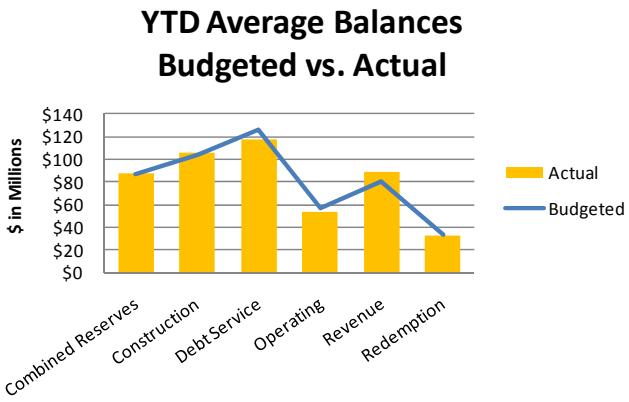


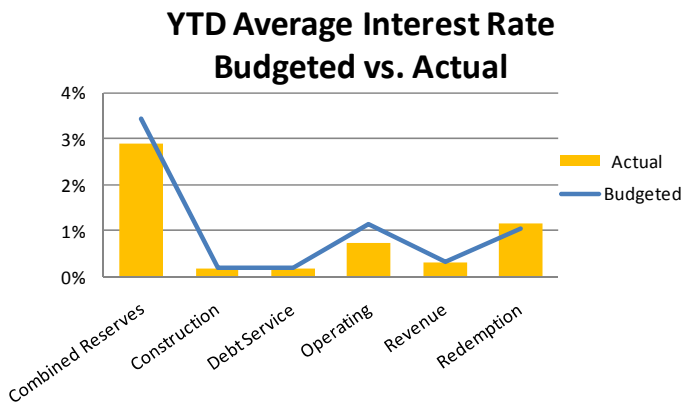
Investment Income
2nd Quarter, FY14

Year To Date



	YTD BUDGET VARIANCE ($000)			
	BALANCES IMPACT	RATES IMPACT	TOTAL	%
Combined Reserves	$11	($236)	(225)	-15.1%
Construction	$1	($1)	(0)	-0.1%
Debt Service	($7)	($1)	(8)	-6.6%
Debt Service Reserves	$0	$145	145	3.7%
Operating	($17)	($111)	(128)	-39.4%
Revenue	$12	($11)	1	0.8%
Redemption	$0	$20	20	11.5%
Total Variance	$0	($196)	($195)	-3.1%





Monthly