

MASSACHUSETTS WATER RESOURCES AUTHORITY

Board of Directors Report

on

Key Indicators of MWRA Performance

for

Third Quarter FY2009

| Q1 | Q2 | Q3 | Q4 |
|----|----|----|----|
| | | | |



Frederick A. Laskey, Executive Director
Michael J. Hornbrook, Chief Operating Officer
May 13, 2009

Board of Directors Report on Key Indicators of MWRA Performance for Third Quarter FY2009

Table of Contents

Operations and Maintenance

| | |
|---|----|
| DITP Operations-Energy | 1 |
| DITP Operations | 2 |
| Residuals Processing | 4 |
| DITP Maintenance | 5 |
| Operations Division–Metering & Leak Detection | 6 |
| Water Distribution System–Valves | 7 |
| Wastewater Pipeline/Structures | 8 |
| FOD Metro Facility & Equipment Maintenance | 9 |
| Field Operations Energy Program | 10 |
| Toxic Reduction and Control | 11 |
| Field Operations – Narrative Topics | 12 |
| Laboratory Services | 14 |

Construction Programs

| | |
|--------------------------|----|
| Projects in Construction | 15 |
| CSO Update | 17 |
| CIP Expenditures | 18 |

Drinking Water Quality and Supply

| | |
|---|----|
| Source Water – Microbial Results | 19 |
| Source Water – Turbidity and Algae | 20 |
| Treated Water – Disinfection Effectiveness | 21 |
| Treated Water – pH and Alkalinity, Complaints | 22 |
| Bacteria and Chlorine Residual Results | 23 |
| Disinfection By-Products, UV 254 | 24 |
| Water Supply/Source Water Management | 25 |

Wastewater Quality

| | |
|--|----|
| NPDES Permit Compliance – Deer Island | 26 |
| NPDES Permit Compliance – Clinton | 27 |

Community Flows and Programs

| | |
|---------------------------------------|----|
| Total Water Use – Core Communities | 28 |
| Community Wastewater Flows | 29 |
| Community Support Programs | 30 |

Business Services

| | |
|------------------------------|----|
| Procurement | 32 |
| Materials Management | 33 |
| MIS Program | 34 |
| Law Dept.-Activities | 35 |
| Internal and Contract Audits | 38 |

Other Management

| | |
|-------------------------------|----|
| Workforce Management | 39 |
| MWRA Workplace Safety Program | 40 |
| Job Group Representation | 41 |
| MBE/WBE Expenditures | 42 |
| CEB Expenses | 43 |
| Cost of Debt | 44 |
| Investment Income | 45 |

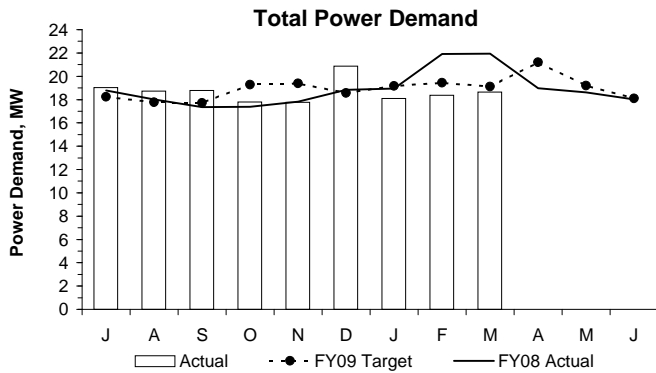
This quarterly report is prepared by MWRA staff to track a variety of MWRA performance measures for routine review by MWRA's board of directors. The content and format of this report is expected to develop as time passes. Information is reported on a preliminary basis as appropriate and available for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

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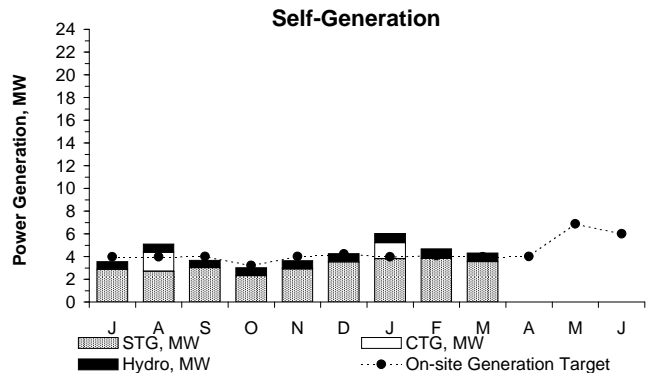
OPERATIONS AND MAINTENANCE

Deer Island Operations

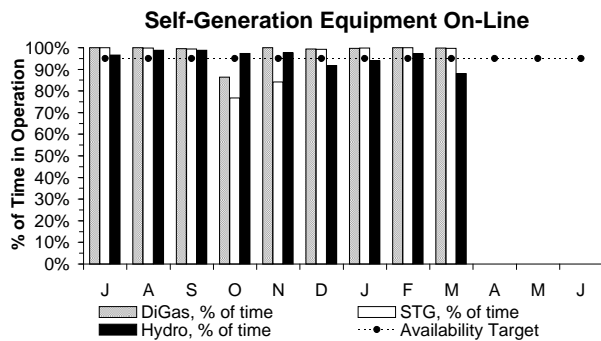
3rd Quarter - FY09



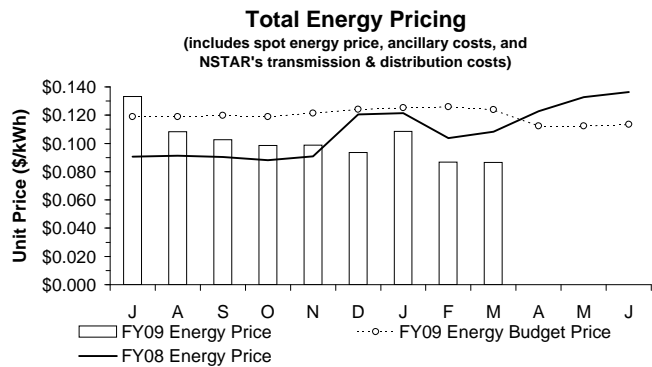
Overall, Total Power Demand for the 3rd Quarter was 5% or 1.9 million kWh lower than the FY09 target. Power demand from total pumping was 6.7% lower than projections even though plant flow was on target, due to atypical plant flow patterns this quarter than in previous years; plant flow was less variable and peak flows were also lower than in previous years. Therefore, less pumps overall were needed to manage the flows this quarter than during the same period in previous years.



Power generated on-site was 25% higher than the target for the 3rd Quarter. Power generation by the STG, Hydro turbines, and the CTGs all exceeded their targets. The CTGs operated a total of 55.6 hours during the 3rd Quarter, of which 51.6 hours (with 1.36 MW generated) resulted from the air emissions testing conducted in January per air permit requirements. The remaining 4.0 hours of CTG operation during the 3rd Quarter was from routine maintenance and checkout purposes and generated 0.07 MW. DI did not participate in any demand response events in the 3rd Quarter as none were called.

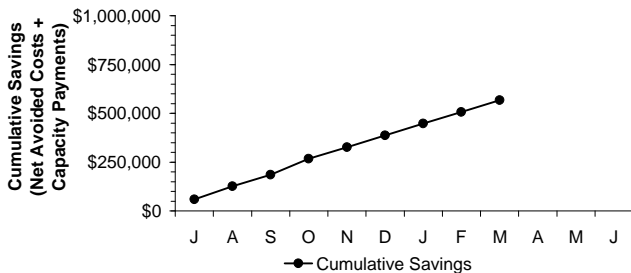


The DiGas and the STG systems met their 95% Availability Target for the 3rd Quarter; the Hydro turbines were slightly below target at 93%. Hydro Turbine 2 was offline for nine days in March for scheduled maintenance; Turbine 1 was also taken offline during this work as a safety precaution. Although their availability was down slightly, the Hydro turbines still exceeded their power generation target for the Quarter as plant flow remained fairly constant throughout the quarter resulting in more consistent turbine operation.



Under the current energy supply contract, all of DI's energy is purchased in real time. Overall, the total energy price in the 3rd Quarter was 25% lower than the target due to lower-than-budgeted spot energy prices. The total energy price includes spot energy price, transmission & distribution charges, and ancillary charges. Please note the March total energy price is an estimate as the invoice has not been received. Year-to-date costs as a result of the lower energy pricing are estimated at approximately \$558,268 less than budgeted.

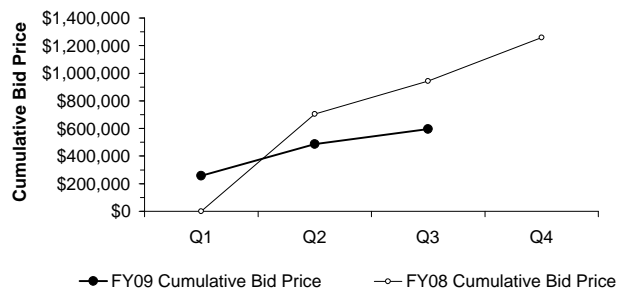
Load Response Program



DI did not participate in any demand response events during the 3rd Quarter as none were called.

Deer Island participates in the ISO-New England Load 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 or high pricing, MWRA receives monthly Capacity Payments from ISO-NE. When it runs the CTGs at ISO-NE's request, MWRA receives energy payments from ISO-NE and also avoids NSTAR's transmission and distribution charges. "Net Avoided Cost" is the avoided NSTAR payments 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 - \$566,859 through the 3rd Quarter of FY09.

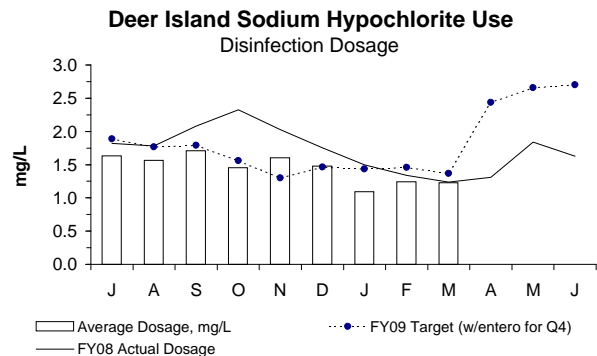
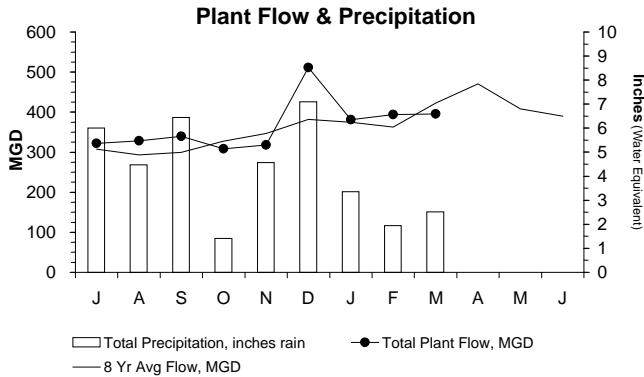
MA Renewable Portfolio Standard



Bids were awarded in February for the sale of 5,088 Renewable Energy Credits (REC) for a total value of \$109,392. The Cumulative Bid Price above reflects the total value of bids received to date in FY09, \$596,517. No bids were received in January or March. Bid prices have declined over the last year due to the increased supply of renewable energy generation. For example, the average cost per REC to date in FY09 is \$33.46 compared to \$54.20 per REC in FY08.

Deer Island Operations

3rd Quarter - FY09



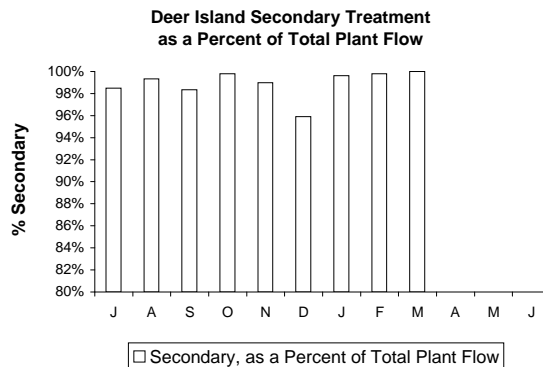
Overall, Total Plant Flow for the 3rd Quarter was consistent with (+1%) the 8-year average flow (390.1 mgd actual vs. 386.7 mgd expected) even though precipitation was 14% lower than the 8-yr average for the quarter (7.8 water equivalent inches actual vs. 9.03 water equivalent inches expected). Significant snowmelt in February, which resulted in 9% higher flows, is likely the main reason overall Total Plant Flow was on target for the quarter even as precipitation was lower than expected.

The disinfection dosing rate was 16% lower than the target for the 3rd Quarter and 13% lower than the FY08 actual dosage for the same period due to lower-than-expected chlorine demand. Chlorine demand was less because the wastewater continues to contain less overall solids and organic matter as a result of the heavy rains from December 2008, which cleared the collection system. The relatively higher plant flow earlier this year also helped minimize the buildup of solids and organic matter in the collection system during the 3rd Quarter.

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

Secondary Blending Events

| Month | Count of Blending Events | Count of Blending Events Due to Rain | Count of Blending Events Due to Non-Rain-Related Events | Secondary, as a Percent of Total Plant Flow | Total Hours Blended During Month |
|--------------|--------------------------|--------------------------------------|---|---|----------------------------------|
| J | 5 | 5 | 0 | 98.5% | 21.0 |
| A | 2 | 2 | 0 | 99.3% | 8.64 |
| S | 4 | 4 | 0 | 98.3% | 28.12 |
| O | 1 | 1 | 0 | 99.8% | 3.00 |
| N | 3 | 3 | 0 | 99.0% | 16.32 |
| D | 6 | 6 | 0 | 95.9% | 80.07 |
| J | 2 | 2 | 0 | 99.6% | 9.84 |
| F | 1 | 1 | 0 | 99.8% | 4.19 |
| M | 0 | 0 | 0 | 100.0% | 0.00 |
| A | | | | | |
| M | | | | | |
| J | | | | | |
| Total | 24 | 24 | 0 | 98.9% | 171.2 |



There were a number of significant rain events during the 3rd Quarter, which resulted in three separate blending events totaling 14.0 hours and 69.9 million gallons of flow blended with secondary effluent. All secondary blending events that occurred during the quarter were due to rain (or rain in combination with heavy snowmelt) resulting in high plant flows. Secondary permit limits were met at all times.

Overall, 99.8% of the total plant flow to DITP was treated through secondary treatment during the 3rd Quarter. The Maximum Secondary Capacity for the entire quarter was 700 mgd.

Deer Island Operations & Maintenance Report

Environmental/Pumping:

The plant achieved a maximum average hourly flow rate for the quarter of 910 mgd on February 22 as a result of a major storm event that brought snowfall followed by heavy rain to the area and produced a total of 0.78 inches of water equivalent precipitation. Pumping and treatment operations continued without incident throughout this storm event, as well as throughout the entire quarter.

Pumping:

(Background) In an effort to optimize plant performance, increase energy efficiencies, and reduce overall operating costs, staff ran a three-day test in November 2008 to evaluate the potential benefits of raising the set point for the shaft level elevation between the Nut Island Headworks and the South System Pump Station (SSPS). By operating at higher shaft levels, the pumps will not have to lift the wastewater as high, thus reducing pumping electricity consumption. The test was performed to ensure that the SSPS would still operate consistently and reliably without causing undue stress on the pumps or ancillary equipment. Significant energy savings were quantified and no problems were identified during the test. The Nut Island shaft level was officially raised by five feet on March 3, 2009 following a thorough review of the test data by MWRA staff, the pump manufacturer, and MWRA's Design Engineer, AECOM. Similar changes to both the North and South System Pump Stations back in 2002 have resulted in savings of more than \$200,000 annually in electricity costs.

Deer Island Operations

3rd Quarter - FY09

Deer Island Operations & Maintenance Report (continued)

Residuals:

A major project to thoroughly inspect, clean, calibrate, and repair Module 2's waste gas flare and its associated systems was performed in late 2008 and the unit was returned to operation in January 2009. The same work is being performed on Module 1's waste gas flares and this work was started in March with a completion date expected by late April 2009.

In February, staff began an important project to reduce solid mineral build-up within the overflow boxes and lines of the digesters. All four digesters in Module 1 were taken offline in October 2008 and subsequently drained and cleaned. Sulfuric acid was added to the overflow lines and boxes in Digesters 1 and 2 in February; the acid was allowed to soak for 30 days to break down the solid mineral build-up and was removed in March. This "acid pickling" process will begin in April for Digesters 3 and 4.

Energy:

Complete compliance emissions testing was performed on the two CTGs as required by Mass. DEP Operating Permit. This emissions testing took place during six days in late January; the previous CTG compliance test program was completed in February 2004.

A two-week annual scheduled maintenance of the CTGs began on February 23 and continued into March. Maintenance activities included: manufacturer-recommended preventive maintenance for the ancillary systems, generator bearing inspections, calibrations to the instrument and controls system, and a fire system inspection. This work required the CTGs to be unavailable for operation during the day when the maintenance was being performed. EPA and DEP were notified in advance of this unavailability.

Clinton Wastewater Treatment Plant

Spill Prevention and Control Plan:

Staff successfully reduced the plant's oil inventory and storage capacity to below threshold limits for the preparation of a Spill Prevention and Control Plan. By reducing inventory and storage below threshold limits, cost savings will be realized. Avoided costs include consultant preparation of a written plan and plant staff monitoring and reporting requirements.

Effluent Chlorine Line:

Staff excavated and replaced a single effluent chlorine line with a dual line (for redundancy) with isolation valves on each line.

Chemical Building:

Staff replaced three 6-inch gate valves on the wasting line in the Chemical Building and installed new nuts and bolts on the valves. This work is a continuation of an on-going valve replacement project. To date, a total of six valves on the wasting line feeding pumps have been replaced.

Fire Alarm System Maintenance Contract:

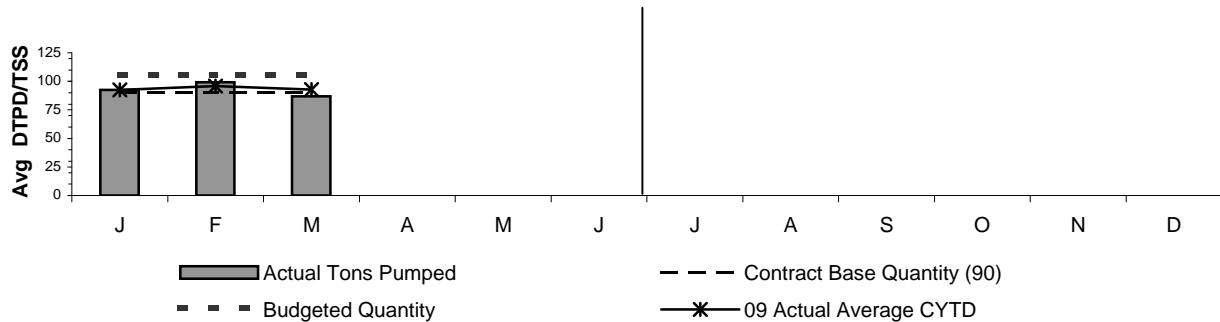
A new service/maintenance contract was awarded this quarter for all Operations facilities, including Clinton. This contract will provide preventative maintenance services for all of the plant's fire alarm control system components. It will provide monitoring of alarms with call capabilities to management, the Operations Control Center in Chelsea and the Clinton Fire Department, as well as a quarterly inspection service.

Deer Island Residuals

3rd Quarter - FY09

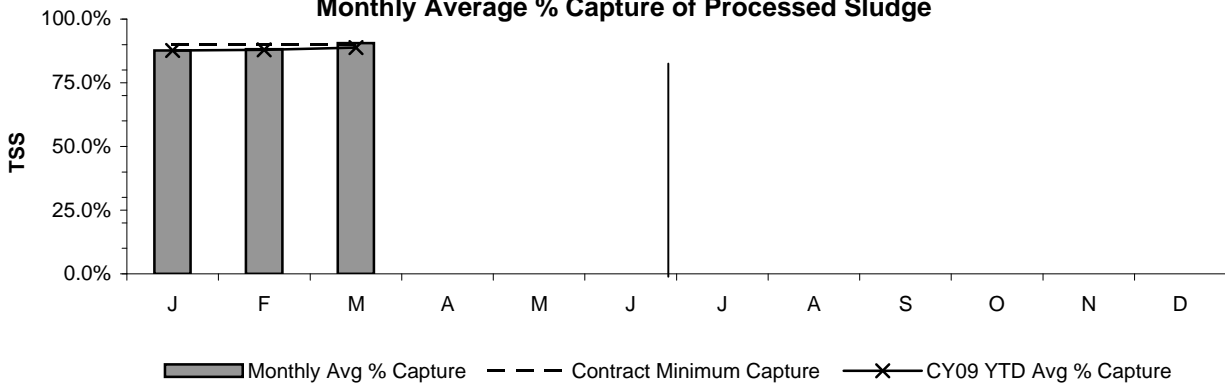
MWRA pays a fixed monthly amount for the calendar year to process up to 90 DTPD/TSS as an annual average. The monthly invoice is based on 90 DTPD/TSS (Dry Tons Per Day/Total Suspended Solids) times 365 days divided by 12 months. At the end of the year, the actual totals are calculated and additional 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 (FY09's budget is 106 DTPD/TSS).

Sludge Pumped From Deer Island



The average total quantity of pumped sludge for the 3rd Quarter was 93.7 DTPD, which is less than FY09's budget of 106 DTPD. Lower quantities of primary sludge are likely the result of the heavy rains that were seen in December, which can have a "scouring" affect on the wastewater system. Sludge quantities can vary based on flow and changes in sludge inventory, as well as the performance of primary and secondary treatment. Upset conditions can also affect sludge quantities.

Monthly Average % Capture of Processed Sludge



NEFCO did not meet the contract requirements for the daily average percentage capture of solids, which is at least 90%. The average solids capture rate for the 3rd Quarter was 88.8%. Continued inconsistent operation of the new automatic sampler contributed to the lower number into the 3rd Quarter. However, sampling procedures have been updated and appear to be working correctly. The capture rate for March was 91%.

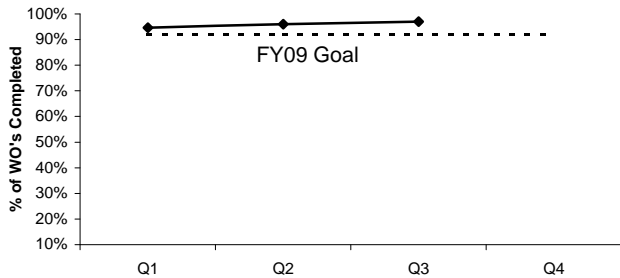
Deer Island Maintenance

3rd Quarter - FY09

Productivity Initiatives

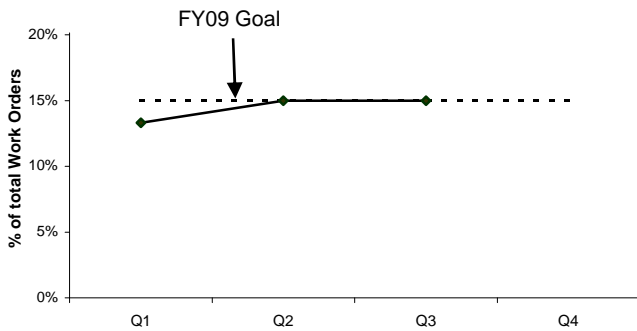
Productivity initiatives include increasing predictive maintenance tasks. Accomplishing this initiative should result in a decrease in the overall maintenance backlog.

Predictive Maintenance Compliance



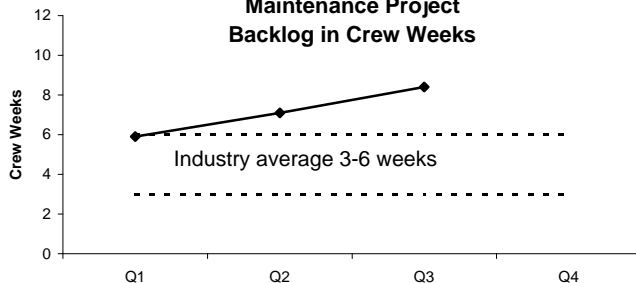
Deer Island's FY09 predictive maintenance goal is completion of 92% of all PdM work orders. DI completed 97% of all PdM work order in the 3rd Quarter.

Predictive Maintenance



Deer Island's FY09 goal is to increase PdM work orders to 15% of total work orders. The industry is moving toward increasing predictive maintenance work to reduce down time and better predict when repairs are needed. DI has reached the goal now for two consecutive quarters.

Maintenance Project Backlog in Crew Weeks

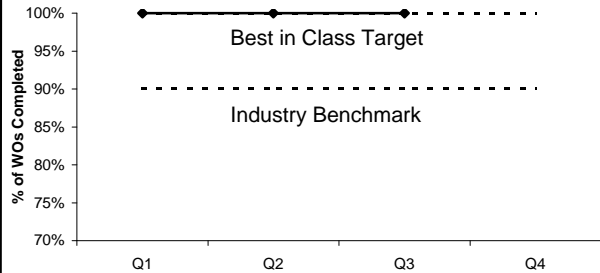


The industry average for maintenance backlog is 3-6 weeks. Deer Island's FY09 goal is to stay within the industry average. Maintenance backlog was 8.4 weeks for the quarter. Long-term IA absences and several vacancies are contributing to the higher backlog. Management is limiting overtime spending to critical equipment only.

Proactive Initiatives

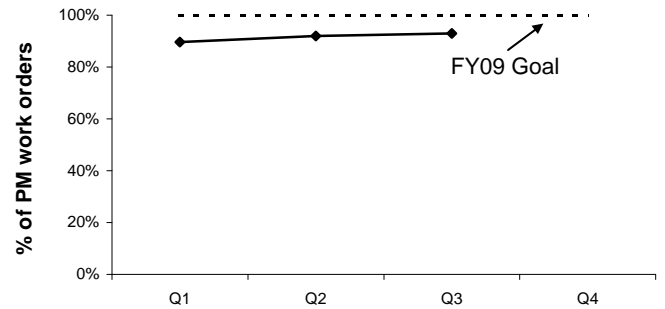
Proactive initiatives include completing 100% of all preventive maintenance tasks and increasing preventive maintenance kitting. These tasks should result in lower maintenance costs for maintenance.

Preventive Maintenance Compliance



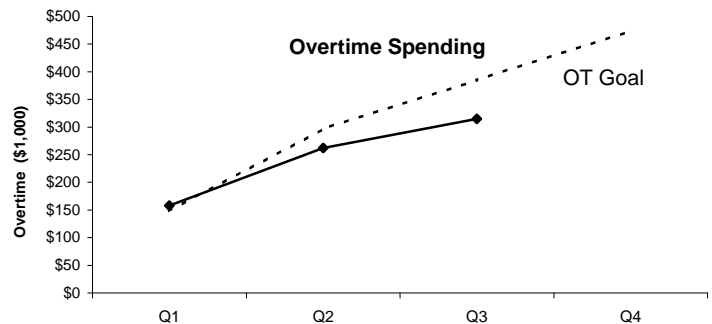
Deer Island's FY09 preventive maintenance goal is completion of 100% of all PM work orders from Operations and Maintenance. DITP completed 100% of all PMs this quarter.

Preventive Maintenance Kitting



Deer Island's FY09 preventive maintenance kitting goal is 100% of all PM work orders. Steady progress has been made; DI completed 93% in the 3rd Quarter.

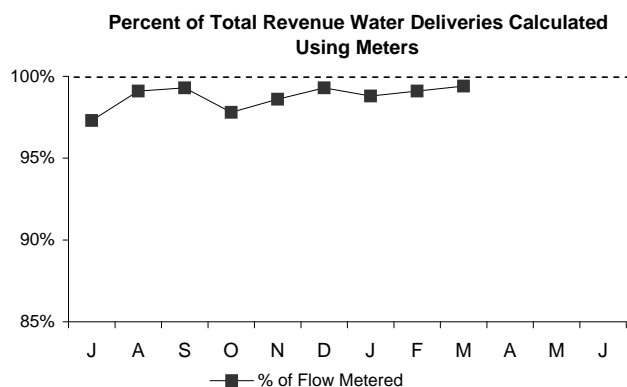
Overtime Spending



Overtime is \$35K under budget for this quarter. This quarter's overtime was spent on storm coverage, clarifier work and critical equipment

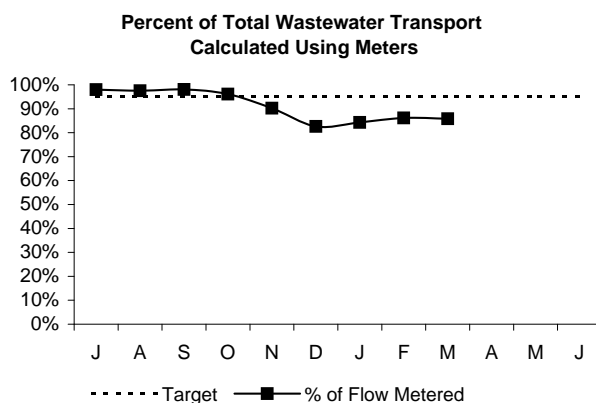
Operations Division Metering 3rd Quarter - FY09

WATER METERS



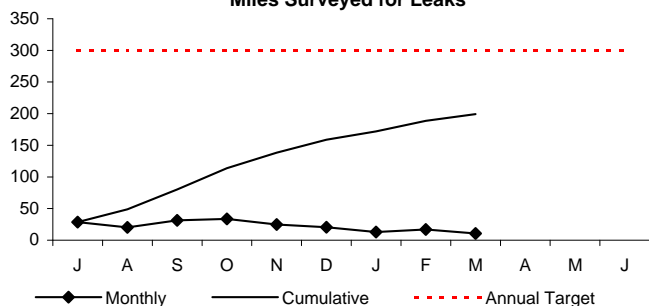
The target for revenue water deliveries calculated using meters is 100%. Estimates are generated for meters that are out of service due to instrumentation problems or in-house and capital construction projects. During the 3rd Quarter, meter actuals accounted for 99.1% of flow; only 0.9% of total revenue water deliveries were estimated. The following is the breakdown of estimations:
 In-house and Capital Construction Projects - 0.4%
 Instrumentation Failure - 0.5%

WASTEWATER METERS



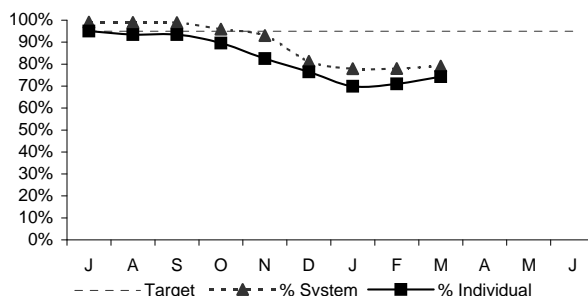
The target for revenue wastewater transport calculated using meters is 95%. Estimates are generated for meters missing data due to instrument failure and/or erratic meter behavior. Estimates are produced using data from previous time periods under similar flow conditions. During the 3rd Quarter, on average, 14.93% of the total flow was estimated. Access to many of the meter sites for maintenance continues to be impacted by the ongoing construction and work zone safety issues and the use of flaggers.

Miles Surveyed for Leaks



During the 3rd Quarter, staff inspected 40.47 miles of MWRA water mains; this brings the total for the fiscal year to 199.38 miles.

% METER UPTIME



For the 3rd Quarter, out of a possible 1,581,120 data points, 342,030 points were missed resulting in a system-wide up time of 78.4%. Of the 183 revenue meters installed, on average 52 experienced down time greater than the 5% target as a result of battery and communication issues. As mentioned above, access to many of the meter sites for maintenance continues to be impacted by ongoing construction and work zone safety issues and the use of flaggers. For the third quarter, down time for an individual meter is defined by any individual meter having, on average, less than 2,786 data points.

Water Distribution System

| Month | J | A | S | O | N | D | J | F | M | A | M | J |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|---|---|
| Leaks Detected | 1 | 0 | 0 | 2 | 1 | 1 | 1 | 0 | 0 | | | |
| Leaks Repaired | 1 | 0 | 0 | 2 | 1 | 1 | 1 | 0 | 0 | | | |
| Backlog | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| Avg. Lag Time | 4.0 | 4.0 | 4.0 | 3.0 | 2.5 | 2.0 | 1.8 | 1.8 | 1.8 | | | |

The leak backlog for FY09 is currently at zero. Pipeline staff found and repaired one leak in the 3rd Quarter. The Pipeline Program's goal is to repair all leaks found during the fiscal year. However, if the goal cannot be reached due to restrictions, isolations, communities, or degree of difficulty, then the goal is to have not more than two leaks outstanding at year's end.

Water Distribution System Valves

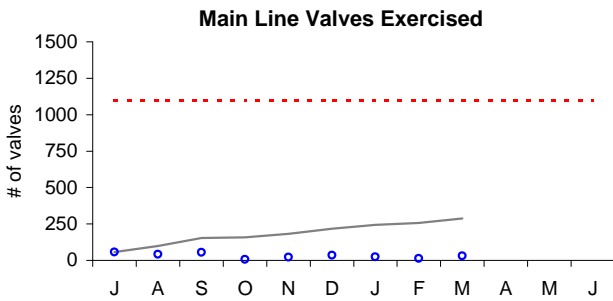
3rd Quarter - FY09

Background

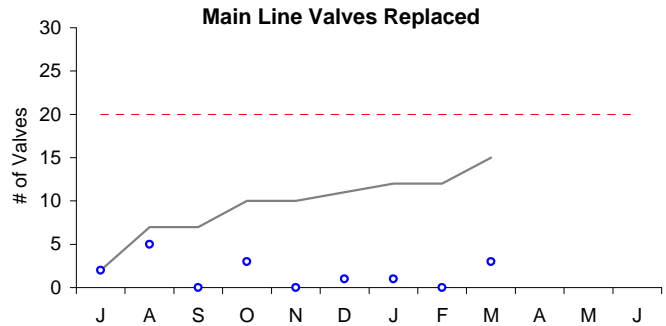
Valves are exercised, rehabilitated, or replaced in order to improve their operating condition. This work occurs year round. Valve replacements occur in roadway locations during the normal construction season, and in off-road locations during the winter season. Valve exercising can occur year round but 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. Since October 2008, Field Operations' maintenance work has been impacted by construction and work zone safety issues and the use of flaggers.

| Type of Valve | Inventory # | Operable Percentage | |
|--------------------|-------------|---------------------|--------------|
| | | FY09 to Date | FY09 Targets |
| Main Line Valves | 1,283 | 85.5% | 87% |
| Blow-Off Valves | 1,161 | 90.7% | 94% |
| Air Release Valves | 1,330 | 91.7% | 92% |
| Control Valves | 48 | 94.0% | 92% |

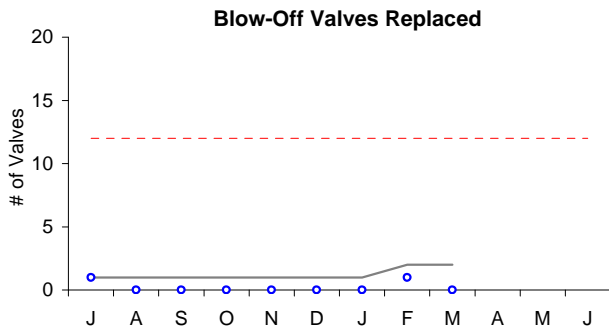
Key to Symbols: ○ FY2009 Monthly Total
— FY2009 Cumulative Total



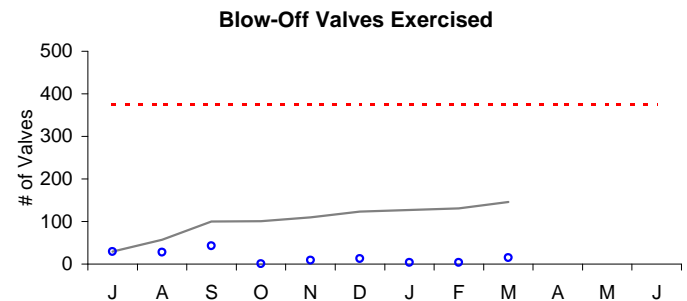
Staff exercised 69 main line valves this quarter bringing the total for the fiscal year to 287.



During the 3rd Quarter, staff replaced four main line valves; this brings the total for the fiscal year to 15.



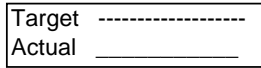
Only one blow-off valve was replaced this quarter. Blow-off valves replacement have been impacted by weather; snow storms hamper staff's ability to replace blow-off valves. Construction work zone safety/flagger issues and current staffing levels also have affected the blow-off valve replacement schedule for FY09. With the arrival of spring, staff expect to accelerate blow-off valve replacements and hope to meet the FY09 goal.



Staff exercised 23 blow-off valves during the 3rd Quarter bringing the total for the fiscal year to 146.

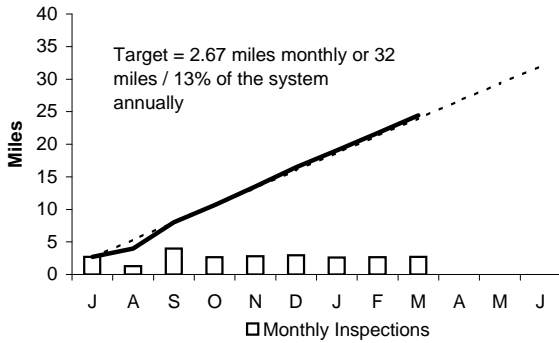
Wastewater Pipeline and Structure Inspections and Maintenance

3rd Quarter - FY09



Inspections

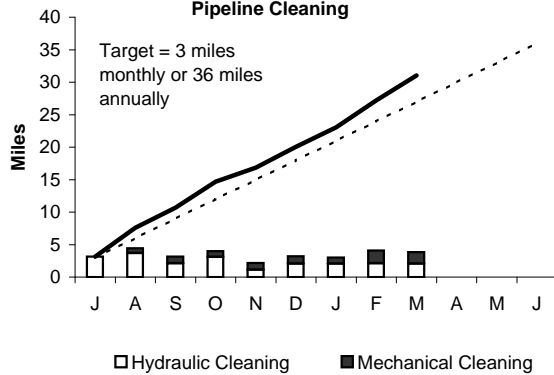
Pipeline Inspections



Staff internally inspected 7.96 miles of MWRA sewer pipeline. Community Assistance was provided this quarter as MWRA staff inspected a total of 2.55 miles of sewer pipeline in Quincy, Weymouth and Winthrop.

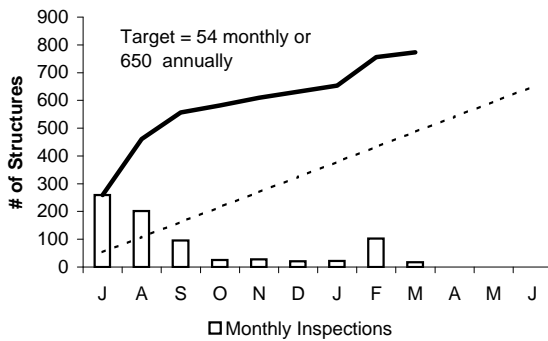
Maintenance

Pipeline Cleaning



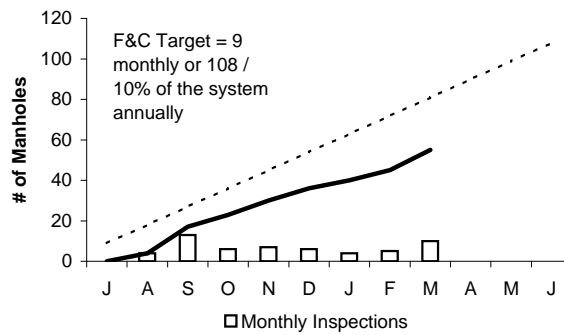
Staff cleaned 10.96 miles of MWRA's sewer system and removed 47 cubic yards of grit and debris. Community Assistance was provided during the quarter as MWRA staff cleaned .34 miles of pipe in Winthrop.

Structure Inspections



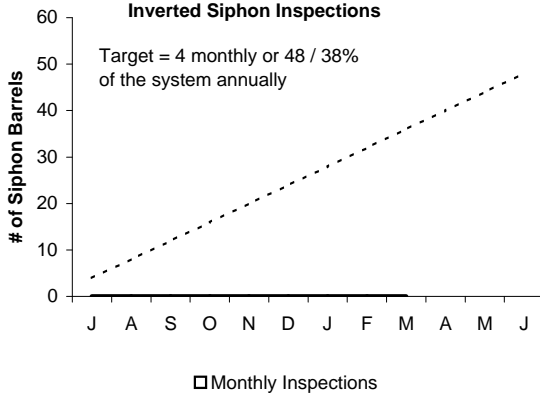
During the 3rd Quarter, staff inspected the 12 CSO structures (once each month = 36) and 106 additional manholes/structures; 144 inspections in total.

Manhole Rehabilitation



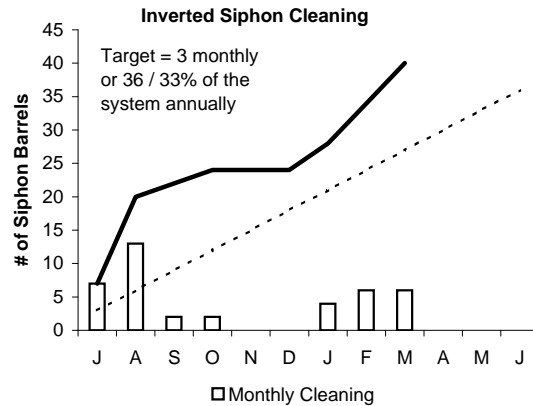
Staff replaced 19 frames and covers during the 3rd Quarter.

Inverted Siphon Inspections



No siphon barrels were inspected this quarter. However, MWRA has taken delivery of the new sonar camera and software (to replace the existing non-functioning camera) and staff training will take place in April. Staff expect to recommence siphon inspections during the 4th Quarter.

Inverted Siphon Cleaning



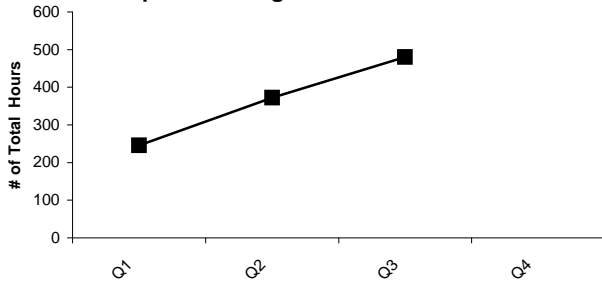
Staff cleaned 16 siphon barrels during the 3rd Quarter.

Field Operations' Metropolitan Equipment & Facility Maintenance

3rd Quarter 2009

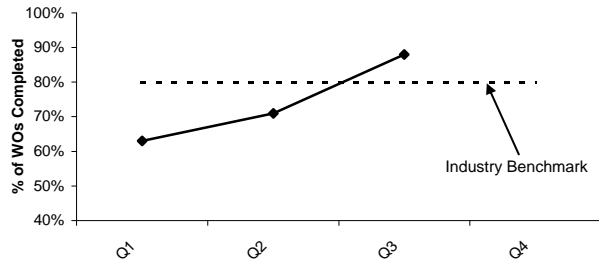
This is a new Yellow Notebook page for the Field Operations Department. Several maintenance and productivity initiatives are in progress. Operators now performing light maintenance tasks is one of those productivity initiatives. This initiative frees up maintenance staff to perform corrective maintenance and project work, thus reducing maintenance spending. Backlog and overtime metrics monitor the success of these maintenance initiatives.

Operations Light Maintenance PM Hours



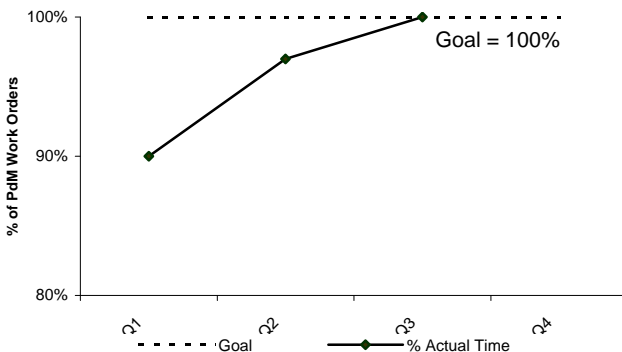
Operations staff averaged 480 hours of preventive maintenance during the 3rd quarter. Overall Operations completed an average 23% of the total PM hours for the 3rd Quarter which is above the industry benchmark of 10 to 15% of total PM hours completed by operators.

Overall Preventive Maintenance



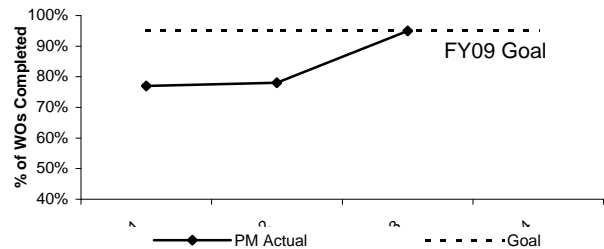
FOD's preventive maintenance goal includes completion of 80% of all PM work orders. An average of 88% of all PMs were completed in the 3rd Quarter and the overall goal of 80% was reached. The PM completion goal will be raised to 100% in FY10.

Time in Maximo



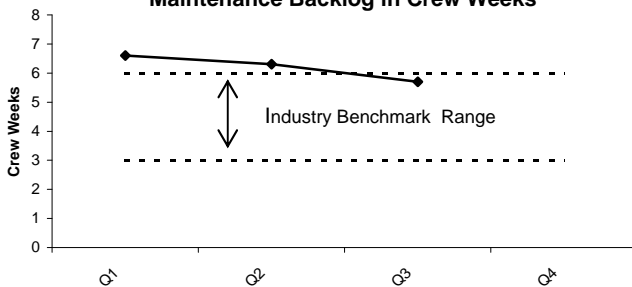
To ensure accurate data in the Maximo database, 8 hours of staff time per day must be entered into Maximo. A new method of time entry into Maximo and the issuance of a daily accountability report improved the time entry. 100% of time was entered in the 3rd Quarter.

Operations Light Maintenance % PM Completion



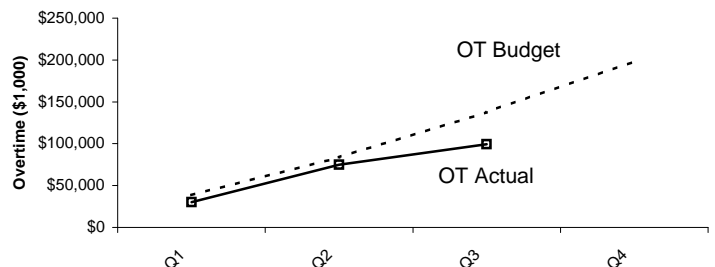
Operations' PM goal is the completion of 95% of all PMs. Operations completed an average of 95% of the PMs in the 3rd quarter which meets the FY09 goal.

Maintenance Backlog in Crew Weeks



The 3rd Quarter backlog average is at 5.7 weeks while overtime spending is \$38K under budget for the year. Management's goal is to control the overtime budget and stay within the industry benchmark of 3 to 6 weeks.

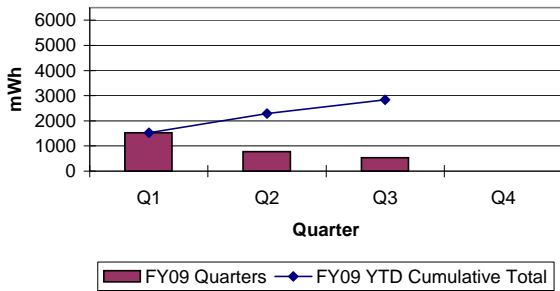
Overtime Spending



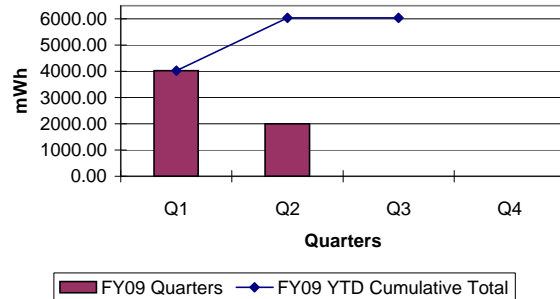
Maintenance overtime is \$38K under budget for FY09 and \$21K under budget for the 3rd quarter. Overtime was used to support call-ins for emergency maintenance and snow removal.

Field Operations Energy Report 3rd Quarter - FY09

**Quarterly Totals for Hydro Production at
Cosgrove Hydroelectric Generation Facility**



**Quarterly Hydro Production at the Oakdale
Hydroelectric Generation Facility**



In the 3rd Quarter, the Cosgrove Hydroelectric Station generated a net of 539 mWh, which resulted in revenue generation of \$22,328. The year-to-date total revenue generated at Cosgrove is \$168,143. Generation was down from the same quarter last year, primarily due to a longer half plant operation period this year as a result of contractor work on the closed loop cooling system. Staff continued the practice begun last year of operating the station at reduced flow during half-plant operations rather than shutting it down completely.

Oakdale Station's hydroelectric plant generated no energy during the 3rd Quarter because no water transfers were needed. Oakdale's operating protocol dictates that power is generated when water is transferred from Quabbin to Wachusett unless conditions result in flows that are in excess of generating capability. The year-to-date total revenue generated at Oakdale remains the same as it was at the end of the 2nd Quarter, \$599,833.

Energy Highlights:

Loring Road Hydroelectric Generation Feasibility Study: Preliminary design work continued into the 3rd Quarter.

CWTP Energy Audit: National Grid (NGRID) and its contractor conducted an energy audit of the CWTP in FY08. The first phase of the audit was covered lighting only and NGRID's contractor recommended changing out the high pressure sodium lights for more energy-efficient lighting and installing occupancy and daylight sensors, as appropriate. The work was completed in February 2009. MWRA will save approximately 450,000 kWh and approximately \$56,000 annually, as a result of this work.

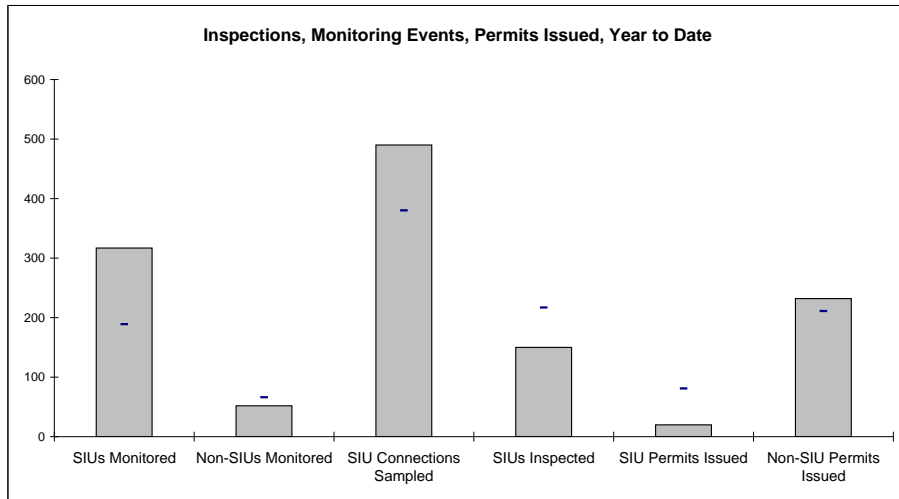
Chelsea Facility Energy Audit: The second phase of an energy audit at Chelsea, a study of the HVAC system, was delayed by NSTAR and will now begin in May 2009. Staff will work with NSTAR and its contractor after these recommendations are received to determine which recommendations to implement. NSTAR is the energy provider for the Chelsea Facility and will provide automatic rebates for up to 50% of any energy-saving measure implemented as a result of the audit.

Energy Audit of Eight FOD Facilities: MWRA staff have identified eight Field Operations Department facilities that could benefit from comprehensive energy audits. These facilities include: Chelsea Creek, Columbus Park, and Ward Street Headworks; Gillis, Newton Street, Commonwealth Avenue, and Prison Point Pump Stations; and the Chelsea Screen House. Combined, these eight facilities used 11,590,828 kWh of electricity in FY08. The focus of this energy audit will be lighting, HVAC, pumps, and motors. These audits will be performed through NSTAR and are scheduled to begin in May 2009.

Energy Audit of Southborough Facility: NSTAR and its contractor began an energy audit of the Southborough Facility during the 3rd Quarter. The audit will look at all of the buildings at the facility and is expected to be completed in July 2009.

Toxic Reduction and Control

3rd Quarter - FY09



EPA Required SIU Monitoring Events for FY09: 189
YTD: 317

Required Non-SIU Monitoring Events for FY09: 66
YTD: 52

SIU Connections to be Sampled For FY09: 380
YTD: 490

EPA Required SIU Inspections for FY09: 217
YTD: 150

SIU Permits due to Expire In FY09: 81
YTD: 20

Non-SIU Permits due to Expire for FY09: 211
YTD: 232

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

The annual goal is set at the beginning of the fiscal year but it 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's monitoring plan requires one additional sampling event for 40% of the SIUs and two additional sampling events for 10% of the SIUs. TRAC also monitors one-third of the non-SIUs each year.

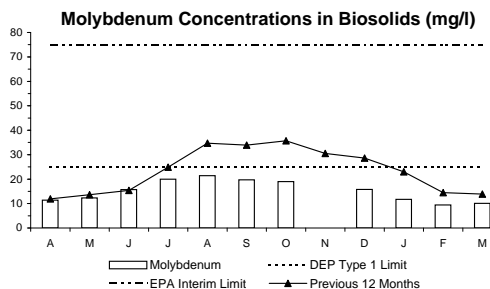
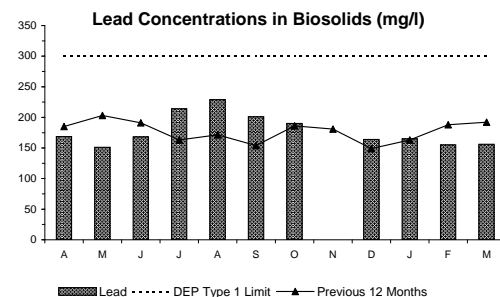
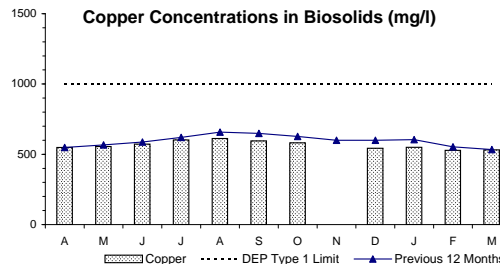
SIU and Non-SIU permits are issued with durations of two to five years, depending on the category of industry, varying the number of permits that expire in a given year.

| | Number of Days to Issue a Permit | | | | | | Total Permits Issued | |
|-------|----------------------------------|----|------------|---|-------------|---|----------------------|---------|
| | 0 to 120 | | 121 to 180 | | 181 or more | | SIU | Non-SIU |
| Jul | 0 | 8 | 0 | 1 | 0 | 0 | 0 | 12 |
| Aug | 2 | 90 | 1 | 4 | 0 | 6 | 3 | 100 |
| Sep | 0 | 6 | 1 | 1 | 0 | 1 | 1 | 8 |
| Oct | 1 | 7 | 0 | 2 | 0 | 0 | 1 | 9 |
| Nov | 1 | 9 | 0 | 1 | 0 | 0 | 1 | 10 |
| Dec | 0 | 9 | 0 | 4 | 0 | 0 | 0 | 13 |
| Jan | 4 | 40 | 2 | 2 | 0 | 0 | 6 | 42 |
| Feb | 2 | 11 | 1 | 3 | 1 | 7 | 4 | 21 |
| Mar | 1 | 13 | 0 | 2 | 3 | 2 | 4 | 17 |
| Apr | | | | | | | 0 | 0 |
| May | | | | | | | 0 | 0 |
| Jun | | | | | | | 0 | 0 |
| % YTD | 83% | | 9% | | 7% | | 20 | 232 |

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.

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. The hotter the season, the higher the spike. TRAC has an ongoing program to persuade cooling tower operators to switch to phosphate-based corrosion inhibitors. TRAC will continue its voluntary molybdenum reduction program, which has decreased influent loads significantly since 1995.

***Note: Because of the duct work fire at the Pelletizing Plant last year, no metals data was included in the three graphs to the right for the month of November 2008.**



Field Operations Highlights

3rd Quarter FY09

Western Water Operations & Maintenance

- Carroll Water Treatment Plant (CWTP): Staff worked on Treatment Train B maintenance tasks, which included cleaning the primary contactors, the extended contactors, and the B-side storage tank. Other “half-plant” maintenance tasks included contactor door maintenance, ozone diffuser stone replacement, replacing the rupture disks, mud valve inspection, and bubble testing the ozone diffuser stones. Staff also completed installation of upgraded actuators on the flow control valves feeding the ozone drop legs into the contactors. These valves control the flow of ozone to the diffuser grids and the upgraded actuators will provide better flow control.
- Winsor Power Station: Staff made valve changes within the station to allow the river release to be fed from the CVA feed line and isolated the hydro turbine feed line. This utilizes the bypass line and will provide access for the upcoming contract to install a new fixed orifice sleeve valve and a new movable orifice valve on the main line.
- Dam Safety Items: Staff removed fifteen trees from the embankment at the weir on the open channel where it crosses Deerfoot Road in Southborough; staff cleared woody growth and vegetation from the spillway at the Sudbury Dam and installed an additional two-foot section of riprap along the channel of Stony Brook at the base of Sudbury Dam. These work items were identified in a recent dam safety inspection report.

Metro Water Operations & Maintenance

- Section 22 Break and Repair: Staff repaired a leak on Section 22, a 48-inch steel main in Dorchester. Section 22 was isolated without service impacts and the line was returned to service.
- Section 22 Isolation for Linestop Recovery: A new control valve was installed in Section 22 after the first isolation on December 30. The isolation and construction work occurred without incident and the line was back in service by 3:00 a.m. with no service issues reported.

Wastewater Operations & Maintenance

- Training: Cross-training headworks and Operations Control Center (OCC) staff has been implemented with a focus on all aspects of headworks, pumping stations and CSO facilities, including but not limited to, operational procedures, SCADA, wet-weather operation, preventative maintenance and scanning facilities. Training will continue through the end of FY10.
- Sonar Camera System: Staff successfully completed the procurement process for the purchase of a replacement sonar camera and software system. Staff anticipate delivery of the new camera by the third week of April and training will begin in late April, after which staff will re-commence siphon barrel inspections.

TRAC

- EPA Audit: On February 27, TRAC received EPA's Audit Report from its Pretreatment Program audit conducted in December 2007. The cover letter accompanying the report states, “The results of the audit, at this time, show that MWRA is not experiencing any major difficulty in implementing its federally approved industrial pretreatment program” and then identifies as a minor issue to be addressed, required changes to MWRA Sewer Use Regulations to track more closely with EPA's Pretreatment Streamlining Rule. TRAC is drafting a response to the audit report and working with the Law Division to draft proposed changes to MWRA's Sewer Use Regulations. The written response is due to EPA by April 24, 2009 and the proposed regulations revisions must be submitted to EPA by June 25, 2009.
- Penalty Assessment Notice Issued to Harvard University Allston Development Group: On February 4, TRAC issued a \$70,000 Penalty Assessment Notice (PAN) to Harvard University Allston Development Group (Harvard) for its August 22 and August 26, 2008 wastewater discharges to the sanitary sewer, which violated the requirement of MWRA's August 15, 2008 Approval for a One-Time Only Discharge. Harvard has paid a portion of the PAN and has appealed some violations to an Adjudicatory Hearing.

**Metro Equipment
and Facility
Maintenance**

Equipment Maintenance Program

- Chelsea Headworks Grit Pod: Staff conducted ultrasonic thickness testing on the grit pods at the Chelsea Headworks; Pod 2 showed signs of excessive wear and was in need of replacement. Plumbing staff removed compressed air piping; mechanics removed valve piping and removed and disposed of the old pod. The new pod was installed, tested and placed back in service.

Grounds/Custodial Maintenance

- Dam Maintenance: Staff used the Slopemaster to clear brush and overgrowth from around the bowl of the Chestnut Hill reservoir bowl. Clearing work was also performed on Dam 8 at the Fells.

Facility Maintenance

- Chestnut Hill Gatehouse: Carpenters replaced slate sections on the roof of the gatehouse. Original slate sections were located that matched the existing. Overgrowth was also cleared from the side of the building, as well as other minor repairs and repainting as needed.

**Operations
Support**

Operations Engineering

- In January, staff completed an extended period of testing, which was coordinated with Boston Water and Sewer staff, of old Meter 5 compared with results from new Meter 5.

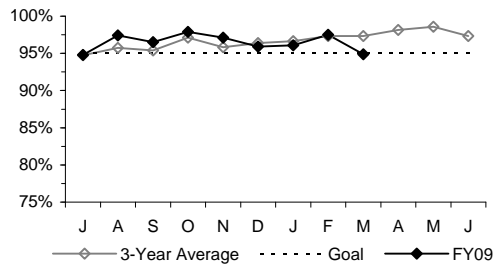
SCADA

- SCADA Improvements at Headworks: Work on the second SCADA construction contract was ongoing in January with improvements at the first two headworks (Chelsea Creek and Ward Street) nearing completion. In February, the contractor completed start-up testing at Chelsea Creek and Ward Street.
- Ward Street and Columbus Park Headworks: Staff continued to study replacement of flow measuring equipment at Ward Street and Columbus Park Headworks to estimate the related impact on flow-based assessments for BWSC. After contractor work was completed, staff have been performing field checks of flume flow metering. Further testing of the new headworks flow measurement systems in those locations is planned after facility SCADA work is completed.
- Columbus Park: The headworks contractor is nearing completion of SCADA work at Columbus Park.
- Water Quality Assurance: Staff continued to monitor CWTP performance to assess measures implemented as a result of last year's expert panel recommendations. Staff also supported the half-plant operations this quarter. Water quality results continue to show improvement from the similar period of last year; internal tank inspections confirm improvements.
- LIMS Switchover: Staff prepared for and then made the switchover to the new LIMS System in January.

Laboratory Services

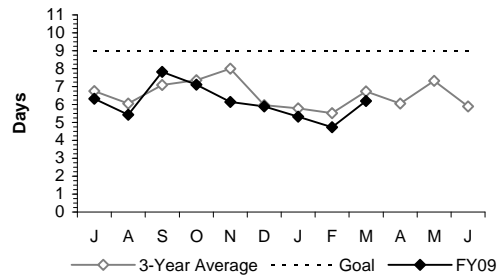
3rd Quarter - FY09

Percent On-Time Results



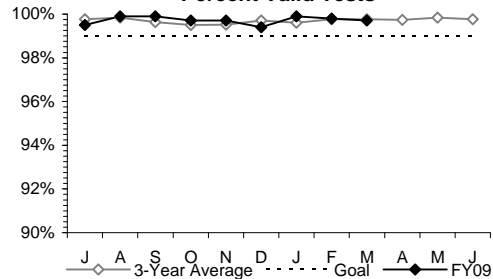
The Percent On-Time measurement was above the 95% goal for two months this quarter; preparation for the new LIMS affected March.

Turnaround Time



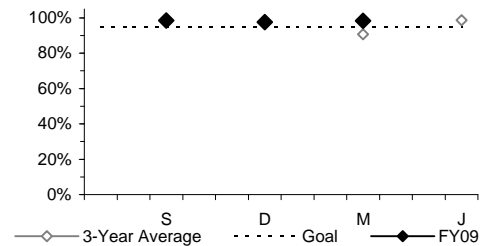
Turnaround Time was faster than the 9-day goal each month during the 3rd Quarter.

Percent Valid Tests



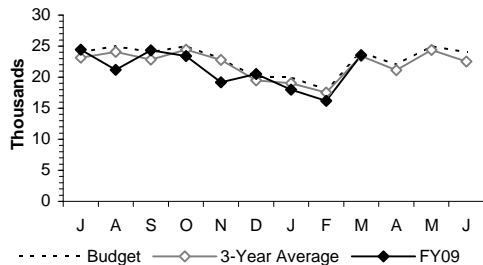
The Percent Valid Tests measurement was above the 99% goal each month during the 3rd Quarter.

Quarterly Compliance Rating



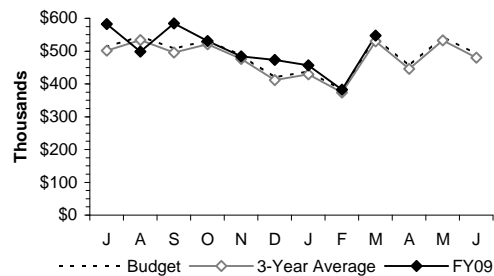
A quarterly compliance audit of Reporting Limit Verifications showed good compliance with requirements.

Tests Completed



The Tests Completed measurement was slightly below the seasonally adjusted budget goal due to slightly inaccurate budget projection.

Value of Services Rendered



The Value of Services Rendered was above the seasonally adjusted budget projection each month this quarter.

Highlights:

Staff Award: Steven Rhode won the "Crystal Crucible" Award for Laboratory Analyst Excellence for outstanding performance, professionalism and contributions to the water quality analysis profession.

LIMS: The new LIMS went "live" for drinking water bacteria on February 1 at Chelsea, Quabbin, and Southborough Labs. Staff successfully completed data from the first month's testing, including uploading results electronically to DEP. The final phase of "Go-Live" for all chemistry and wastewater microbiology testing is scheduled for July 1. This schedule includes approval from clients that their new LIMS results are correctly showing up in their databases.

Quality Assurance: DLS was audited by the Division of Marine Fisheries on bacteria testing procedures to demonstrate a lack of impact on shell fishing in Massachusetts Bay; the laboratory was found to be in compliance with the guidelines set forth by the USFDA. Maintaining this specific certification allows DLS to analyze microbiology samples in-house for NPDES permit-related analyses. Prepared response to DEP for audit items to obtain certification for new methods for mercury, PCBs, and semi-volatile organics.

ENQUAD: Working on statistical data analysis on the past several years of DITP effluent trace contaminant results to update an informational report and to support a NPDES permit modification request. Preparing to bring in house testing for flounder, lobster, and mussel tissue samples starting in April 2009 for metals and inorganics in support of the Harbor and Outfall Monitoring program.

FOD/TRAC: Working with TRAC and MIS on the connection between the new LIMS and the new TRAC Pretreatment Information Management System or PIMS. Tested samples for seawater intrusion and grease tributary to the Squantum Pump Station.

FOD/Water Quality Assurance: Met with Field Operations and DEP to confirm details of MWRA's drinking water compliance program now that lab results are being reported electronically. Added three Chicopee Valley Aqueduct process control locations to the Total Coliform Rule/Surface Water Treatment Rule routine reporting. Received ~450 of 600 samples expected for the semi-annual lead and copper testing round. Provided same-day testing for quarterly corrosion control compliance.

Outside Customers: Working with Charles River Watershed Association on a request to make changes to its monitoring project.

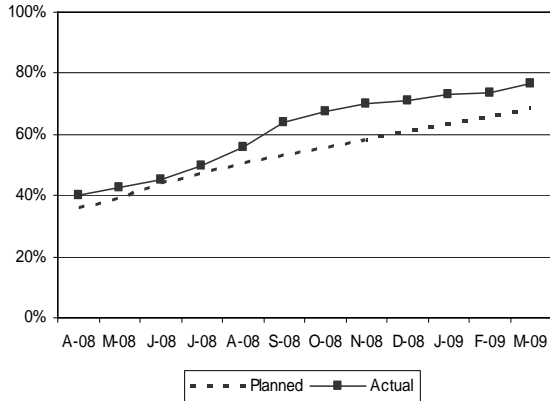
CONSTRUCTION PROGRAMS

Projects in Construction - 1

March 2009

(Progress Percentages based on Construction Expenditures)

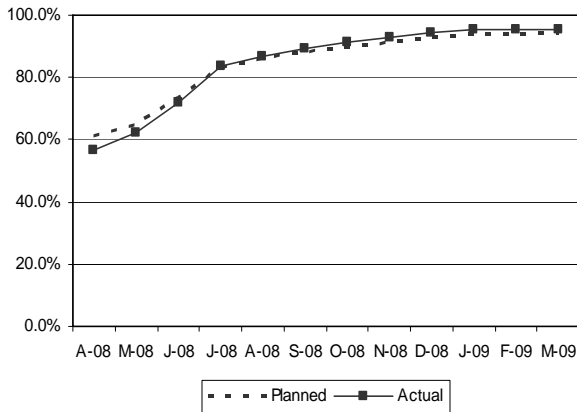
Blue Hills Covered Storage Design Build Project
Progress - March 2009



Project Summary: This project includes a 20 million gallon covered storage facility at the Blue Hills Reservation, providing sufficient distribution storage to the communities of MWRA's Southern High Storage Area.

Status and Issues: During March, the contractor reached 80% completion on placing rebar roof topping slabs on Tanks 1 & 2. The contractor continued installing the HVAC and electrical systems in the valve vault and continued backfilling at the dam core wall footings and placing rip rap at the dam core wall. During the summer and fall of 2008, the contractor expedited concrete work due to good weather and moved ahead of schedule on the fabrication and installation of precast columns, beams and planks for the tank roofs.

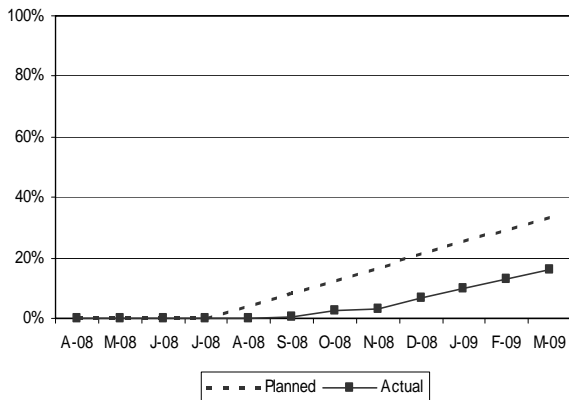
North Dorchester Bay CSO Tunnel/Shafts
Progress - March 2009



Project Summary: Construction of 10,872 LF of 17-ft diameter segment lined storage tunnel with 7 diversion structure/drop shafts and associated sewer and drainage separation pipework.

Status and Issues: During March, at the Conley maintenance access structure, the contractor continued punch list work along with consolidation and demobilization of the tunnel staging area. At CSO-081, -082 & -084 the contractor performed pre-checkout and testing activities with final restoration planned for May 22nd. At -084 the contractor continued final restoration work and coordinated NStar re-installation of street lights. At -085, -086 & -087, rework continued on the hydraulic control vault. At the -087 the contractor completed construction of the maintenance access structure.

East Boston Branch Relief Sewer
Progress - March 2009



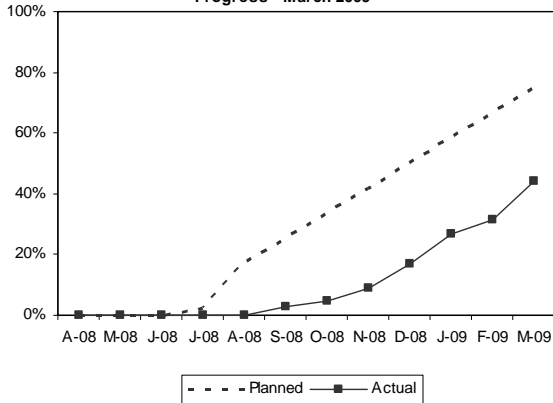
Project Summary: Construction of 14,500 feet of replacement sewers primarily by microtunneling.

Status and Issues: The contractor continued support of excavation at Receiving Shaft (RS) - 9A and Jacking Shaft (JS) - 3A & -8A. The concrete base slabs have been placed at RS-3A & -6A and JS-4A, -5A, -6A, & -7A. Preparations to receive the MTBM continued at RS-6A and JS-7A. Microtunneling was launched on March 31 at JS-6A. Utility coordination meetings continue with Conoco Phillips, NGRID, NSTAR, MBTA, Verizon, Comcast and BWSC. Work continued on compiling pre-construction photos and video recordings and on the installation of observation wells and inclinometers. The contractor continued support of utilities outside of the excavation zone at JS-8A and structural assessment of the retaining wall at 369 Border Street.

Projects In Construction – 2 March 2009

(Progress Percentages based on Construction Expenditures)

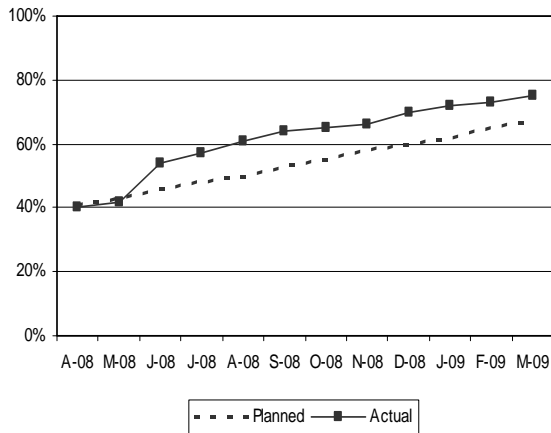
Cottage Farm/Brookline Connection and Inflow Controls
Progress - March 2009



Project Summary: Construction will activate the existing 54" Brookline Connection, modify and build an interconnection between two existing overflow chambers, replace sluice gates, and provide remote monitoring of flows to optimize the operation of the Cottage Farm CSO.

Status and Issues: During March the contractor continued demolition at the Soldiers Field Road site, installed connection pipe in the pipe trench, poured the cover slab for the South Charles Relief Sewer (SCRS) junction chamber and existing SCRS risers were demolished and new ones installed. The project is behind schedule for several reasons. The approval process for the dewatering plant submittals and dewatering permits took longer than the contractor expected. Delays continued as the contractor was slow start to excavation, experienced a number of equipment breakdowns and now faces excavation during winter conditions. The construction team believes there is adequate time remaining in the schedule to achieve the Federal Court Order work under Milestone 1, which is June 30, 2009. Milestone 1 is all construction except site restoration and plantings.

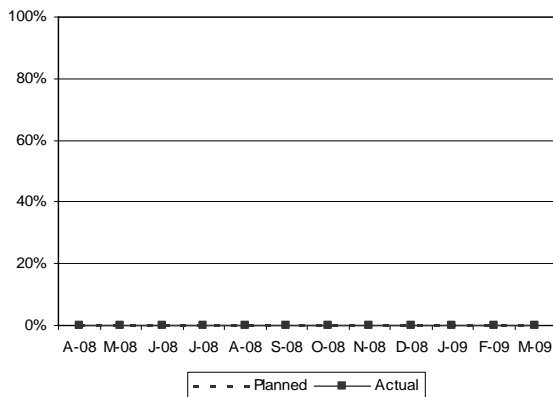
Rehabilitation of Water Pumping Stations
Progress - March 2009



Project Summary: This work provides rehabilitation of a series of water pump stations. At the present time, Brattle Court and Hyde Park are the focus of work.

Status and Issues: At Brattle Court, the contractor worked on screening materials for backfill and on the installation of acoustical panels in the pump room. At Hyde Park, the contractor successfully completed 250PSI pressure testing discharge sections 41 and 93. All testing caps were moved and solid sleeves were installed. Both sections were filled and will be disinfected in April. New generator exhaust piping and supports were installed. At Belmont the contractor began work on miscellaneous punch list items and complete disinfection of the domestic water lines. At Spring Street the contractor completed installation of the new blow-off manhole, pump 4 engine drive was delivered and NStar delivered and installed the new transformer.

Hultman Aqueduct Interconnections Project
Progress - March 2009



Project Summary: This project includes rehabilitation construction to the Hultman Aqueduct to provide redundancy to the MetroWest Tunnel from Southborough to Weston by adding five new MetroWest/Hultman interconnections, two surge relief structures, 13.5 miles of internal rehabilitation and 15 miles of external access work.

Status and Issues: Revised specifications were approved by procurement in March and advertisement is scheduled for the beginning of April. Contract award is anticipated in June. This will be a four year construction contract with a latest engineering estimate of \$52.7 million.

CSO CONTROL PROGRAM

3rd Quarter FY09

22 of the 35 projects in MWRA's Long-Term CSO Control Plan are complete. No project was scheduled to be completed in 3rd Quarter FY09. 7 projects are in construction or have early contracts completed, and 5 additional projects are in design. MWRA plans to commence the one remaining project by July 2011.

| Project | Court Milestones in Schedule Seven (Shaded milestones are met.) | | | Status | |
|--|--|-----------------------|-----------------------|--|---|
| | Commence Design | Commence Construction | Complete Construction | | |
| North Dorchester Bay Storage Tunnel and Related Facilities | Aug 97 | Aug 06 | May 11 | <u>Tunnel construction</u> : tunnel and retrieval shaft complete; work continues on lining and capping mining shaft and on CSO and stormwater diversion structures and related piping. <u>Dewatering Pump Station construction</u> : contract awarded at 4/15/09 Board meeting for \$25.9 million. <u>Ventilation Facility design</u> : final design of below-ground ventilation facility is underway. | |
| East Boston Branch Sewer Relief | Mar 00 | Mar 03 | Jun 10 | Contract 1 (interceptor relining) completed 2004. Contract 2 (micro-tunneling) is approx. 20% complete by cost; delays due to utility conflicts and shaft changes are expected to be offset; micro-tunnel boring machine launched on 3/31/09. Contract 3 (pipe-bursting) awarded at 4/15/09 Board meeting for \$7.3 million. | |
| | Jun 06 | Jun 08 | | | |
| Cottage Farm Brookline Connection and Inflow Controls | Sep 06 | Jun 08 | Jun 09 | Construction underway toward substantial completion by 6/30/09. Interconnection of overflow chambers on Cambridge side of Charles River and all work on Boston side are complete. | |
| Charles River Interceptor Gate Controls and Additional Connections | Jan 08 | Jan 10 | Jan 11 | Hydraulic study and design commenced 1/31/08; report evaluating additional interceptor connections submitted to EPA and DEP on 1/31/09, in compliance with Schedule Seven. Draft preliminary design report submitted on 2/11/09. Design continues. | |
| South Dorchester Bay Sewer Separation | Jun 96 | Apr 99 | Nov 08 | Sewer separation contracts completed 12/06; CSO outfalls confirmed closed 10/07; MWRA decommissioned Fox Point and Commercial Point CSO facilities 11/07; BWSC continues to perform stormwater inflow removal to meet sewer system hydraulic performance criteria. | |
| Morrissey Boulevard Storm Drain | Jun 05 | Dec 06 | Jun 09 | BWSC construction underway toward 6/30/09 substantial completion. | |
| Reserved Channel Sewer Separation | Jul 06 | May 09 | Dec 15 | BWSC final design underway; BWSC awarded first of nine construction contracts on 3/19/09 for \$6.9 million (\$5.9 million MWRA-eligible); remaining contracts in final design; second contract to be advertised 11/09. | |
| Bulfinch Triangle Sewer Separation | Nov 06 | Nov 08 | Jul 13 | BWSC commenced construction contract 9/25/08; progress on schedule. | |
| Brookline Sewer Separation | Nov 06 | Nov 08 | Jul 13 | Brookline commenced first of two construction contracts on 11/21/08; second contract to be advertised 10/09. | |
| Cambridge/ Alewife Brook Sewer Separation | CAM004 Outfall and Detention Basin | | Jul 08* | Jul 09* | Cambridge resumed design 10/08 after 27-month delay due to wetlands permit appeals. Design progress is on schedule. |
| | CAM004 Sewer Separation | Jan 97 | Jul 98 Jul 09* | Jan 13* | Cambridge plans to resume design in the summer of 2009. |
| | CAM400 Manhole Separation | Jul 06* | Jul 07* | Jul 08* | Cambridge commenced design 10/08. Design progress is on schedule. |
| | Interceptor Connection Relief/Floatables | Jul 06* | Jan 08* | Dec 08* | Cambridge commenced design 10/08. Design progress is on schedule. |
| | MWR003 Gate and Rindge Ave. Siphon | Apr 09* | Nov 10* | Jan 12* | MWRA plans to commence design in 2011. |

* MWRA and City of Cambridge are unable to meet certain court milestones for the Alewife Brook project due to 27-month delay caused by wetlands permit appeals (now substantially resolved).

CIP Expenditures March 2009

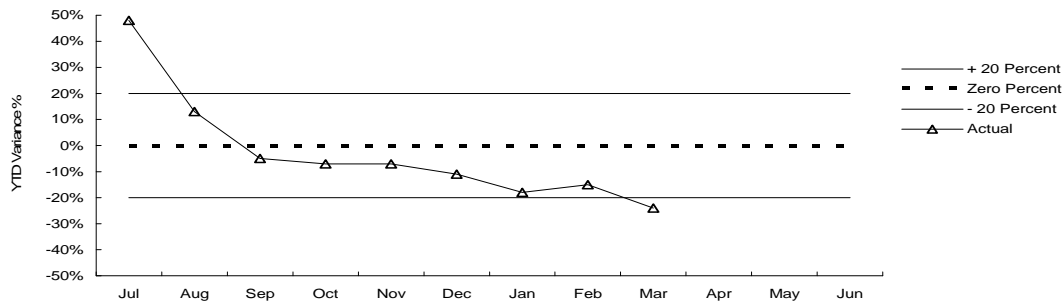
Accurate projections of CIP spending are one measure of effective project management and are important to ensuring that funds are available to support MWRA's capital program.

| FY09 Capital Improvement Program Expenditure Variances through March by Program (\$000) | | | | |
|---|------------------------------|------------------------------|--------------------|---------------------|
| Program | FY09 Budget Through March | FY09 Actual Through March | Variance Amount | Variance Percent |
| Wastewater | 118,850 | 91,492 | (27,358) | -23% |
| Waterworks | 50,532 | 38,798 | (11,733) | -23% |
| Business and Operations Support | 7,162 | 3,611 | (3,551) | -50% |
| Total | \$176,543 | \$133,901 | (\$42,642) | -24% |

Underspending within Wastewater is primarily attributable to awards being less than budget and delays in start-up of the East Boston Branch Sewer Relief contract and Heat Loop Pipe Replacement and Primary & Secondary Clarifier Rehabilitation contracts. Also, scheduled reimbursements for Reserved Channel and Brookline Construction sewer separation projects and Construction Services and Resident Inspection for Morrissey Boulevard were less than anticipated. North Dorchester CSO Tunnel underruns and unused allowances also contributed to this underspending. This was partially offset by accelerated progress on Electrical Equipment Upgrade Construction 3 and community requests for loans and grants being more than anticipated. Underspending in Waterworks is primarily due to a revised schedule for the Hultman Rehabilitation contract (CP6A), Closed Loop Cooling System at John J Carroll Water Treatment Plant, and delay in award of Section 97A due to permitting issues. Also, community requests for loans were less than anticipated. This underspending was partially offset by contractor progress on the Blue Hills Covered Storage project.

CIP Expenditure Variance

Total FY09 CIP Budget of \$230,022,000.



Construction Fund Management

All payments to support the capital program are made from the Construction Fund. Sources of fund revenues 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 3/28/09 | \$225 million |
| Unused capacity under the debt cap: | \$586 million |
| Estimated date for exhausting construction fund without new borrowing: | May-10 |
| Estimated date for debt cap increase to support new borrowing: | FY2011 |
| Commercial paper outstanding: | \$194 million |
| Commercial paper capacity: | \$350 million |
| Budgeted FY09 capital spending*: | \$206 million |
| Projected FY09 grant and SRF receipt: | \$103 million |

* Cash based spending is discounted for construction retainage.

DRINKING WATER QUALITY AND SUPPLY

Source Water – Microbial Results

3rd Quarter - FY09

Background

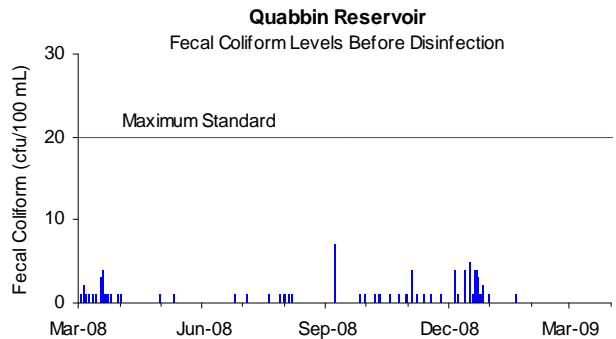
Total coliform bacteria are monitored in both source and treated water to provide an indication of overall bacteriological activity. Most coliforms are harmless. However, fecal coliform, a subclass of the coliform group, are identified by their growth at temperatures comparable to those in the intestinal 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 entering the CVA system.

DCR's bird harassment program to move the birds away from the intake area ended for the season when the reservoir froze over January 16, 2009.

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

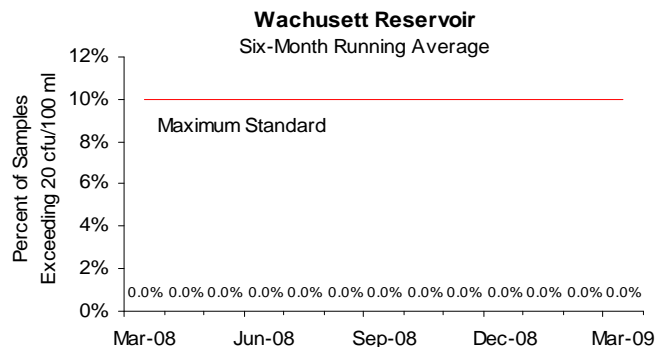
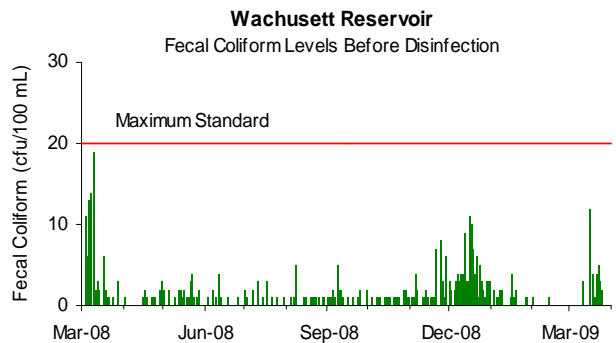


Sample Site: Wachusett Reservoir

Wachusett Reservoir water is sampled at the CWTP raw water tap in Marlborough before it enters the MetroWest/Metropolitan Boston systems.

DCR's bird harassment program to move the birds away from the intake area ended for the season when the reservoir froze over January 8, 2009.

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



Source Water – Turbidity

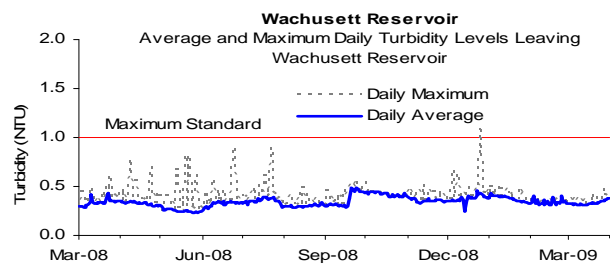
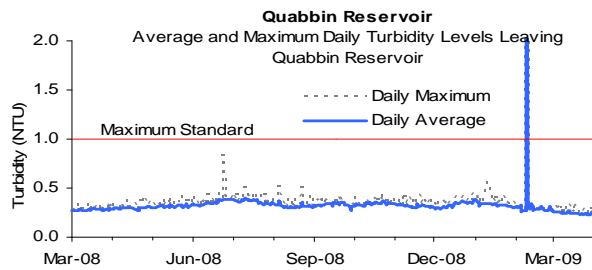
3rd Quarter - FY09

Background

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 chlorine demand or may protect bacteria from the disinfectant effects of chlorine, thereby interfering with the disinfectant residual throughout the distribution system.

Turbidity of Quabbin Reservoir water is monitored continuously using on-line analyzers at the Ware Disinfection Facility before chlorination. Turbidity of Wachusett Reservoir is monitored continuously at the Carroll Water Treatment Plant before ozonation. The Massachusetts Department of Environmental Protection (DEP) standard for source water turbidity for unfiltered water supply systems is a maximum of 1.0 NTU; EPA's standard is a maximum of 5.0 NTU. Maximum turbidity results at Wachusett were within DEP standards for the quarter. Maximum turbidity results at Quabbin were within DEP standards for January and March.

•A valve operation at the Winsor Power Station stirred up pipe sediment and caused Quabbin Reservoir water being delivered to the Ware Disinfection Facility to exceed DEP's standard on February 9; maximum turbidity reached 4.92 NTU. Turbidity levels were above 1 NTU for a duration of 45 minutes. The chlorine dose was temporarily raised during this event from 1.3 mg/L to 1.9 mg/L. Required disinfection levels as measured by CT were met at all times. Daily total coliform results downstream were coliform free and required disinfection residuals were maintained. Therefore, as there was no disruption of treatment effectiveness, no violation occurred.

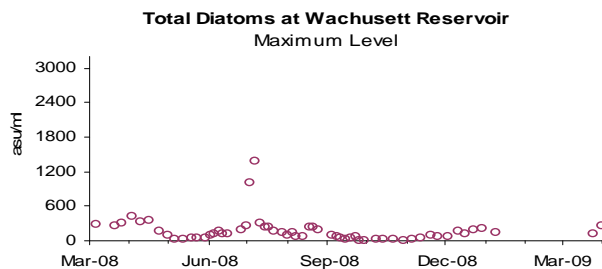
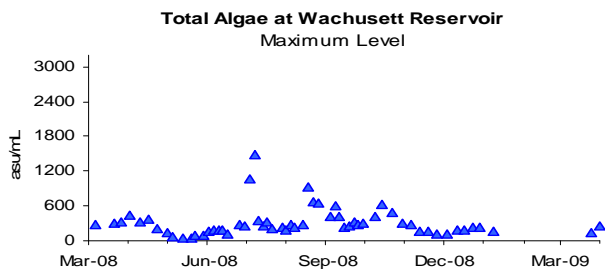


Source Water – Algae

Algal 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 algicide. During winter and spring, diatom numbers may increase. While not a taste and odor concern, consumers using filters may notice a more frequent need to change the filters. Diatom levels are currently low.

March 25 was the official "ice out" date for the Wachusett Reservoir. The reservoir had been frozen over at the Cosgrove Intake area from January 8 to March 25 and the last sampling that the DCR performed was on January 8. Algae sampling has resumed with low densities of diatoms.



Treated Water – Disinfection Effectiveness

3rd Quarter - FY09

Background

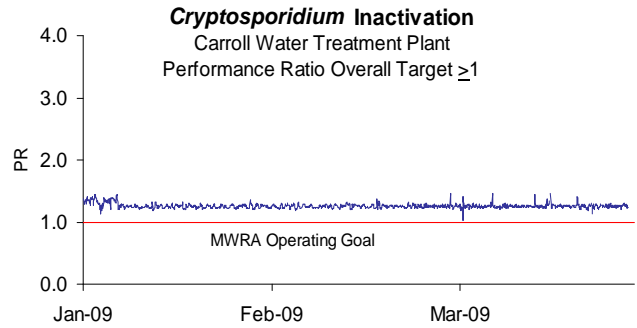
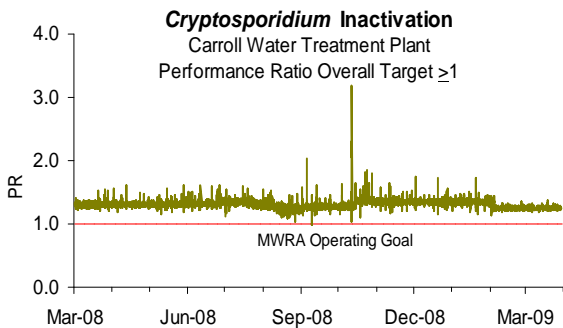
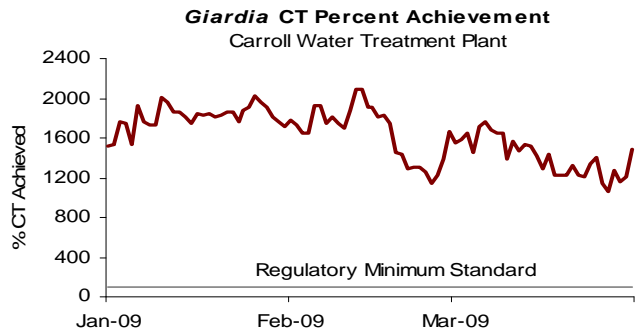
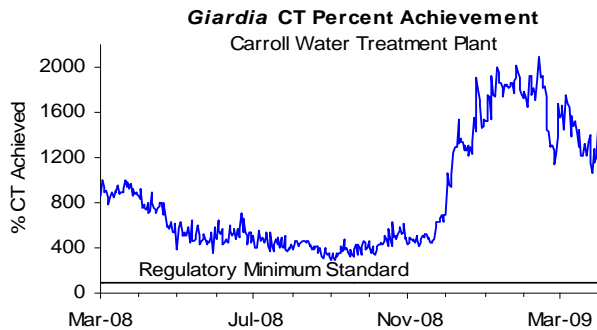
With the activation of the Carroll Water Treatment Plant (CWTP), MWRA now reports on both regulatory required 99.9% inactivation for *Giardia* (reported as “CT”), and its voluntary operating goal of 99% inactivation for *Cryptosporidium* (reported as “PR”). MWRA calculates hourly CT inactivation rates 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:

- CT was maintained above 100% at all times the plant was providing water into the distribution system this quarter; PR was maintained above 1.

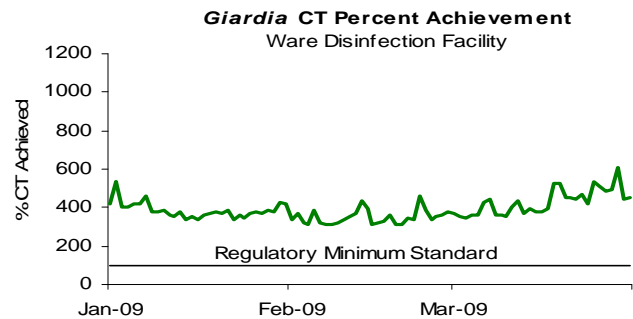
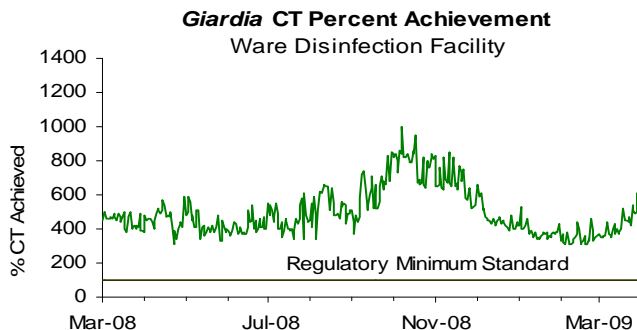
- Ozone dose at the CWTP varied between 2.8 to 4.5 mg/L for the quarter.

- On 3/10, 3/18 and 3/25 there were planned shutdowns (lasting in durations of ~1.5 hours up to 4 hours) to support contractor work on the new ozone generator closed-loop cooling system. While the treatment plant was off-line, communities were fed from distribution storage tanks; there were no effects on service.



Quabbin Reservoir at Ware Disinfection Facility (CVA Supply):

Chlorine dose remained at 1.3 mg/L. CT was met each day this quarter, as well as every day for the last fiscal year.

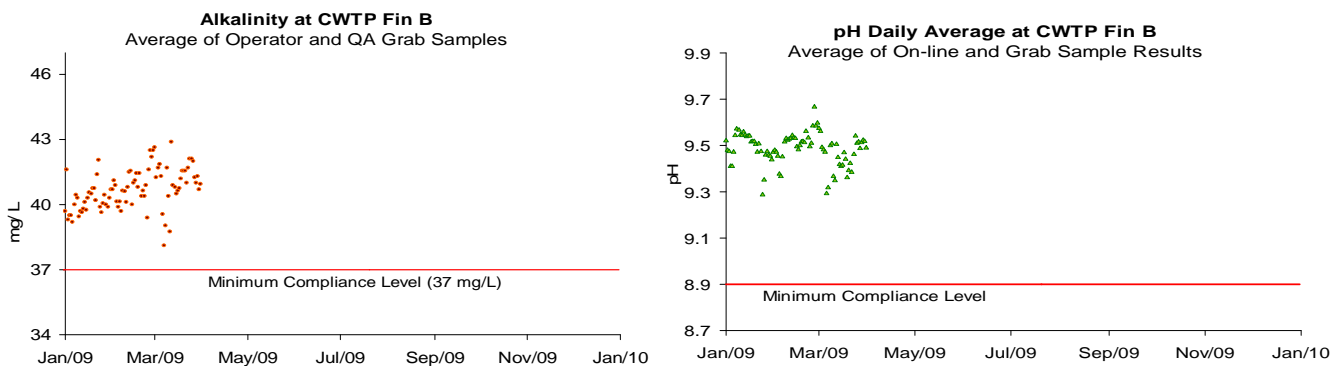


Treated Water – pH and Alkalinity Compliance

3rd Quarter - FY09

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's target for distribution system pH is 9.3; the target for alkalinity is 40 mg/l. Recognizing the effectiveness of MWRA's treatment targets, DEP changed the minimum compliance level upwards by 0.2 units on August 25, 2008; this was initiated September 2008. Per DEP requirements, samples from the CWTP's Fin B tap 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 this level for more than nine days in a six-month period. MWRA tests finished water pH and alkalinity daily at the CWTP Fin B sampling tap. Distribution system samples are collected in March, June, September, and December.

Results for January 2009 are from CWTP Fin A instead of CWTP Fin B due to Train B's being taken off-line on December 29, 2008 for half-plant operation during planned maintenance. Distribution system samples were collected on March 23, 2009; sample pH ranged from 9.2 to 9.5 and alkalinity ranged from 42 to 43 mg/L. No sample results were below DEP limits for this quarter.



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

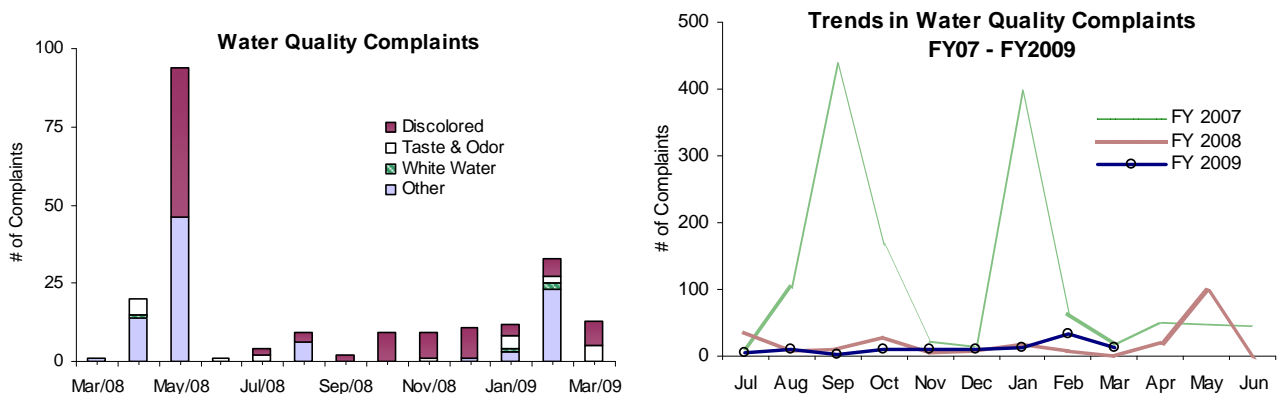
Background

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.

Outcome

Communities reported 58 complaints during the quarter, compared to 28 complaints for the 3rd Quarter of FY08. Of these complaints, 18 were for "discolored water"; 11 were for "taste and odor"; 3 were for "white water"; and 26 were "other". Local main breaks, one in Revere and two in Somerville, were a primary source of the complaints.



Bacteria & Chlorine Residual Results for Communities in MWRA Testing Program

3rd Quarter - FY09

While all communities collect bacteria samples for the Total Coliform Rule (TCR), 40 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. The other 10 MWRA customer communities (including Lynn's GE plant) have their samples tested elsewhere and these towns should be contacted directly for their monthly results.

There are 140 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. Additional testing is conducted immediately and joint corrective action by DEP, MWRA, and the community is undertaken. 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 3rd Quarter, one of the 5,436 community samples (0.02% system-wide) submitted to MWRA labs for analysis tested positive for coliform (Newton, February). None of the 1,891 (0.00%) MWRA samples tested positive for total coliform. No sample tested positive for *E.coli*. All 40 systems that submitted chlorine residual data maintained an average disinfectant residual of at least 0.2 mg/L. Only 2.1% of samples had any results with a disinfectant residual lower than 0.2 mg/L for the quarter.

| TCR results by Community | | | | | | |
|-------------------------------------|---------------------------------|-------------------------------|-------------------|-------------------------------|----------------------------------|----------------------------------|
| Town | Samples Tested for Coliform (a) | Total Coliform # (%) Positive | E.coli % Positive | Public Notification Required? | Minimum Chlorine Residual (mg/L) | Average Chlorine Residual (mg/L) |
| ARLINGTON | 164 | 0 (0%) | 0.0% | | 0.03 | 1.71 |
| BELMONT | 104 | 0 (0%) | 0.0% | | 0.62 | 1.92 |
| BOSTON | 714 | 0 (0%) | 0.0% | | 1.38 | 2.03 |
| BROOKLINE | 221 | 0 (0%) | 0.0% | | 1.31 | 2.00 |
| CHELSEA | 131 | 0 (0%) | 0.0% | | 0.20 | 1.89 |
| DEER ISLAND | 52 | 0 (0%) | 0.0% | | 1.77 | 2.06 |
| EVERETT | 130 | 0 (0%) | 0.0% | | 1.01 | 1.11 |
| FRAMINGHAM | 216 | 0 (0%) | 0.0% | | 0.30 | 2.02 |
| HANSCOM AFB (Bedford) (b) | 27 | 0 (0%) | 0.0% | | 0.03 | 1.47 |
| LEXINGTON | 108 | 0 (0%) | 0.0% | | 0.28 | 2.06 |
| LYNNFIELD | 18 | 0 (0%) | 0.0% | | 0.87 | 1.51 |
| MALDEN | 195 | 0 (0%) | 0.0% | | 1.20 | 1.27 |
| MARBLEHEAD | 72 | 0 (0%) | 0.0% | | 0.21 | 1.71 |
| MARLBOROUGH (b) | 156 | 0 (0%) | 0.0% | | 0.03 | 1.74 |
| MEDFORD | 219 | 0 (0%) | 0.0% | | 0.19 | 1.93 |
| MELROSE | 117 | 0 (0%) | 0.0% | | 0.02 | 0.84 |
| MILTON | 96 | 0 (0%) | 0.0% | | 1.24 | 1.73 |
| NAHANT | 30 | 0 (0%) | 0.0% | | 0.04 | 1.44 |
| NEEDHAM (b) | 123 | 0 (0%) | 0.0% | | 0.03 | 0.33 |
| NEWTON | 281 | 1 (0.36%) | 0.0% | No | 0.55 | 1.87 |
| NORTHBOROUGH | 48 | 0 (0%) | 0.0% | | 0.10 | 1.83 |
| NORWOOD | 108 | 0 (0%) | 0.0% | | 0.03 | 1.66 |
| QUINCY | 291 | 0 (0%) | 0.0% | | 0.46 | 1.95 |
| READING | 129 | 0 (0%) | 0.0% | | 1.04 | 1.90 |
| REVERE | 156 | 0 (0%) | 0.0% | | 1.11 | 1.91 |
| SAUGUS | 105 | 0 (0%) | 0.0% | | 1.70 | 1.96 |
| SOMERVILLE | 247 | 0 (0%) | 0.0% | | 0.00 | 1.92 |
| SOUTH HADLEY FD1 (c) | 48 | 0 (0%) | 0.0% | | 0.41 | 0.03 |
| SOUTHBOROUGH | 30 | 0 (0%) | 0.0% | | 0.19 | 1.52 |
| STONEHAM | 84 | 0 (0%) | 0.0% | | 1.10 | 1.87 |
| SWAMPSCOTT | 54 | 0 (0%) | 0.0% | | 0.72 | 1.76 |
| WAKEFIELD (b) | 132 | 0 (0%) | 0.0% | | 0.48 | 1.55 |
| WALTHAM | 216 | 0 (0%) | 0.0% | | 0.16 | 2.02 |
| WATERTOWN | 120 | 0 (0%) | 0.0% | | 0.56 | 1.95 |
| WELLESLEY (b) | 108 | 0 (0%) | 0.0% | | 0.05 | 0.60 |
| WESTBORO HOSPITAL | 16 | 0 (0%) | 0.0% | | 1.50 | 2.08 |
| WESTON | 48 | 0 (0%) | 0.0% | | 0.48 | 1.81 |
| WINCHESTER (b) | 65 | 0 (0%) | 0.0% | | 0.15 | 0.83 |
| WINTHROP | 76 | 0 (0%) | 0.0% | | 0.19 | 1.70 |
| WOBBURN (b) | 181 | 0 (0%) | 0.0% | | 0.02 | 0.68 |
| Total: | 5436 | 1 (0.02%) | | | | |
| MASS. WATER RESOURCES AUTHORITY (d) | 1891 | 0 (0%) | 0.0% | | 0.02 | 1.82 |

(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 sampling program includes a subset of community TCR sites as well as sites along the transmission system, tanks and pumping stations. Some MWRA TCR sites which are entry points to the community had low chlorine residuals due to various reasons.

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

3rd Quarter - FY09

Background

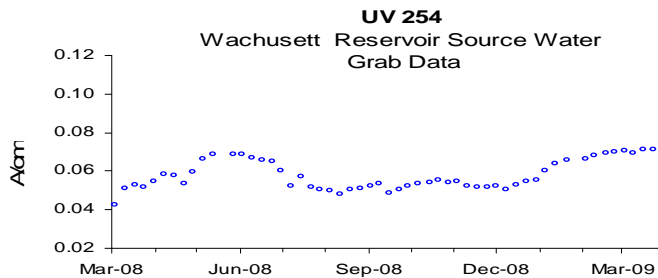
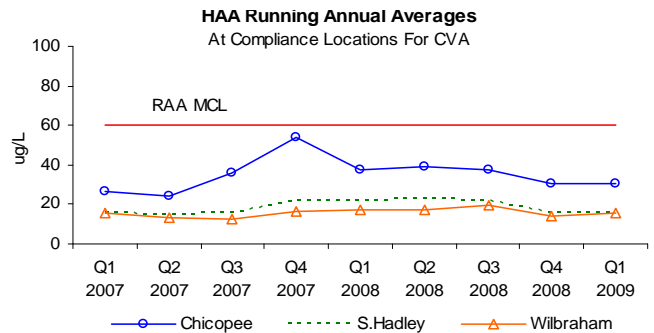
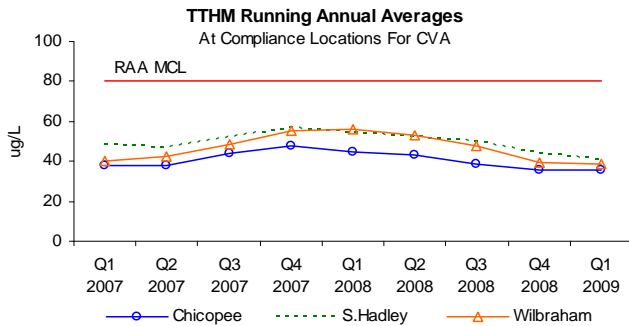
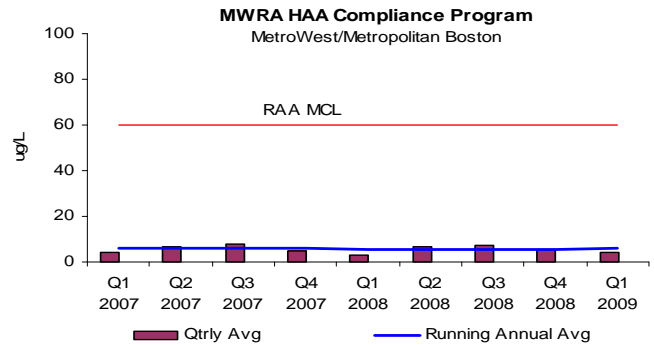
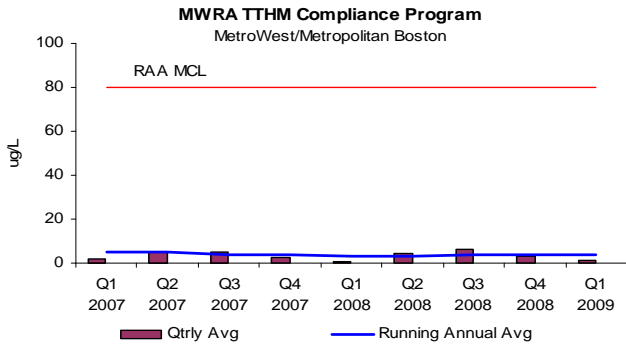
Total Trihalomethanes (TTHMs) and Haloacetic Acids (HAA5s) are by-products of disinfection treatment with chlorine. TTHMs and HAA5s are of concern due to their potential adverse health effects at high levels. EPA's running annual average (RAA) standard is 80 ug/L for TTHMs and 60 ug/L for HAA5s. The switch from chlorine to ozone for primary disinfection and the consolidation of treatment has lowered DBP formation and results are now more uniform. DEP requires that compliance samples be collected quarterly. Partially served communities are responsible for their own compliance monitoring and reporting and must be contacted directly for their results.

Absorbance, measured as UV-254, is a surrogate measure of reactive organic matter. Regulated DBPs have dropped to very low levels with the CWTP coming on-line. However, UV-254 levels remain useful for estimating ozone dosage and serving as a trigger for Quabbin transfer consideration.

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.

Outcome

The RAA for TTHMs and HAA5s for MWRA's Compliance Program (represented as the line in the top two graphs below) remained below current standards. TTHM levels at all sampling locations for the MetroWest/Metropolitan Boston communities have declined dramatically since August 2005 following activation of the CWTP. The RAA for TTHMs = 3.7 ug/L; HAA5s = 6.0 ug/L. CVA's DBP levels continue to be below current standards. UV-254 levels are currently around 0.07 A/cm. The current RAA for Bromate = 0.0 ug/L.



Water Supply and Source Water Management

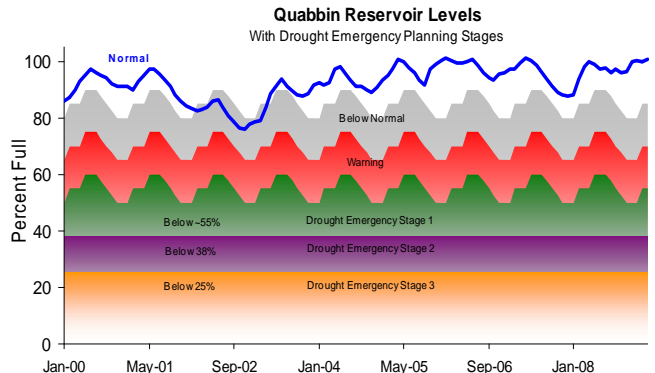
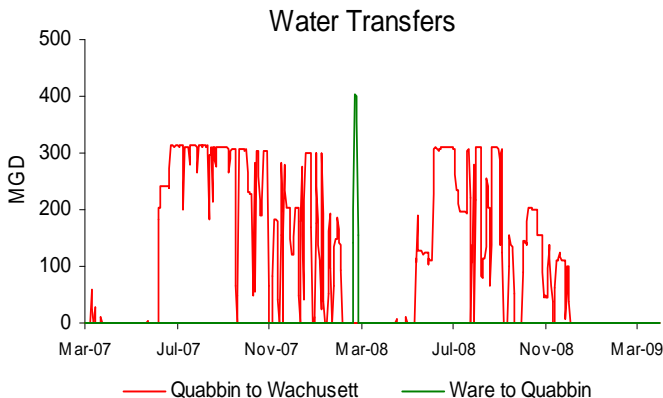
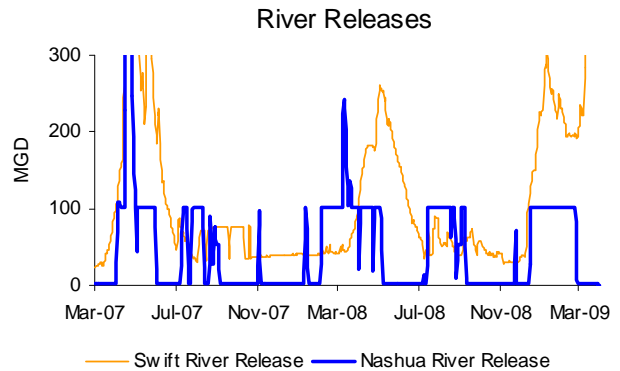
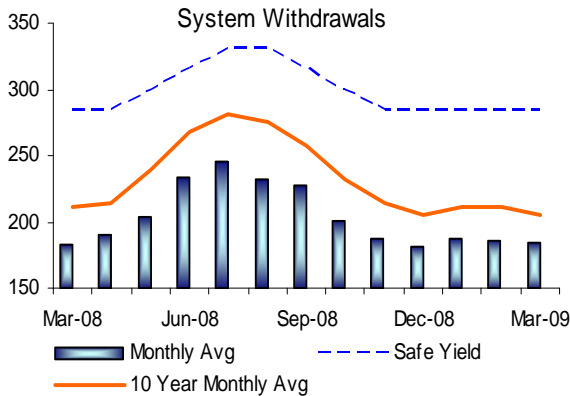
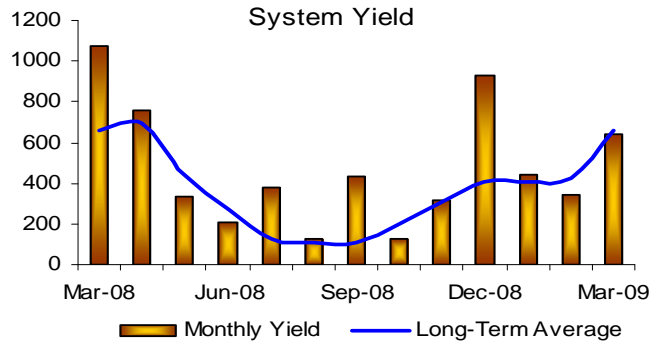
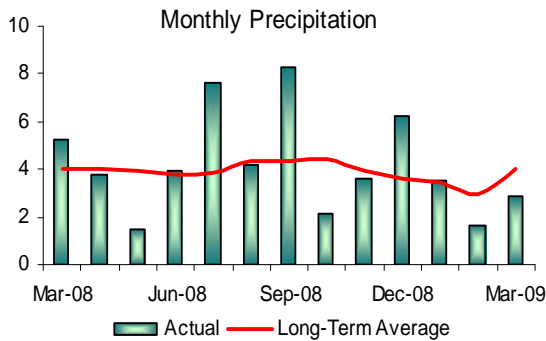
3rd Quarter - FY09

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.

Outcome

Quabbin Reservoir level is above the normal operating range for this period of the year. Quabbin Reservoir was at 100.7% of capacity as of March 31, 2009, 2.8% higher than the same time last year. This is an increase of more than 11.5 billion gallons of storage. Precipitation and system withdrawals were below average for the quarter.



WASTEWATER QUALITY

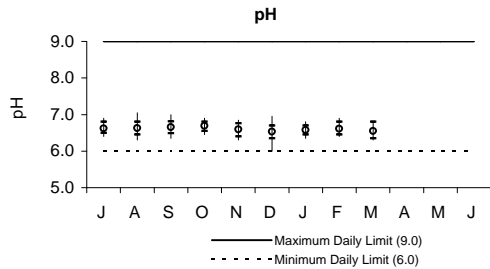
NPDES Permit Compliance: Deer Island Treatment Plant

3rd Quarter - FY09

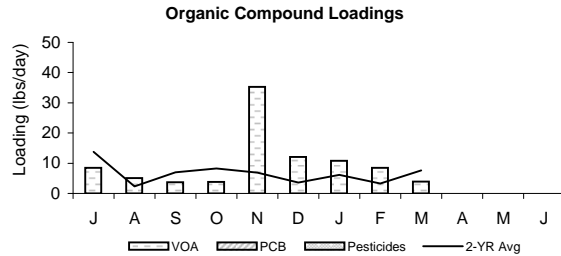
NPDES Permit Limits

| Effluent Characteristics | | Units | Limits | January | February | March | 3rd Quarter Violations | FY09 YTD Violations |
|--------------------------|----------------------------|-----------|----------|------------|----------|---------|------------------------|---------------------|
| Dry Day Flow: | | mgd | 436 | 317.3 | 313.2 | 308.3 | 0 | 0 |
| cBOD: | Monthly Average | mg/L | 25 | 6.1 | 7.4 | 6.7 | 0 | 0 |
| | Weekly Average | mg/L | 40 | 7.6 | 8.5 | 9.5 | 0 | 0 |
| TSS: | Monthly Average | mg/L | 30 | 6.6 | 13.8 | 14.0 | 0 | 0 |
| | Weekly Average | mg/L | 45 | 8.5 | 16.2 | 23.7 | 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 | 12.6 | 33.2 | 18.7 | 0 | 0 |
| | Weekly Geometric Mean | col/100mL | 14000 | 7.2 | 8.2 | 9.0 | 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 | 6.4-6.8 | 6.4-6.9 | 6.3-6.8 | 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 | 86 | 71 | >100 | 0 | 0 |
| Chronic Toxicity: | Sea Urchin | % | 1.5 | 100 | 50 | 50 | 0 | 0 |
| | Inland Silverside | % | 1.5 | 50 | 50 | 50 | 0 | 0 |

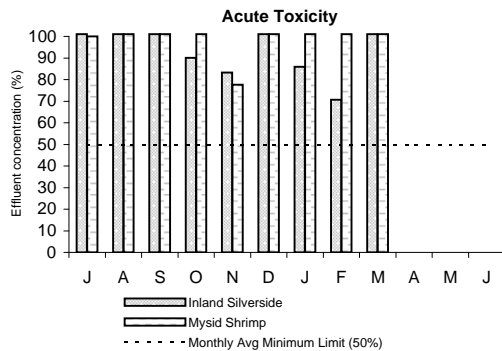
To date, there have been no permit violations at the Deer Island Treatment Plant in FY09.



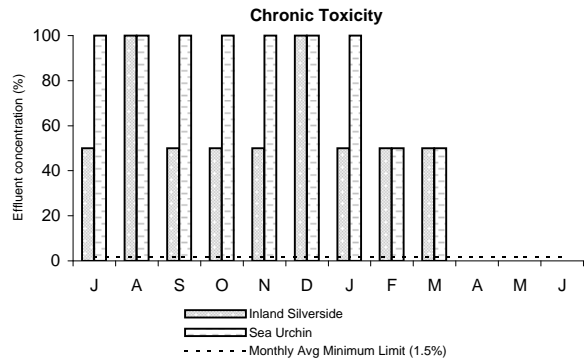
pH is a measure of the alkalinity or acidity of the effluent. Fluctuations in pH do not have an adverse effect on marine environments. Because of the pure oxygen used in the activated sludge reactor, the effluent pH tends to be at the lower pH range. pH measurements for the 3rd Quarter were within the daily limits.



An important wastewater component to be monitored in the effluent is organic compounds, including volatile organic acids, pesticides, and polychlorinated biphenyls. The secondary treatment process has significantly reduced organic compound loadings in the effluent stream.



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 3rd Quarter.



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, 1.5% of the effluent must show no observed effect on the growth and reproduction of the test species. Chronic toxicity permit limits were met for the 3rd Quarter.

NPDES Permit Compliance: Clinton Wastewater Treatment Plant

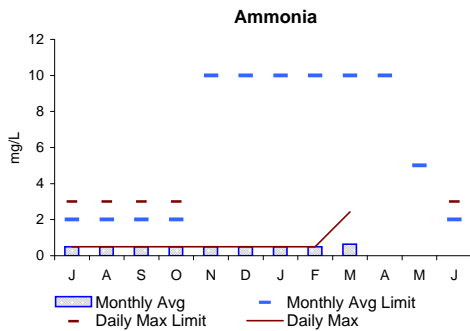
3rd Quarter - FY09

NPDES Permit Limits

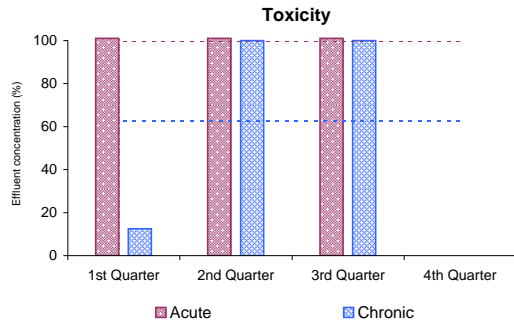
| Effluent Characteristics | | Units | Limits | January | February | March | 3rd Quarter Violations | FY09 YTD Violations |
|-----------------------------------|-------------------------|-----------|---------|---------|----------|---------|------------------------|---------------------|
| Flow: | | mgd | 3.01 | 3.39 | 3.28 | 3.13 | 3 | 7 |
| BOD: | Monthly Average: | mg/L | 20 | 4.8 | 6.7 | 6.3 | 0 | 0 |
| | Weekly Average: | mg/L | 20 | 6.0 | 7.8 | 7.5 | 0 | 0 |
| TSS: | Monthly Average: | mg/L | 20 | 4.6 | 6.9 | 6.9 | 0 | 0 |
| | Weekly Average: | mg/L | 20 | 5.7 | 8.2 | 7.0 | 0 | 0 |
| pH: | | SU | 6.5-8.3 | 7.2-7.6 | 7.0-7.7 | 6.7-7.7 | 0 | 0 |
| Dissolved Oxygen: | Daily Minimum: | mg/L | 6 | 10.0 | 9.9 | 9.5 | 0 | 0 |
| Fecal Coliform: | Daily Geometric Mean: | col/100mL | 400 | 8 | 5 | 5 | 0 | 0 |
| | Monthly Geometric Mean: | col/100mL | 200 | 2 | 2 | 2 | 0 | 0 |
| TCR: | Monthly Average: | ug/L | 50 | 0 | 0 | 0 | 0 | 0 |
| | Daily Maximum: | ug/L | 50 | 0 | 0 | 0 | 0 | 0 |
| Total Ammonia Nitrogen: 11/1-3/31 | | | | | | | | |
| | Monthly Average: | mg/L | 10.0 | 0.5 | 0.5 | 0.6 | 0 | 0 |
| | Daily Maximum: | mg/L | 35.2 | 0.5 | 0.5 | 2.4 | 0 | 0 |
| Copper: | Monthly Average: | ug/L | 20 | 6.8 | 12.8 | 5.6 | 0 | 0 |
| Phosphorus: May 1 - Oct 31 | | | | | | | | |
| | Monthly Average: | mg/L | 1.0 | N/A | N/A | N/A | 0 | 0 |
| Acute Toxicity: | Daily Minimum: | % | 100 | N/A | N/A | >100 | 0 | 0 |
| Chronic Toxicity: | Daily Minimum: | % | 62.5 | N/A | N/A | 100 | 0 | 1 |

The monthly average flow at the Clinton Plant during each month of the 3rd Quarter was 3.39 mgd, 3.28 mgd, and 3.13 mgd, respectively; the permit limit is 3.01 mgd.

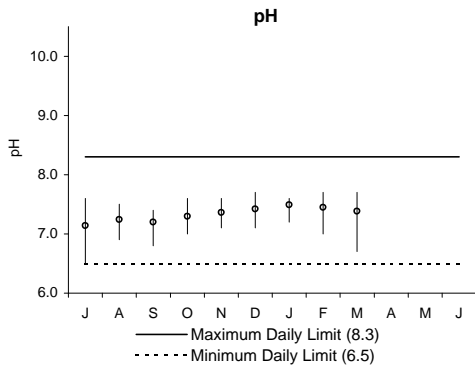
Toxicity testing is only conducted on a quarterly basis at the Clinton Plant.



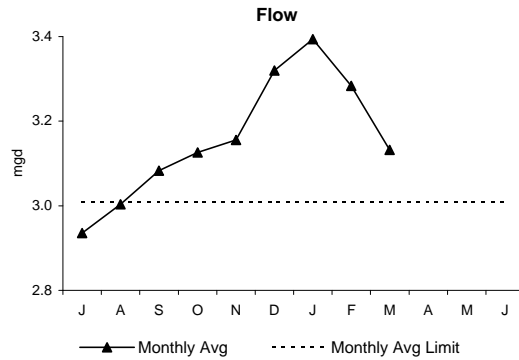
The 3rd Quarter monthly average and daily maximum concentrations were below the permit limits. The monthly average and daily maximum limits for the period of November 1 - March 31 are 10 mg/L and 35.2 mg/L, respectively. The permit limits are most stringent from June-October, when warm weather conditions 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. Acute toxicity limits were met during the 3rd Quarter.



pH is a measure of the alkalinity or acidity of the effluent. All daily pH results for the 3rd Quarter were within the range set by the permit.



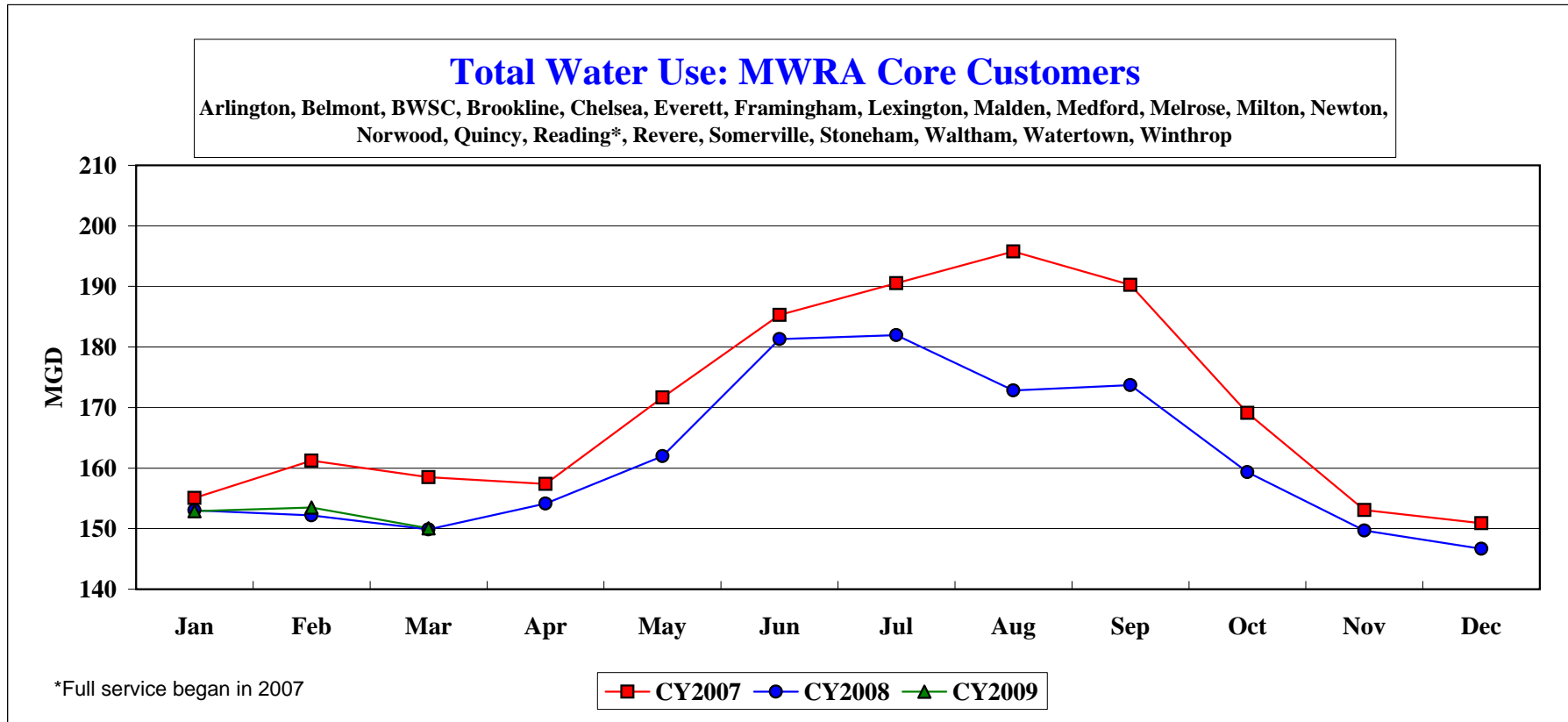
This graph depicts the average monthly flow, measured in million gallons per day, entering the plant. As mentioned above, the average monthly flows during the 3rd Quarter did not meet the permit limit. The flows during January, February, and March were 3.39 mgd, 3.28 mgd, and 3.13 mgd, respectively.

COMMUNITY FLOWS AND PROGRAMS

Total Water Use: MWRA Core Customer Communities

| MGD | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Average |
|---------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| CY2007 | 155.061 | 161.227 | 158.519 | 157.376 | 171.642 | 185.297 | 190.539 | 195.762 | 190.260 | 169.111 | 153.066 | 150.887 | 169.949 |
| CY2008 | 153.035 | 152.189 | 149.874 | 154.139 | 161.989 | 181.307 | 181.934 | 172.806 | 173.706 | 159.314 | 149.690 | 146.678 | 161.402 |
| CY2009 | 152.904 | 153.506 | 150.078 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 152.118 |

| MG | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Total |
|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| CY2007 | 4,806.893 | 4,514.365 | 4,914.084 | 4,721.268 | 5,320.891 | 5,558.920 | 5,906.704 | 6,068.612 | 5,707.813 | 5,242.433 | 4,591.980 | 4,677.497 | 62,031.459 |
| CY2008 | 4,744.091 | 4,413.477 | 4,646.087 | 4,624.185 | 5,021.664 | 5,439.220 | 5,639.940 | 5,356.984 | 5,211.188 | 4,938.739 | 4,490.700 | 4,547.005 | 59,073.281 |
| CY2009 | 4,740.030 | 4,298.161 | 4,652.405 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 13,690.595 |



How CY2009 Community Wastewater Flows Through Two Months Could Effect FY2011 Sewer Assessments ^{1,2}

The flow components of FY2011 sewer assessments will be allocated using a 3-year average of CY2007 to CY2009 wastewater flows compared to FY2010 assessments that used a 3-year average of CY2006 to CY2008 wastewater flows.

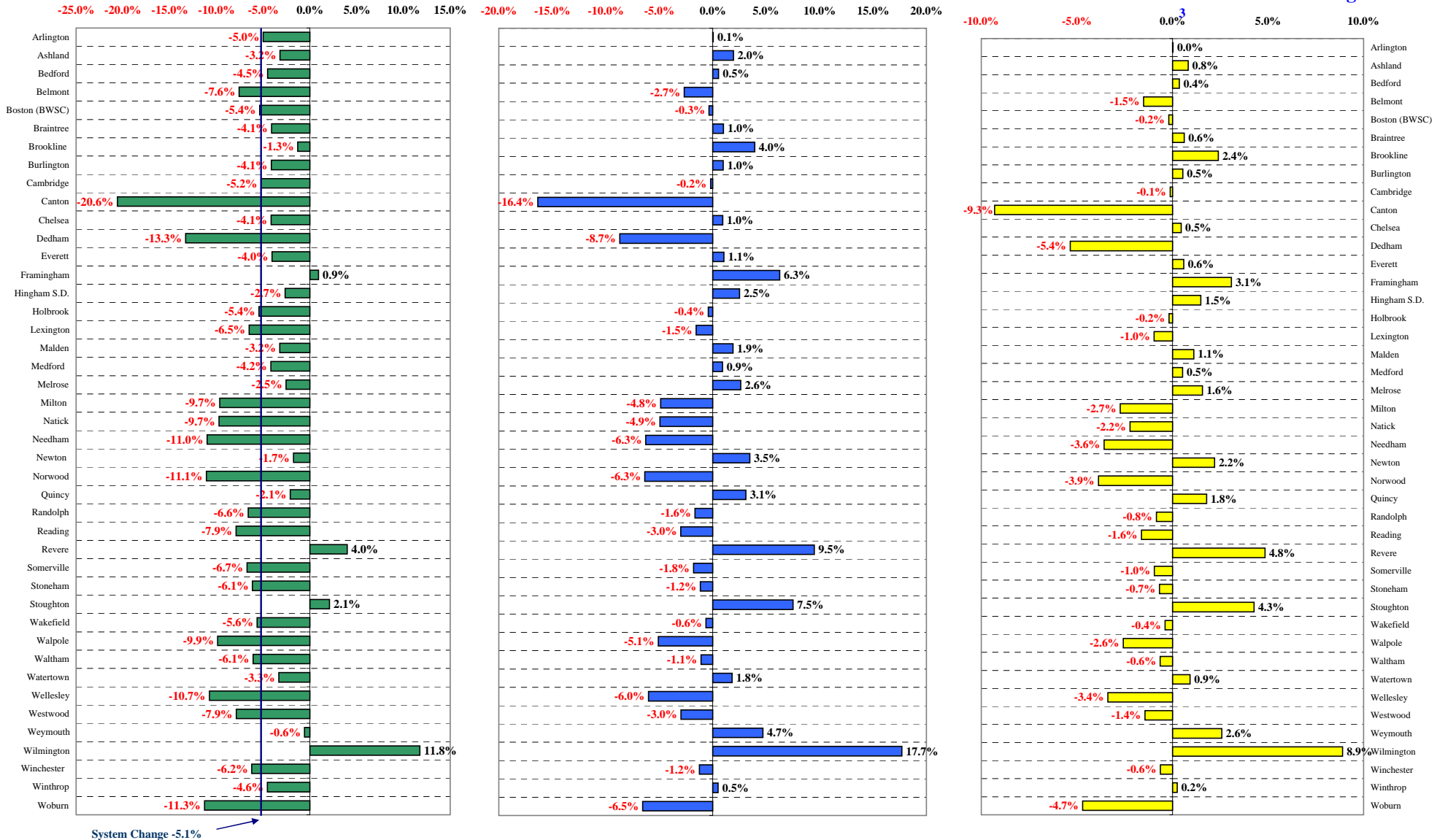
But as MWRA's sewer assessments are a ZERO-SUM calculation, a community's assessment is strongly influenced by the **RELATIVE** change in CY2007 to CY2009 flow share compared to CY2006 to CY2008 flow share, compared to all other communities in the system.

Change in flow shares are only a part of the assessment calculation as illustrated by the estimated impact of flow share changes on FY2011 sewer assessments.

Change in community absolute flow

Change in community flow share

Estimated variance from average system assessment as a result of flow share change



¹ MWRA uses a 3-year moving 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 CY2006 to CY2009 average wastewater flows as of 04/13/09. Flow data is preliminary and subject to change pending additional MWRA and community review.

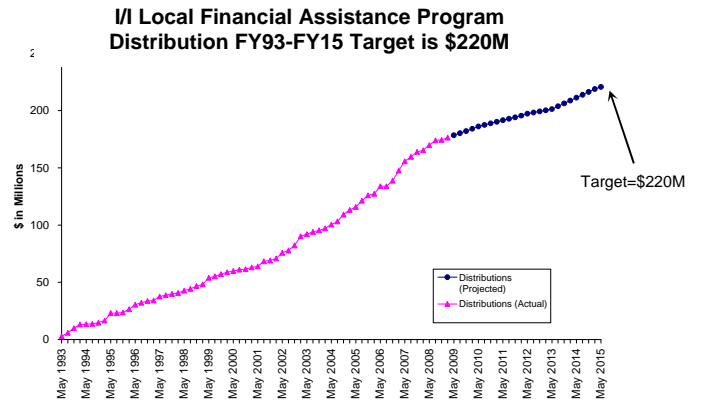
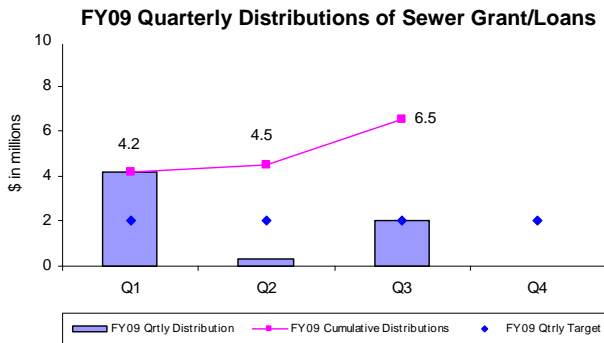
³ Represents the assessment impact of the changes in wastewater flow share.

Community Support Programs

3rd Quarter – FY09

Infiltration/Inflow Local Financial Assistance Program

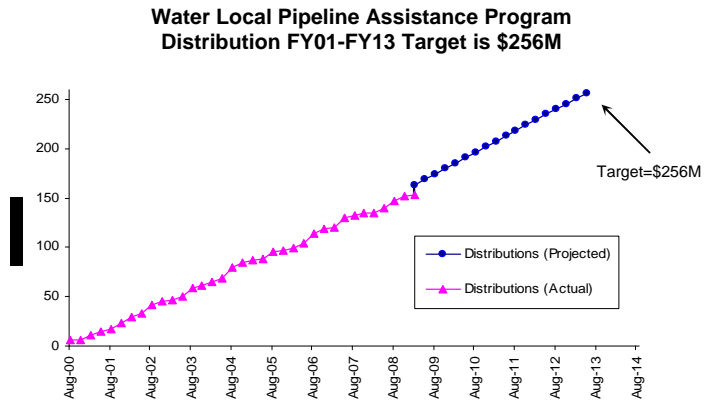
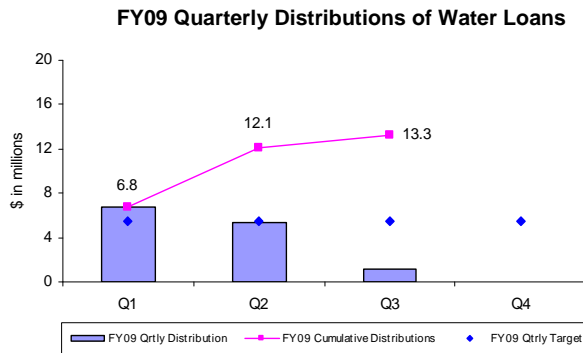
The MWRA's Infiltration/Inflow (I/I) Local Financial Assistance Program provides \$220.75 million in grants and interest-free loans (average of about \$10 million per year from FY93 through FY15) to member sewer communities to perform I/I reduction and sewer system rehabilitation projects within their 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.



During the third quarter of FY09, \$2.0 million in financial assistance (45% grants and 55% interest-free loans) was distributed to fund local sewer rehabilitation projects in Arlington and Newton. Total grant/loan distribution for FY09 is \$6.5 million. From FY93 through the third quarter of FY09, all 43 member sewer communities have participated in the program and more than \$176 million has been distributed to fund 362 local I/I reduction and sewer system rehabilitation projects. Distribution of the remaining funds has been approved through FY15 and community loan repayments will be made through FY20. All scheduled community loan repayments have been made.

Water Local Pipeline Assistance Program

The MWRA's Local Pipeline Assistance Program (LPAP) provides \$256,723,500 in interest-free loans (an average of about \$20 million per year from FY01 through FY13) to member water communities to perform water main rehabilitation projects within their locally-owned water distribution system. Eligible project costs include: water main cleaning/lining, replacement of unlined water mains, lead service replacements, valve work along the pipe alignment, engineering design, engineering services during construction, etc. LPAP funds are allocated to member water communities based on their percent share of unlined water pipe. 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.



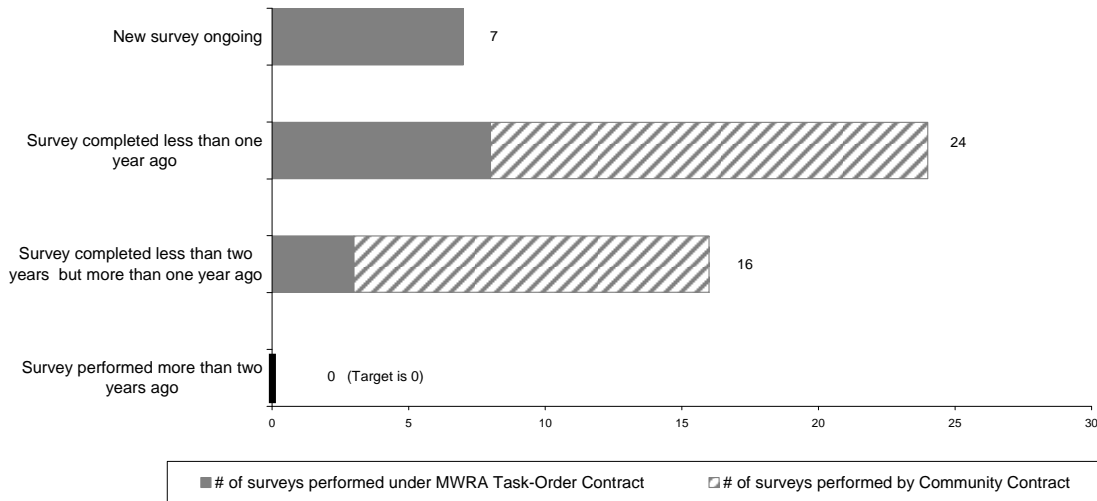
During the third quarter of FY09, \$1.2 million in interest-free loans was distributed to fund local water projects in Belmont and Winthrop. Total loan distribution for FY09 is \$13.3 million. From FY01 through the third quarter of FY09, \$153 million has been distributed to fund 188 local water pipeline rehabilitation projects in 30 MWRA member water communities. Distribution of the remaining funds has been approved through FY13 and community loan repayments will be made through FY23. All scheduled community loan repayments have been made.

Community Support Programs

3rd Quarter – FY09

Community Water System Leak Detection

To ensure member water communities identify and repair leaks in local-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 contractor 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 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 by MWRA, and the costs are billed to the community the following year.



Community Water Conservation Outreach

The MWRA's Community Water Conservation Program helps to maintain average water demand below the regional water system's safe yield of 300 mgd. Current average annual water demand is less than 220 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 regional customers. The annual budget is \$25,000 for printing and purchase of materials. Annual distribution targets and totals are provided in the table below.

| | Annual Target | Q1 | Q2 | Q3 | Q4 | Annual Total |
|---|---------------|-------|-------|--------|----|--------------|
| Educational Brochures | 200,000 | 4,534 | 8,929 | 88,889 | | 102,352 |
| Low-Flow Fixtures (showerheads and faucet aerators) | 6,000 | 9,124 | 5,346 | 5,828 | | 20,298 |
| Toilet Leak Detection Dye Tablets | ----- | 5,818 | 5,037 | 3,329 | | 14,184 |

BUSINESS SERVICES

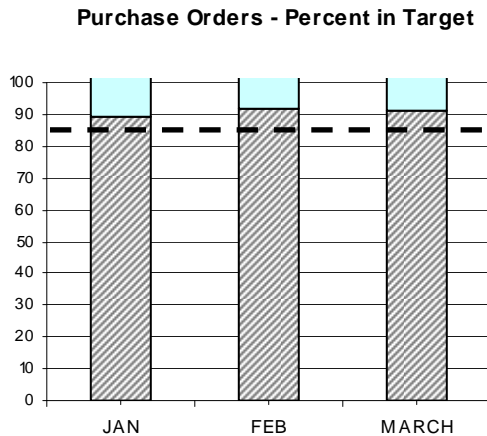
Procurement: Purchasing and Contracts

Third Quarter FY09

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

Outcome: Processed 91% of purchase orders within target; Avg. Processing Time was 4.26 days vs. 5.79 days in Qtr 3 of FY08. Processed 64% (16 of 25) contracts within target timeframes; Avg. Processing Time was 209 days vs. 138 days in Qtr 3 of FY08.

Purchasing



| | NO. | TARGET | PERCENT IN TARGET |
|---------------|------|---------|-------------------|
| \$0 - \$500 | 1143 | 4 DAYS | 90.3% |
| \$500 - \$2K | 686 | 7 DAYS | 94.5% |
| \$2K - \$5K | 235 | 10 DAYS | 86.0% |
| \$5K - \$10K | 88 | 25 DAYS | 92.0% |
| \$10K - \$25K | 73 | 30 DAYS | 90.4% |
| \$25K - \$50K | 11 | 60 DAYS | 72.7% |
| OVER \$50K | 8 | 80 DAYS | 62.5% |

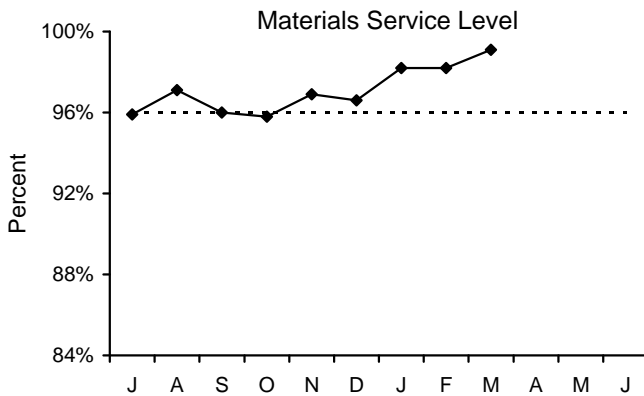
- Purchasing Unit processed 2244 purchase orders, forty-eight fewer than the 2292 processed in Qtr 3 of FY08, for a total value of \$5,112,508 vs. a dollar value of \$7,187,668 in Qtr 3 of FY08.
- The target was not achieved for the \$25k-\$50k category due to determination of user needs and sourcing of additional vendors, and the over \$50k category because of confirmation of specifications and protracted negotiations and determining user needs.

Contracts, Change Orders and Amendments

- Nine contracts were not processed within target timeframes. Reasons include: questions from bidders that resulted in multiple addenda, a request from a bidder for waiver of affirmative action requirements, and a delay to consider the timing and route of a project.
- Procurement processed twenty-five contracts with a value of \$77,412,901 and twelve amendments with a value of \$626,358.
- Twenty change orders were executed during the period, but several were large balancing change orders at the end of jobs, and are recorded as credits or negative numbers. The dollar value of all non-credit change orders during the 3rd quarter FY09 was \$348,095 and the value of credit change orders was (\$299,202). The net dollar value of all change orders was \$48,893
- In addition, staff reviewed 82 proposed change orders and 28 draft change orders.

Materials Management

3rd Quarter, FY09



The service level is the percentage of stock requests filled. The goal is to maintain a service level of 96%. Staff issued 9,509 (98.4%) of the 9,661 items requested in Q3 from the inventory locations for a total dollar value of \$984,526.

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 FY09 goal is to reduce consumable inventory from the July '08 base level (\$6.84 million) by 2.0% (approximately \$136,823), to \$6.70 million by June 30, 2009 (see chart below).

Items added to inventory this quarter include:

- Deer Island – contact block switches, ballasts, solenoid valves, control boards and lamp holders for the Electrical group and grit rollers, gaskets and flame checks for the Maintenance group.
- Chelsea – rake chain, copper coils, idler rollers and brackets for the Maintenance group.
- Southboro – lock de-icers, expanding foam and GFCI (ground fault current interrupter) cords for the Maintenance group. Nitrile gloves were added for the John Carroll Water Treatment Plant.

Property Pass Program:

- Numerous obsolete computers, printers, monitors, keyboards, mice and box cables have been received into property pass as surplus. Disposition is being handled as part of our ongoing recycling efforts.
- In addition, various metals and fibers have been scrapped resulting in a monetary return of \$2,829. Surplus efforts are ongoing throughout the MWRA.
- Tool/equipment reviews were conducted by staff at Southboro, Norumbega, Chelsea Paint and Plumbing Shop during the third quarter.

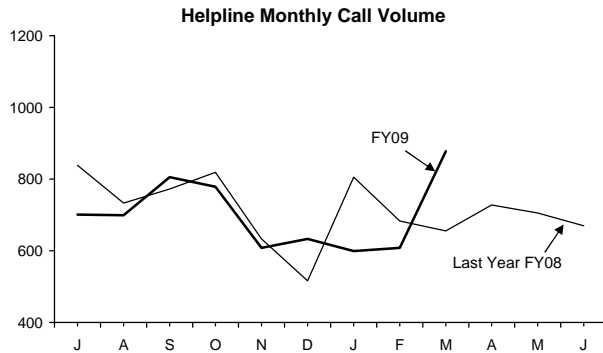
| Items | Base Value July-08 | Current Value w/o Cumulative New Adds | Reduction / Increase To Base |
|-----------------------------|--------------------|---------------------------------------|------------------------------|
| Consumable Inventory Value | 6,841,161 | 6,837,637 | -3,524 |
| Spare Parts Inventory Value | 6,940,392 | 7,073,412 | 133,020 |
| Total Inventory Value | 13,781,553 | 13,911,049 | 129,496 |

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 3rd Quarter FY09

Operations

Highlights:

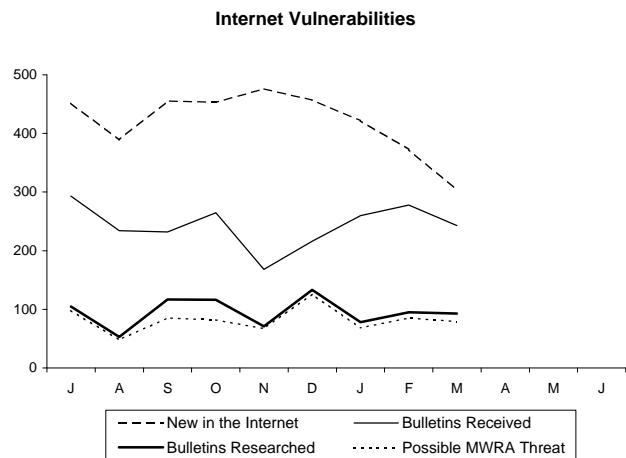
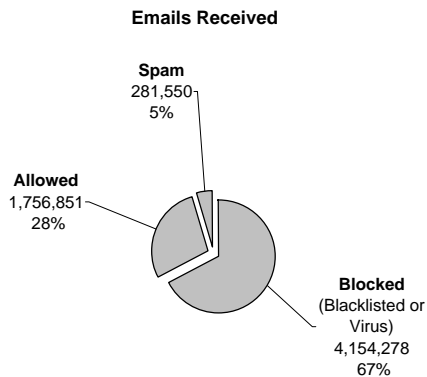


Performance

Call volume peaked in March and has decreased by 2.23% from Q3 last year. The backlog peaked in February and continues to trend downward but still remains above the targeted benchmark range. The mix of calls for the quarter do not indicate any major problems.

Business System Plan

- Cyber Security: During Q3, staff pushed security fixes and updates to desktops and servers throughout the quarter in order to protect against the 1,099 newly revealed vulnerabilities.
- Nine files were identified with viruses on MWRA computers this quarter and infected files were cleaned or deleted before any damage ensued.



- Network & Systems - Expanded network capacity of 1st floor East subnet, by adding a new BPS2000 network switch. Completed network requirement & documentation for networking of the new Record Center in Marlborough.
- Server Consolidation: The server consolidation plan was submitted for approval to purchase a virtual server that will collapse nine development servers into one during fiscal year 2010. This consolidation is the first phase of a multi-year plan that will see further consolidation of both development and productions servers.

Applications/Training

| Area | Significant Accomplishments |
|----------------|---|
| GIS | Assisted the Planning GIS group to determine the elevations of our sewer manholes in areas that would be inundated by a 100 year flood storm event. A collaborative effort including experts from USGS and MassGIS were able to determine this information. |
| Lawson Upgrade | Staff continued to parallel test the upgraded system and the current production system. The Purchase Order/Inventory Control closings were completed and the financial closings will take place in the first week of April. In addition, the web based accrual entry forms have been upgraded and tested by the end users. Also in March staff supported Payroll implementation of new Federal Tax Formulas that take effect on April 1st on the current Lawson Production System. |
| CT Calculator | Released the CT Calculator application into production for the Water Quality staff in Southboro. The CT Calculator is custom-written application that calculates ozone contact time as required by DEP at the Carroll Water Treatment Plant. This application eliminates the tedious manual process of performing the calculations in Excel. This application uses an Oracle database to store results which allows for consistent reporting and ensures data integrity. A reporting mechanism is also linked to the application. |
| Training | For the quarter, 75 staff attended, 25 classes and 9 workshops. Year-to-date, 417 staff have attended 90 classes and 33 workshops. 13% of the workforce have attended at least one class year-to-date. Continued development of Office 2007 training materials. |

Legal Matters

3rd Quarter FY09

PROJECT ASSISTANCE

COURT AND ADMINISTRATIVE ORDERS

- **Boston Harbor Litigation and CSO:** Reviewed and revised report on evaluation of additional Charles River interceptor interconnection alternatives which was submitted to EPA and DEP in accordance with Schedule Seven of the Boston Harbor Case. Filed quarterly compliance and progress report and CSO annual progress report with the Court.
- **NPDES:** Finalized supplement to renewal application for DITP NPDES permit as it relates to MWRA CSO treatment facilities and outfalls.

REAL ESTATE AND CONTRACT

- **Watershed Preservation Restrictions:** Reviewed the following proposed transactions to identify issues prior to approval for funding: Thurber – Tyng Property, Lundquist Property, Kristoff/Trust for Public Land and Selden.
- **Telecommunication Permits:** Reviewed and commented on various drafts of the following permits: Ominipoint, Turkey Hill, Arlington; MetroPCS Massachusetts, LLC, Turkey Hill, Arlington; MetroPCS Massachusetts, LLC, Walnut Hill Lexington.
- **Flaggers/Police Detail regulations:** Provided a template for construction contracts regarding the implementation of 701 CMR 7.00 "Use of Flaggers and Police Details on Public Works Projects."
- **Trench Safety:** Obtained a favorable determination from DPS that MWRA did not have responsibility as the permitting authority in its issuance of 8(m) permits. Separately, resolved a dispute with the City of Boston regarding MWRA's permitting authority for its own projects in Boston.
- **Section 8(m) permits:** Reviewed and approved 19 Section 8(m) permits; provided recommendations on three construction claims.

ENVIRONMENTAL

- **DEP Storm Water Policy/Draft Regulated Impervious Area General Stormwater Permit:** Reviewed permit requirements and confirmed that the MWRA is exempt from the requirement.
- **TRAC Regulations:** Ascertained federal and state requirements and developed proposed timeline for promulgation of amendments of TRAC regulations by an October deadline; reviewed draft of amendments for posting on MWRA website.

LABOR, EMPLOYMENT AND ADMINISTRATIVE

New Matters

Two demands for arbitration were filed.

Matters Concluded

Received two arbitration decisions in favor of the MWRA.

Settled a Union demand for arbitration.

LITIGATION/TRAC

New Lawsuits

Three new cases were reported in the Third Quarter of FY 2009.

AFSCME, Council 93 and MWRA: This action is a Complaint to Vacate an Arbitration Award pursuant to General Laws Chapter 150C filed by AFSCME Council 93. The Complaint seeks an order vacating the Arbitrator's award dismissing the Union's

grievance asserting that the MWRA violated the Collective Bargaining agreement when it assigned work to certain employees. The Arbitrator found that the MWRA's Enabling Act did not permit arbitration of this dispute and that as a result an arbitrator did not have the authority to address the dispute.

(Former Employee) v. MWRA: Plaintiff alleges race discrimination in his conditions of employment and his termination from employment, all in violation of federal (42 USC 2000e) and state (G.L. Chapter 151B Section 1) law. The plaintiff is seeking compensatory damages, punitive damages, attorney's fees, and injunctive and declaratory relief.

Electric Insurance Company v. MWRA: This is a subrogation action by Electric Insurance Company, on behalf of its insured, Ciera Doyle, for property damage to Doyle's vehicle allegedly arising out of an automobile accident on 10/22/07 in Everett, MA. Electric Insurance, as subrogee to Doyle, seeks to recover \$7,911.00 for property damage to Doyle's car, allegedly caused by the negligence of an MWRA employee who was operating an MWRA vehicle. Electric Insurance allegedly paid \$7,911.00 to Doyle, which it seeks to recover from MWRA, plus interest and costs.

Significant Developments

After a six day jury trial, a Suffolk Superior jury returned a verdict for MWRA finding no discrimination against a former employee. (see below)

Closed Cases

There were four cases reported closed in the Third Quarter FY 2009.

(Employee) v. MWRA

This was a lawsuit brought by a former MWRA employee alleging gender discrimination. The complaint was filed in the Suffolk Superior Court. Trial commenced on January 12, 2009 and the jury returned a verdict in favor of MWRA on January 20, 2009 after a short deliberation. MWRA was represented by attorneys from MWRA's Law Division.

Greenwood v. R. Zoppo v. MWRA

In January 2009, the parties, a roofing subcontractor (Greenwood) and MWRA's General Contractor for the Sluice Gate Rehabilitation Contract, agreed to settle the case with no payment by MWRA. This was a claim for approximately \$22,000, arising out of a dispute over the subcontractor's scope of work. MWRA defended against the General Contractor's 3rd party claim, on the grounds that the GC had failed to properly present any claim to MWRA through the contract claims process, and that the GC could not purport to "pass through" to MWRA the subcontractor's claim against the GC, when in fact the disputed work would not have been "extra work" beyond the scope of the GC's contract.

Robert Knox v. Hurley and MWRA

This was a personal injury suit filed by Robert Knox against MWRA, as well as two other defendants, for personal injuries sustained in a three car accident that occurred on December 11, 2002. Although at the time of the accident all drivers appeared to be uninjured, Knox went to an emergency room later in the day, claiming neck and back injuries. In his lawsuit, Knox demanded \$250,000 for lost wages, physical ailments, visits to doctors, physical therapists and chiropractors as well as for pain and discomfort which affect his daily and leisure activities. His medical bills were substantial, although MWRA was prepared to argue that, at least in part, his medical ailments were a result of a pre-existing condition. As the matter was nearing trial, a settlement was reached between Knox and MWRA in the amount of \$49,250. The settlement agreement with Knox has been fully executed and a Stipulation of Dismissal With prejudice has been filed with the court.

(Former employee) v. MWRA

The employee filed a charge of discrimination claiming that MWRA terminated his employment because MWRA perceived that he was disabled by having a limited pulmonary capacity. As the matter was nearing trial, the parties agreed to mediate the case and as a result a settlement was reached between the former employee and MWRA in the amount of \$45,000. The settlement agreement has been fully executed and a Stipulation of Dismissal with Prejudice has been this filed with the court.

Subpoenas During the Third Quarter of FY 2009, three subpoenas were received and one subpoena was pending at the end of Third Quarter FY 2009.

Public Records During the Third Quarter of FY 2009, fourteen new public records requests were received and six requests were pending at the end of Third Quarter FY 2009.

SUMMARY OF PENDING LITIGATION MATTERS

| TYPE OF CASE/MATTER | As of Mar 2009 | As of Dec 2008 | As of Sept 2008 |
|---|-------------------------------|-------------------------------|--------------------------------|
| Construction/Contract/Bid Protest (other than BHP) | 3 | 4 | 5 |
| BHP Claims/Contract Cases | 0 | 0 | 0 |
| Tort/Labor/Employment | 8 | 8 | 8 |
| Environmental/Regulatory/Other | 2 | 2 | 2 |
| Eminent Domain/Real Estate | 2 | 2 | 2 |
| total – all defensive cases | 15 | 16 | 17 |
| Affirmative Cases: | 1 | 1 | 1 |
| <u>MWRA v. (current employee)</u> | | | |
| Other Litigation matters (restraining orders, etc.) | 1 | 1 | 1 |
| <u>MWRA v. (former employee)</u> | | | |
| total – all pending lawsuits | 17 | 18 | 19 |
| Significant claims not in suit: | 1 | 1 | 1 |
| CDM Walnut Hill | | | |
| Bankruptcy | 2 | 2 | 2 |
| Wage Garnishment | 7 | 7 | 7 |
| TRAC Appeals | 5 | 5 | 3 |
| Subpoenas | 1 | 2 | 1 |
| Public Records Requests | 6 | 4 | 10 |
| TOTAL - ALL LITIGATION MATTERS | 39 | 39 | 43 |

TRAC

New Appeals One new appeal was received in the 3rd Quarter FY 2009.

Harvard University 09-01

Internal Audit Program 3rd Quarter FY09

Highlights

MANAGEMENT ADVISORY SERVICE (Issued: March 23, 2009)

This purpose of this assignment was to identify the amounts paid to organizations, exclusive of interest, in connection with the MWRA's bond and commercial paper programs for the period July 1, 2003 through January 31, 2009. Schedules were prepared breaking out the costs by bond issue, by organization, and by service rendered, including the cost for services not directly related to a particular bond issue. A total of \$55.5 million was paid during the period for a variety of services including bond counsel, financial advisor, letters of credit, rating agencies, and underwriter and re-marketer fees. Internal Audit will work with the Finance Division to ensure the list is periodically updated.

MANAGEMENT ADVISORY SERVICE (Issued: March 24, 2009)

Internal Audit was requested to examine change orders from a number of large construction contracts to determine the impact of credit items on the approval level for the change order. Internal Audit selected five contracts having a total of 169 change orders. Five change orders were identified that may have gone to the Board for approval, but for the presence of a credit item. The results of this review were considered in the preparation of the Staff Summary that was presented to the Board on this subject in April 2009.

Status of Open Audit Recommendations

The Internal Audit Department follows up on open recommendations on a continuous basis. All pending recommendations have target implementation dates and Internal Audit has implemented a tracking system that automatically notifies the responsible managers 30 days prior to the target implementation date. 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 72% of recommendations have been implemented.

| Report Title (date) | Pending Implementation | Closed Recommendations |
|---|------------------------|------------------------|
| Field Operations Maintenance Management Practices (9/16/05) | 3 | 9 |
| Accounts Payable Activities (10/11/05) | 6 | 6 |
| Controls Over Gasoline & Diesel Fuel (5/3/06) | 1 | 15 |
| Field Crew Practices (11/14/06) | 1 | 8 |
| Financial & Management Controls of the Fore River Railroad (3/1/07) | 1 | 6 |
| Infiltration & Inflow and Local Pipeline Programs (7/31/08) | 1 | 9 |
| Audit of Buying Practices (9/15/08) | <u>4</u> | <u>7</u> |
| Total Recommendations | 17 | 60 |

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. Commencing in FY07 cost savings include the dollar impact, if measurable, of internal assignments.

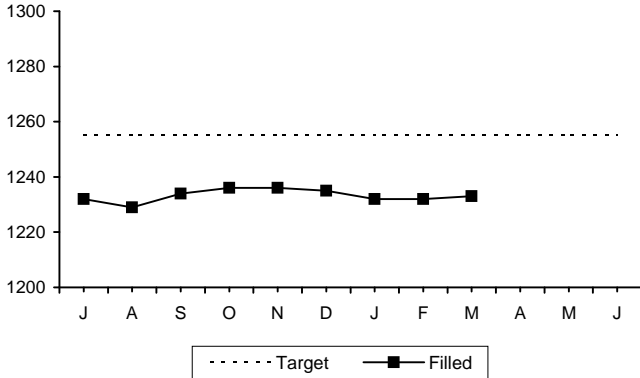
| Savings | FY05 | FY06 | FY07 | FY08 | FY09 3Q | TOTAL |
|-----------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Consultants | \$483,968 | \$768,394 | \$358,341 | \$55,901 | \$296,418 | \$1,963,022 |
| Contractors & Vendors | \$1,551,139 | \$456,968 | \$637,378 | \$2,147,311 | \$1,226,421 | \$6,019,217 |
| Internal Audits | | | \$183,840 | | \$415,875 | \$599,715 |
| Total | \$2,035,107 | \$1,225,362 | \$1,179,559 | \$2,203,212 | \$1,938,714 | \$8,581,954 |

OTHER MANAGEMENT

Workforce Management

3rd Quarter FY09

Filled Position Tracking



FY09 Target for Filled Positions = 1255
 Filled Positions as of March 2009 = 1233

Positions Filled by Hires/Promotions
 FY09



| | Pr/Trns | Hires | Total |
|------|----------|----------|-------|
| FY06 | 41 (65%) | 22 (35%) | 63 |
| FY07 | 52 (56%) | 41(44%) | 93 |
| FY08 | 63 (62%) | 39(38%) | 99 |

Average Monthly Sick Leave Usage
 Per Employee

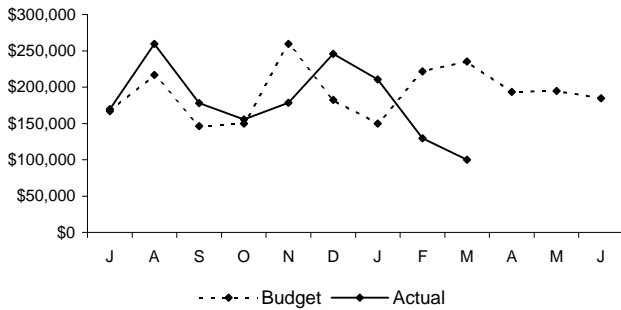


| | Number of Employees | YTD | Annualized Total | Annual FMLA % | FY08 |
|-----------------|---------------------|-------------|------------------|---------------|-------------|
| Law | 19 | 6.16 | 8.22 | 31.8% | 8.73 |
| Planning | 24 | 6.28 | 8.37 | 21.8% | 6.91 |
| Operations | 955 | 6.90 | 9.19 | 27.7% | 8.94 |
| Support | 192 | 5.65 | 7.53 | 22.0% | 8.46 |
| Finance | 43 | 6.07 | 8.10 | 35.3% | 8.64 |
| Executive | 8 | 3.40 | 4.53 | 0.0% | 5.18 |
| MWRA Avg | 1241 | 6.63 | 8.84 | 27.0% | 8.79 |

Percent of sick leave usage attributable to Family and Medical Leave Act (FMLA) leave is 27% ending March 31, 2009. In FY09, the average monthly sick leave usage has decreased 0.23% from the same time last year.

Field Operations

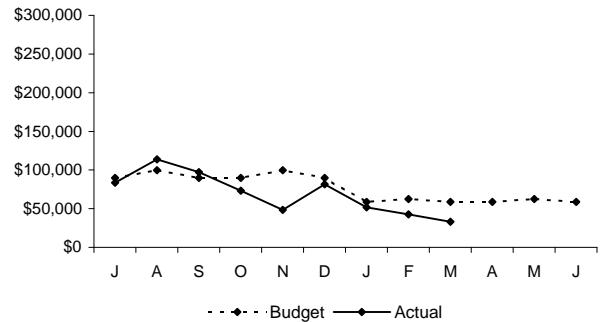
Overtime Expenditure Variance



Field Operations overtime spending overall in the third quarter was \$166,000 (27.4%) less than budgeted, reflecting management efforts to curtail planned overtime. Overspending in January reflects wet weather coverage.

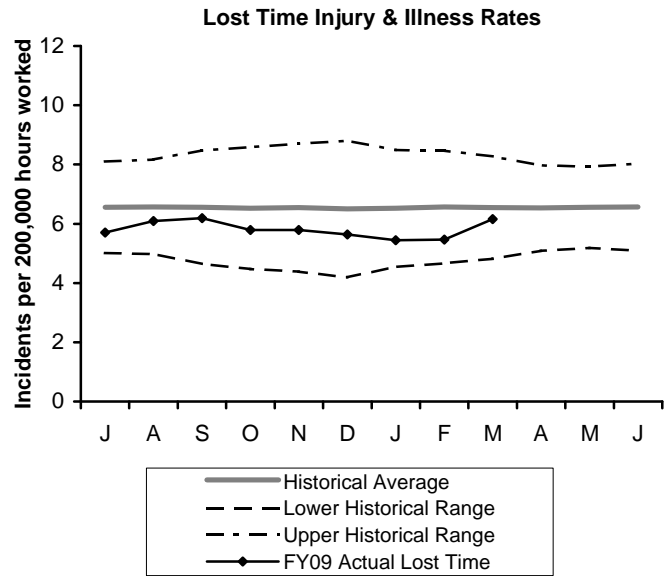
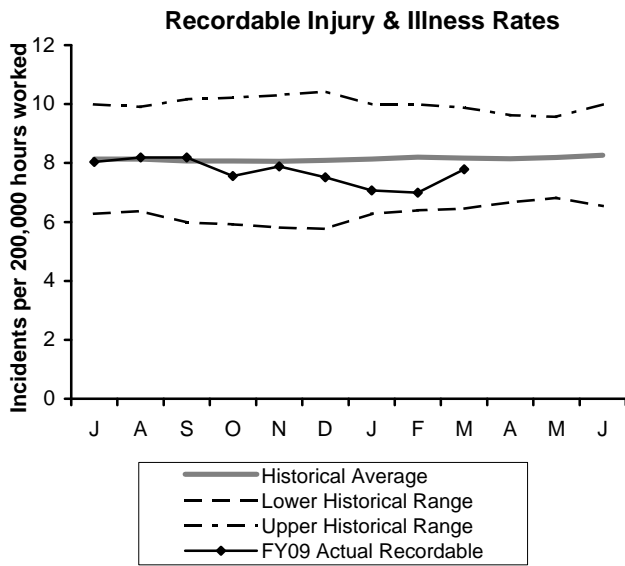
Deer Island Treatment Plant

Overtime Expenditure Variance



Deer Island overtime spending overall in the third quarter was \$52,000 (29.1%) less than budgeted, primarily reflecting management efforts to limit maintenance overtime spending to critical equipment and emergency repairs.

Workplace Safety 3rd Quarter FY09



- 1 "Recordable" incidents are all work-related deaths and illnesses, and those work-related injuries which result in 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 FY08. The "Upper" and "Lower Historical Ranges" are computed using these same data – adding and subtracting two standard deviations respectively. FY09 actual incident rates can be expected to fall within this historical range.

Workers Compensation Claims Highlights

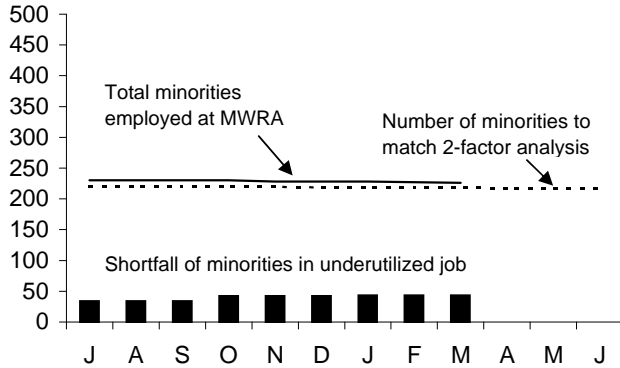
| | New | Closed | Open Claims |
|--------------------|------------|---------------|--------------------|
| Lost Time | 12 | 14 | 55 |
| Medical Only | 55 | 43 | 39 |
| | | | |
| | New | | YTD Returns |
| Light Duty Returns | 4 | | 7 |

Returns:

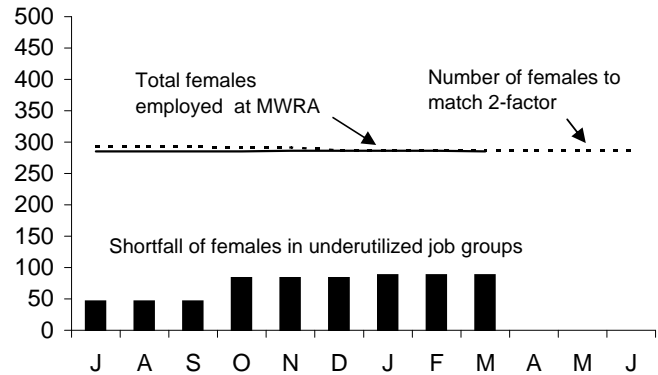
- Three employees returned to regular duty in January.
- Three employees returned to light duty in February. Two were assigned to DITP warehouse and one returned to his regular position.
- Six employees returned to full duty and 1 returned to her regular position with reduced work hours in March.

MWRA Job Group Representation Quarter 3, FY 2009

Minority - Affirmative Action Plan Goals



Female - Affirmative Action Plan Goals



Highlights:

At the end of Q3 FY09, 7 job groups or a total of 43 positions are underutilized by minorities as compared to 9 job groups or a total of 42 at the end of Q3 FY08; for females, 14 job groups or a total of 88 positions are underutilized as compared to 11 job groups or a total of 82 at the end of Q3 FY08. During Q3, 1 minority and no females were hired, and 3 minorities and 1 female terminated.

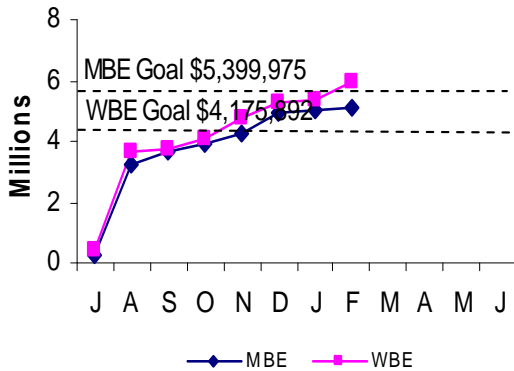
Underutilized Job Groups - Workforce Representation

| Job Group | Employees | Minorities | Achievement Level | Minority | Females | Achievement Level | Female |
|-------------------|-----------------|-----------------|-------------------|------------------------------|-----------------|-------------------|------------------------------|
| | as of 3/31/2009 | as of 3/31/2009 | | Over or Under Under utilized | As of 3/31/2009 | | Over or Under Under utilized |
| Administrator A | 19 | 3 | 2 | 1 | 3 | 4 | -1 |
| Administrator B | 25 | 0 | 4 | -4 | 6 | 7 | -1 |
| Clerical A | 51 | 23 | 11 | 12 | 45 | 11 | 34 |
| Clerical B | 44 | 8 | 11 | -3 | 17 | 3 | 14 |
| Engineer A | 87 | 16 | 13 | 3 | 13 | 14 | -1 |
| Engineer B | 50 | 9 | 4 | 5 | 6 | 25 | -19 |
| Craft A | 117 | 14 | 21 | -7 | 0 | 4 | -4 |
| Craft B | 149 | 25 | 18 | 7 | 3 | 7 | -4 |
| Laborer | 65 | 15 | 11 | 4 | 5 | 9 | -4 |
| Management A | 105 | 18 | 17 | 1 | 32 | 36 | -4 |
| Management B | 57 | 9 | 9 | 0 | 13 | 25 | -12 |
| Operator A | 68 | 5 | 7 | -2 | 2 | 4 | -2 |
| Operator B | 73 | 9 | 11 | -2 | 4 | 3 | 1 |
| Para Professional | 62 | 10 | 28 | -18 | 28 | 54 | -26 |
| Professional A | 38 | 2 | 9 | -7 | 24 | 15 | 9 |
| Professional B | 173 | 41 | 28 | 13 | 77 | 78 | -1 |
| Technical A | 47 | 15 | 11 | 4 | 3 | 11 | -8 |
| Technical B | 12 | 4 | 2 | 2 | 4 | 5 | -1 |
| Total | 1242 | 226 | 217 | 52 / -43 | 285 | 315 | 58 / -88 |

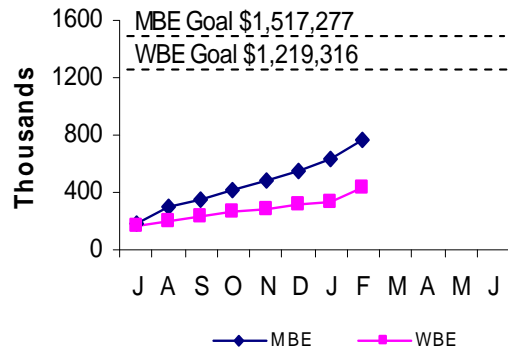
MBE/WBE Expenditures Third Quarter 2009

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 February.

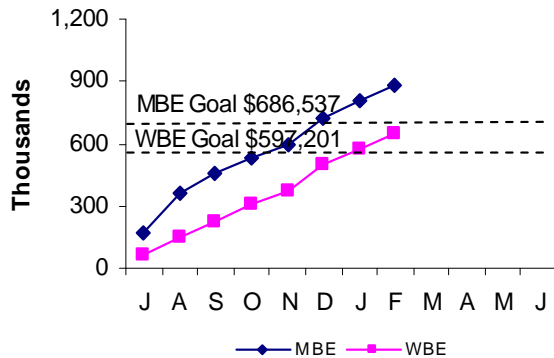
Construction



Professional



Goods/Services



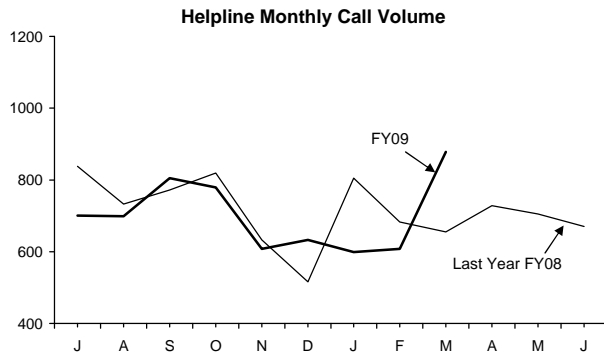
FY09 spending and percentage of goals achieved, as well as FY08 performance are as follows:

| | MBE | | | | WBE | | | |
|-------------------|--------------------|----------------|---------------------|----------------|--------------------|----------------|---------------------|----------------|
| | FY09 Year-to-Date | | FY08 | | FY09 Year-to-Date | | FY08 | |
| | <u>Amount</u> | <u>Percent</u> | <u>Amount</u> | <u>Percent</u> | <u>Amount</u> | <u>Percent</u> | <u>Amount</u> | <u>Percent</u> |
| Construction | 5,095,892 | 94.4% | 13,681,272 | 144.8% | 5,925,618 | 141.9% | 9,999,226 | 212.8% |
| Professional Svc. | 768,145 | 50.6% | 1,867,312 | 118.3% | 439,465 | 36.0% | 863,795 | 68.1% |
| Goods & Svcs. | 878,105 | 127.9% | 1,523,765 | 266.1% | 645,166 | 108.0% | 627,752 | 126.0% |
| Total | \$6,742,142 | 88.7% | \$17,072,349 | 147.1% | \$7,010,249 | 117.0% | \$11,490,773 | 177.7% |

MIS Program 3rd Quarter FY09

Operations

Highlights:

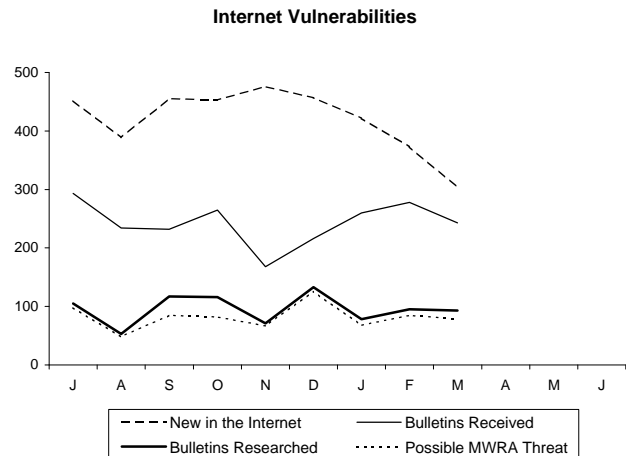
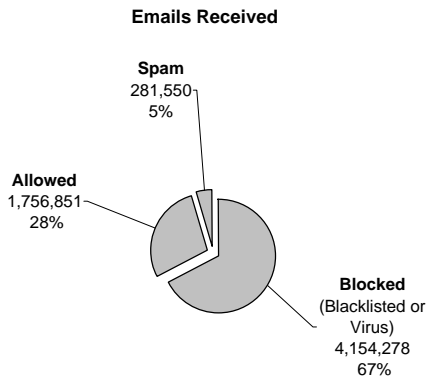


Performance

Call volume peaked in March and has decreased by 2.23% from Q3 last year. The backlog peaked in February and continues to trend downward but still remains above the targeted benchmark range. The mix of calls for the quarter do not indicate any major problems.

Business System Plan

- **Cyber Security:** During Q3, staff pushed security fixes and updates to desktops and servers throughout the quarter in order to protect against the 1,099 newly revealed vulnerabilities.
- Nine files were identified with viruses on MWRA computers this quarter and infected files were cleaned or deleted before any damage ensued.



- **Network & Systems** - Expanded network capacity of 1st floor East subnet, by adding a new BPS2000 network switch. Completed network requirement & documentation for networking of the new Record Center in Marlborough.
- **Server Consolidation:** The server consolidation plan was submitted for approval to purchase a virtual server that will collapse nine development servers into one during fiscal year 2010. This consolidation is the first phase of a multi-year plan that will see further consolidation of both development and production servers.

Applications/Training

| Area | Significant Accomplishments |
|----------------|---|
| GIS | Assisted the Planning GIS group to determine the elevations of our sewer manholes in areas that would be inundated by a 100 year flood storm event. A collaborative effort including experts from USGS and MassGIS were able to determine this information. |
| Lawson Upgrade | Staff continued to parallel test the upgraded system and the current production system. The Purchase Order/Inventory Control closings were completed and the financial closings will take place in the first week of April. In addition, the web based accrual entry forms have been upgraded and tested by the end users. Also in March staff supported Payroll implementation of new Federal Tax Formulas that take effect on April 1st on the current Lawson Production System. |
| CT Calculator | Released the CT Calculator application into production for the Water Quality staff in Southboro. The CT Calculator is custom-written application that calculates ozone contact time as required by DEP at the Carroll Water Treatment Plant. This application eliminates the tedious manual process of performing the calculations in Excel. This application uses an Oracle database to store results which allows for consistent reporting and ensures data integrity. A reporting mechanism is also linked to the application. |
| Training | For the quarter, 75 staff attended, 25 classes and 9 workshops. Year-to-date, 417 staff have attended 90 classes and 33 workshops. 13% of the workforce have attended at least one class year-to-date. Continued development of Office 2007 training materials. |

Cost of Debt

March 2009

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

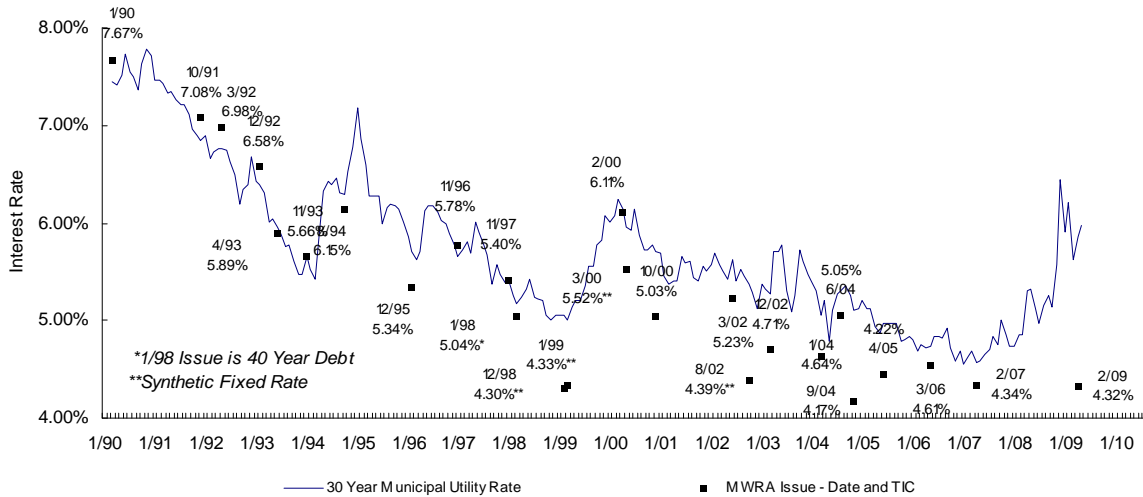
| | |
|---|--------------|
| Fixed Debt (\$4,185) | 4.64% |
| Variable Debt (\$594) | 2.16% |
| SRF Debt (\$1,088) | 0.97% |
| Weighted Average Debt Cost (\$5,867) | 3.71% |

Most Recent Senior Fixed Debt Issue

February 2009

| | |
|---------------------------|-------|
| 2009 Series A & B (\$383) | 4.32% |
|---------------------------|-------|

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

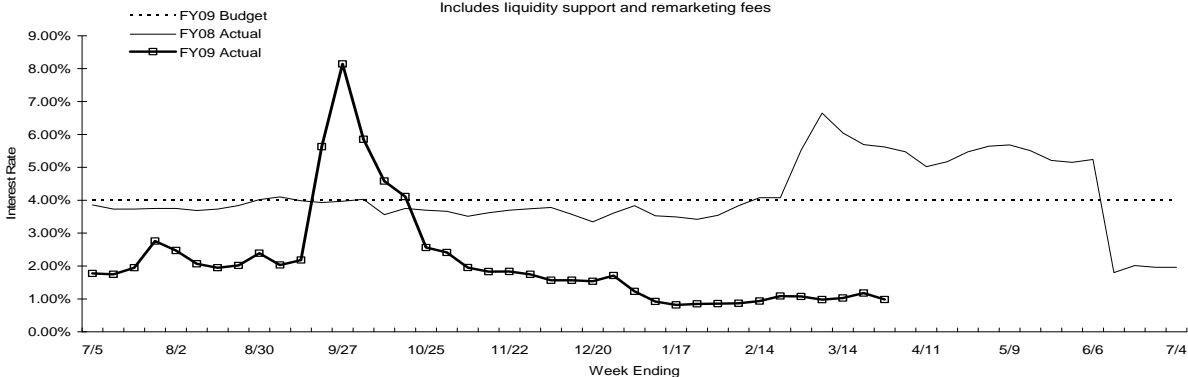


Weekly Average Interest Rates vs. Budget

MWRA currently has nine variable rate debt issues with \$1.4 billion outstanding, excluding commercial paper. Of the nine 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. Starting in September 2008, the short term market experienced disruption caused by a market-wide credit crisis which pushed (SIFMA) Securities Industry and Financial Markets Association rates to a high of 7.96%. In March, SIFMA rates fluctuated with a high of 0.58% and a low of 0.54%. 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.

Weekly Average Interest Rate on MWRA Variable Rate Debt

Includes liquidity support and remarketing fees



Investment Income March 2009

Actual interest income varies from budgeted amounts because either fund balances or interest rates are greater or lower than budgeted.

YTD Investment Income vs Budget (\$000)

| Fund | Impact on Investment Income due to Variance in Fund Balances | | | | Impact on Investment Income due to Variance in Interest Rates | | | Combined Impact on Investment Income | |
|-----------------------|--|------------------------|-------------------|----------------|---|--------------|----------------|--------------------------------------|-------------|
| | Average Budgeted Balance | Average Actual Balance | Variance | Impact | Budget | Actual | Impact | Impact | % |
| Combined Reserves | \$91,618 | \$90,743 | (\$875) | (\$34) | 4.95% | 5.10% | \$104 | 70 | 2.07% |
| Construction | \$101,552 | \$50,875 | (\$50,677) | (\$753) | 2.00% | 2.13% | \$50 | -703 | -46.62% |
| Debt Service | \$97,290 | \$98,380 | \$1,091 | \$16 | 2.00% | 2.29% | \$211 | 227 | 15.74% |
| Debt Service Reserves | \$237,831 | \$241,849 | \$4,018 | (\$113) | 3.12% | 3.41% | \$721 | 608 | 11.03% |
| Operating | \$52,433 | \$53,626 | \$1,193 | \$12 | 2.61% | 2.15% | (\$170) | -157 | -15.51% |
| Revenue | \$79,051 | \$83,852 | \$4,801 | \$63 | 2.13% | 2.44% | \$202 | 265 | 21.19% |
| Redemption | \$35,410 | \$31,733 | (\$3,677) | (\$54) | 2.68% | 3.19% | \$101 | 47 | 6.63% |
| Total | \$695,182 | \$651,057 | (\$44,125) | (\$862) | 2.87% | 3.14% | \$1,219 | 357 | 2.4% |

YTD Investment Income Variance

