MASSACHUSETTS WATER RESOURCES AUTHORITY

Board of Directors Report

on

Key Indicators of MWRA Performance

for

Fourth Quarter FY2009

Q1	Q2	Q3	Q4

Frederick A. Laskey, Executive Director
Michael J. Hornbrook, Chief Operating Officer
September 16, 2009

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

Table of Contents

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

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

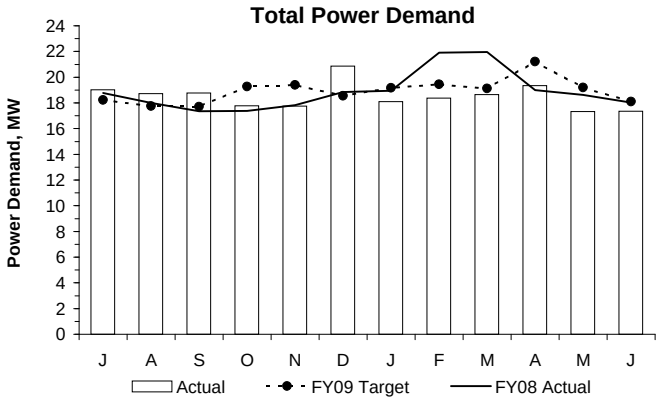
September 16, 2009

OPERATIONS AND MAINTENANCE

Deer Island Operations

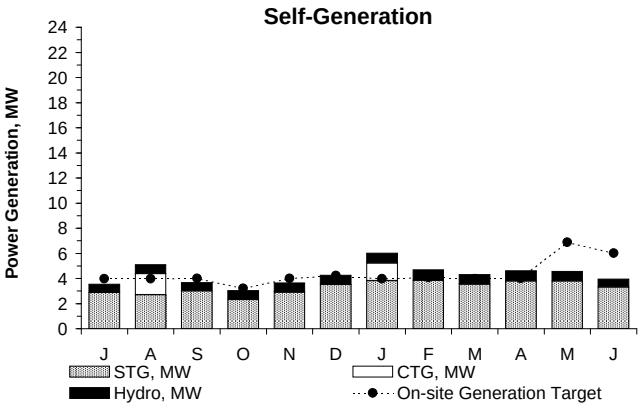
4th Quarter - FY09

Total Power Demand



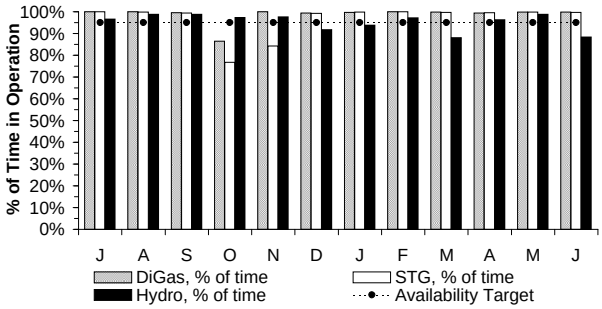
Total Power Demand for the 4th Quarter was 7% lower than the estimate, which equates to 3.2 million kWh less power demand. The lower-than-expected power demand was due mainly to the 9% lower-than-expected Total Plant Flow for the quarter. Overall, Total Power Demand for all of FY09 was 2% less than the FY09 estimate.

Self-Generation



Power generated on-site was 22% lower than the target for the 4th Quarter but was pretty much on target (-2%) overall for FY09. The STG and Hydro turbines exceeded their target this quarter by 13% and 10%, respectively. The CTG generation target for the 4th Quarter was 1.75 MW but the CTGs were operated only briefly for maintenance purposes, generating a total of 0.274 MW over 0.6 hours of operation. The CTG target included anticipated operation during major storm events and demand response events, which historically have occurred during this period but did not occur this year.

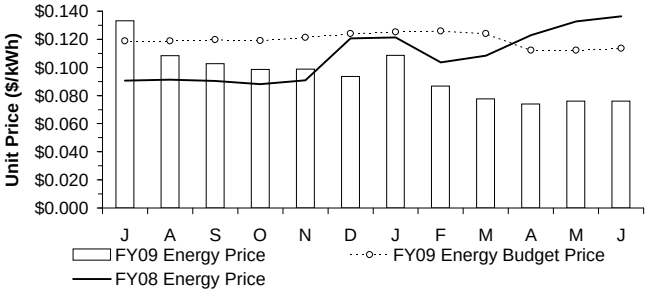
Self-Generation Equipment On-Line



Overall, the DiGas, STG, and Hydro turbine systems met or exceeded their 95% Availability Target for the 4th Quarter even though the Hydro turbines were available for only 88% of the time in June due to scheduled annual maintenance.

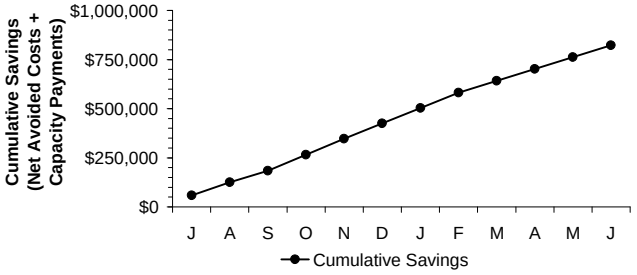
Total Energy Pricing

(includes spot energy price, ancillary costs, and NSTAR's transmission & distribution costs)



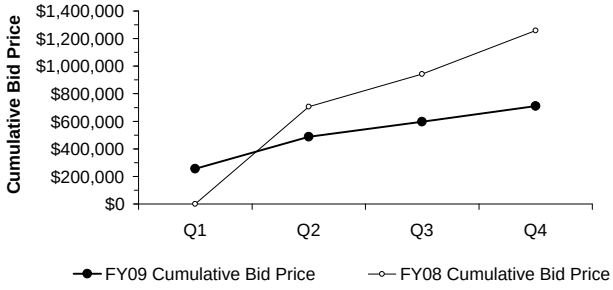
Under the current contract, all of DI's energy is purchased in real time. Overall, the total energy price in the 4th Quarter was 33% lower than the target due to lower-than-budgeted spot energy prices. The total energy price includes spot energy price, transmission & distribution charges, and ancillary charges. The June total energy price is estimated as the invoices have not been received. Year-to-date costs as a result of the lower energy pricing are estimated at approximately $1,339,269 less than budgeted .

Load Response Program



DI did not participate in any demand response events during the 4th Quarter as none were called. DI 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 DI'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, DI receives energy payments from ISO-NE and also avoids NSTAR 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 montly Capacity Payments; the total cumulative savings for FY09 was $821,676.

MA Renewable Portfolio Standard

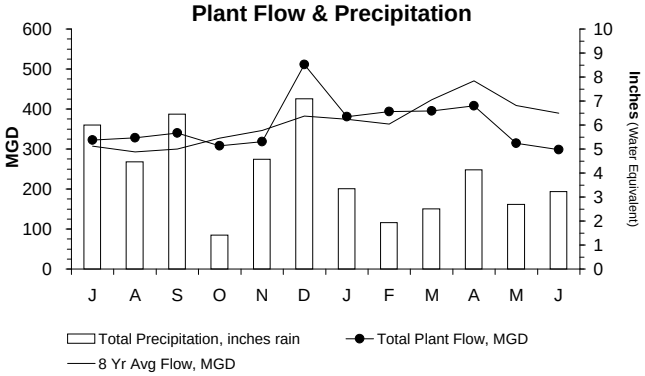


Bids were awarded in June for the sale of 5,087 Renewable Energy Credits (REC) for a total value of $112,962. The Cumulative Bid Price above reflects the total value of bids received to date in FY09. No bids were received in April or May. Bid prices have declined over the last year due to the increased supply of renewable energy generation. For example, the average cost per REC in FY09 was $30.96 compared to $53.08 per REC in FY08. The total revenue for the fiscal year was $709,479.

Deer Island Operations

4th Quarter - FY09

Plant Flow & Precipitation

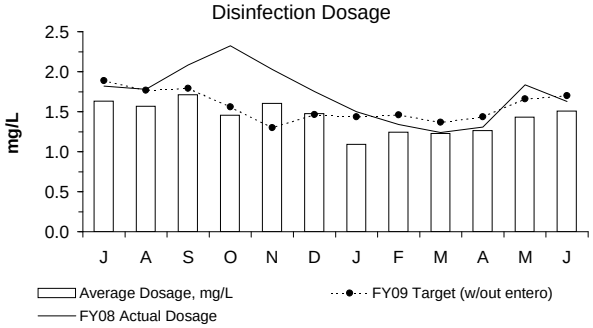


The Total Plant Flow for the 4th Quarter was 19% lower than the 8-year average flow (340.5 mgd actual vs. 422.8 mgd expected) because precipitation was 25% lower than the 8-yr average for the quarter (10.04 water equivalent inches actual vs. 13.45 water equivalent inches expected).

Overall, Total Plant Flow for FY09 was consistent with the 8-year average flow (359.9 mgd actual vs. 365.4 mgd expected, a less than 1% variance) even though the actual precipitation for FY09 was 10% higher than the 8-year average (47.84 inches vs. 43.64 inches).

Deer Island Sodium Hypochlorite Use

Disinfection Dosage



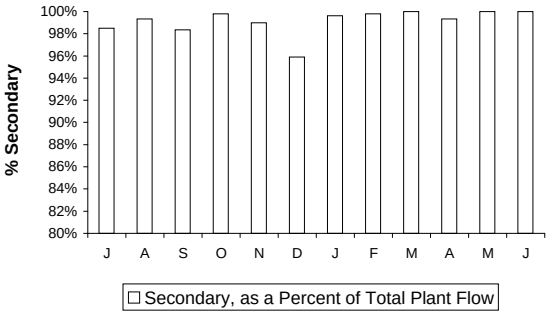
For the 4th Quarter of FY09, the disinfection dosing rate was 12% lower than both the target fand the FY08 actual dosage for the same period. Overall for FY09, the dosing rate was lower than both the target (-9%) and the FY08 actual dosage (-17%). Chlorine demand was less than historical because the wastewater continues to contain less overall solids and organic matter. The relatively higher plant flow earlier this year also helped to minimize the buildup of solids and organic matter in the collection system resulting in cleaner wastewater since early 2009. The 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	4	4	0	99.3%	13.39
M	1	1	0	100.0%	0.72
J	1	1	0	100.0%	1.03
Total	30	30	0	99.1%	186.3

There were a number of significant rain events during the 4th Quarter, which resulted in six separate blending events totally 15.1 hours; 83.5 million gallons of flow was blended with secondary effluent. All secondary blending events during the quarter were due to rain resulting in high plant flows. **Secondary permit limits were met at all times.**

Deer Island Secondary Treatment as a Percent of Total Plant Flow



Overall, 99.8% of the total plant flow to DITP received Secondary treatment during the 4th Quarter. Overall in FY09, 99.1% of total plant flow received Secondary treatment. The Maximum Secondary Capacity for the 4th Quarter and for the entire fiscal year was 700 mgd.

Deer Island Operations & Maintenance Report

Environmental/Pumping: The plant achieved a maximum average hourly flow rate for the quarter of 1,018 mgd on April 6 as a result of a storm event that brought heavy rain (1.17 inches) to the area. Pumping and treatment operations continued without incident throughout this storm event, as well as throughout the entire quarter.

Residuals: Module 3's waste gas flare was taken off-line on May 11 to allow for permit required refractory testing; maintenance on the flare and its associated systems was also performed. Staff anticipate that the entire project, which involves contractors and in-house staff, will be completed by the end of July.

During regularly scheduled maintenance of digested sludge pumps in June, staff noticed internal wear on some essential parts of the hydraulic system; these parts require a long lead-time. Staff machined some of the parts on site to bring clearances to workable tolerances. Replacement parts cost more than $20,000 per pump. Staff have ordered one spare set-up to determine factory clearances. MWRA's re-machining of parts to original tolerances will likely result in the re-use of most the original parts for an extended period of time.

Deer Island Operations & Maintenance Report (continued)

Energy:
The installation of two 600-kW wind turbine generators on Deer Island is in progress with the footings for the turbines being poured in late May. The wind turbines will be delivered by barge and once installed, will be interconnected to the plant's existing electrical system and the power generated will be used onsite to offset DITP's electricity purchases.

On June 15, Lisa P. Jackson, EPA Administrator, visited DITP to announce $185 million in Recovery Act funding for wastewater and drinking water projects in Massachusetts. She was joined by Secretary of Energy and Environmental Affairs and MWRA Board Chairman, Ian A. Bowles, Congressmen Michael Capuano and William Delahunt, Federal District Court Judge Richard G. Stearns, DEP Commissioner Laurie Burt, other members of MWRA's Board, and MWRA Executive Director Laskey.

May 14, 2009 marked the one-year anniversary of the commissioning of DITP's first photovoltaic installation and actual production has exceeded projections by approximately 10%.

Regulatory/Compliance:
The new EPA Multi-Sector General Permit or MSGP (industrial facility storm water permit) testing and inspection regimen is underway. Training for DITP staff who perform storm water outflow sampling is under development. A MSGP Comprehensive Site Inspection and annual report to EPA (a new requirement) must be completed and submitted by the end of September 2009.

Annual review of the Integrated Contingency Plan (ICP) is under way; staff anticipate that changes will include primarily housekeeping items based on personnel changes and oil and chemical handling and storage details, none of which should require re-certification of the document. Staff expect the review and issue of updates to be complete by the end of August. Basic ICP/Right-to-know training has been delivered to all appropriate plant staff.

Clinton Wastewater Treatment Plant

Revisions to Phosphorous Limit:
An as-needed task order was developed to have MWRA's consultant review the Clinton Plant's options for phosphorous treatment. Staff expect the new NPDES permit, which is due later this year (a draft is expected in late summer/early fall) will require a phosphorous limit of 0.2 mg/l (reduced from current 1.0 mg/l). New treatment components will likely be needed for the plant to meet this limit consistently, which will have a corresponding impact on both the CIP and CEB.

Grit Removal System Repair:
A purchase order was recently awarded for the replacement of carriage assembly for the grit removal system. This assembly will fit precisely within the original system, thus avoiding a costly re-engineering project.

Operations and Maintenance:
Headworks Building - Staff replaced the drain valve on Aerated Grit Chamber 2 and removed the motors on Primary Sludge Pump 1 and Low-Pressure Air Blower 3; the motors were sent out for re-building and were then reinstalled.

Dewatering Building - Staff replaced three 8-inch ball valves on the gravity thickener feed lines and also replaced the 8 -inch ball valve on Piston Pump 2's discharge line.

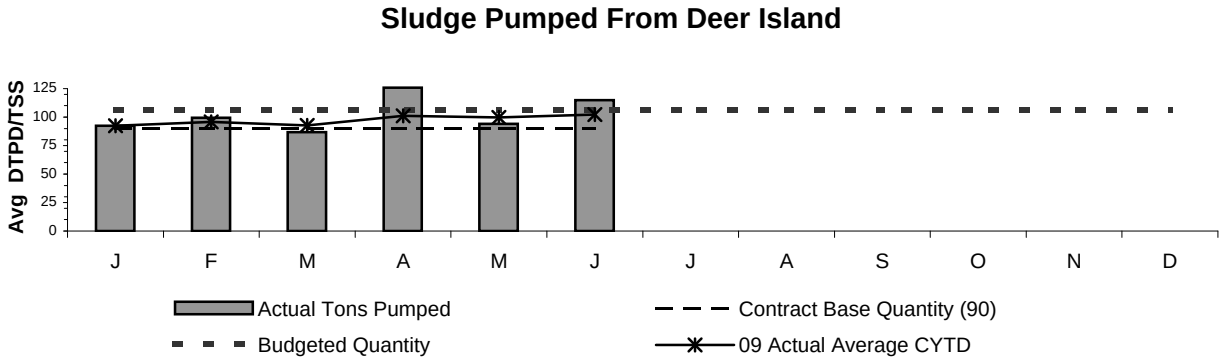
Chemical Building - Replaced a suction valve on Final Clarifier 3's scum well.

Digester Building - Staff greased all plunger pumps, changed the oil and greased all recirculation pumps, and scraped down an algae build-up from the sidewalls of the outfall channel.

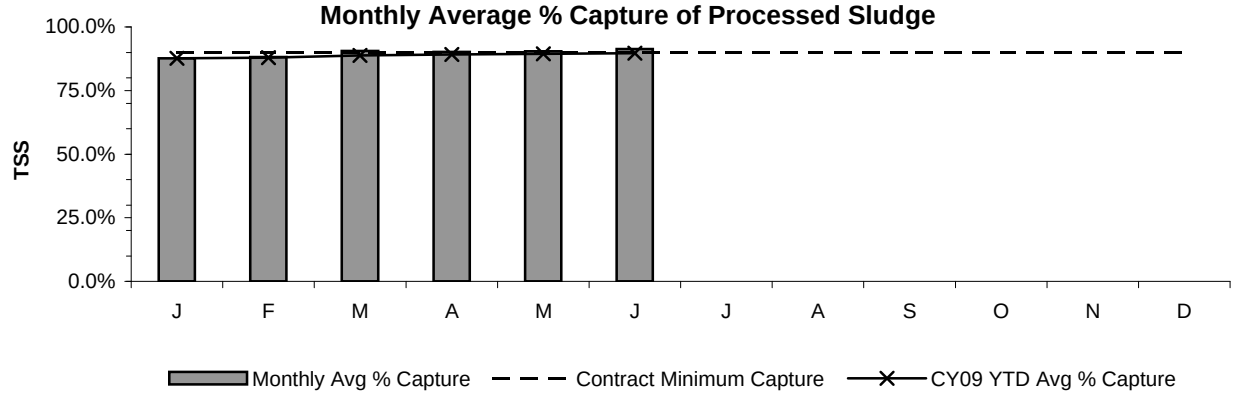
Deer Island Residuals

4th 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 was 106 DTPD/TSS).



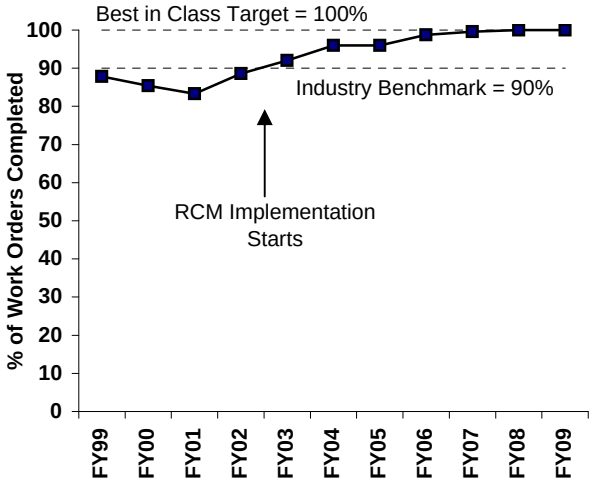
The average quantity of sludge pumped from Deer Island to the Pelletizing Plant for the 4th Quarter was 101 DTPD; the average for the calendar year to date is 102 DTPD. The lower sludge quantities are likely due to the cooler-than-normal weather during the quarter. It should be noted that changes in sludge inventory retained on Deer Island for process reasons, as well as the performance of primary and secondary treatment systems, can affect sludge quantities; upset conditions can also affect sludge quantities.



The average solids capture rate for the 4th Quarter was 90.63%; the contract requirement is at least 90%.

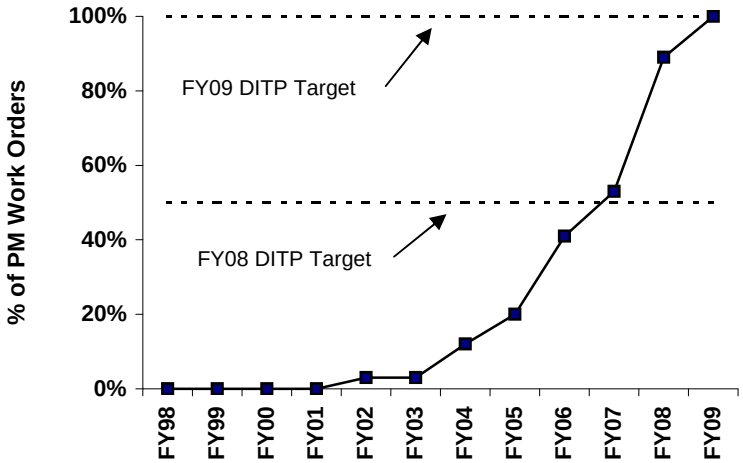
Deer Island's Yearly Maintenance Metrics
Proactive and Productivity Measures

Preventive Maintenance



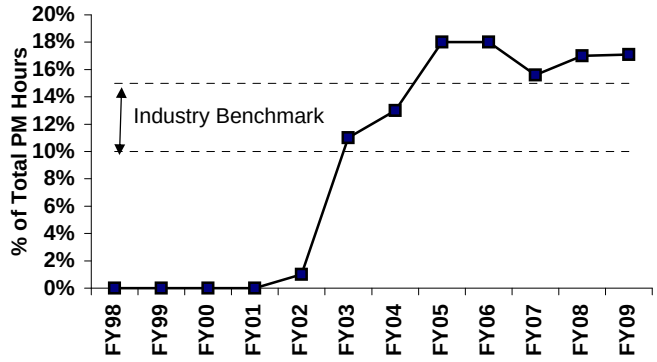
The industry benchmark is 90% Preventive Maintenance (PM) completion. Upon reaching the 90% goal in FY02, the goal was raised to a best-in-class standard of 100% PM completion. Since then, PM work order completion percentage has been trending upward. Reliability-Centered Maintenance (RCM) and PM optimization efforts have continued in FY09; DITP's FY09 PM completion was 99.9%.

Preventive Maintenance Kitting



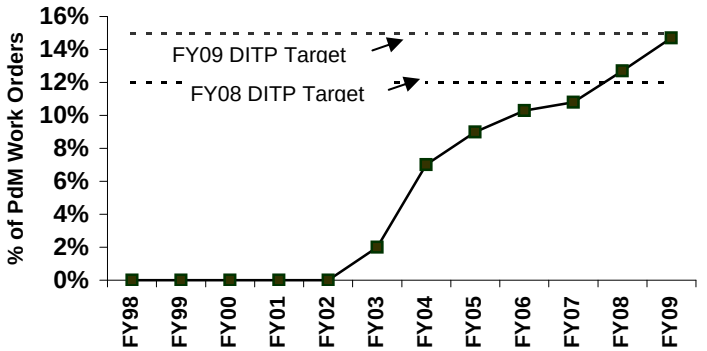
In an effort to increase wrench time, staff have been developing a process to "kit" all preventive maintenance work orders. Kitting is considered a best practice by maintenance and reliability professionals and entails staging parts necessary to complete maintenance work. Kitting allows maintenance staff to spend more time "turning the wrench" rather than waiting for parts at the stockroom window. The process of kitting parts was developed in FY03; in FY04, all PM inventory items were entered into the Maximo system so that parts for equipment could be assigned to work orders on a monthly basis. The percentage of PM work orders "kitted" has been on an upward trend since FY03. DITP reached the goal of 100% in FY09.

Operations Light Maintenance PMs



The percentage of preventive maintenance work order hours completed by Operations staff has increased from less than 1% in January 2002 to the current level of 17%. DI reached the industry benchmark range of 10-15% in April 2003 and has exceeded the goal through FY09. Operations completes approximately 578 hours per month of PM. In FY07 a decrease was attributed to the PM optimization process, which eliminated low-value operator PM tasks.

Predictive Maintenance

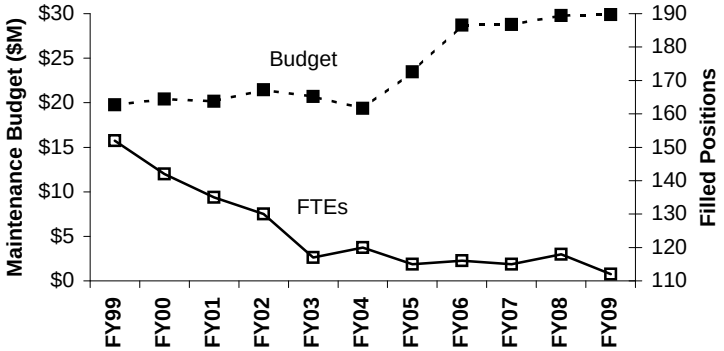


The percentage of predictive maintenance has steadily increased from 0% in FY02 to 15% in FY09. This increase was achieved through the expanded use of lubrication, vibration, thermography, and acoustic/ultrasonic testing techniques. The Condition Monitoring Group continually reviews existing workload and investigates new opportunities and initiatives to expand condition monitoring testing and analysis. Every month a "needs action" list is generated from condition monitoring testing and analysis.

Deer Island's Yearly Maintenance Metrics

Overall Maintenance Program Measures

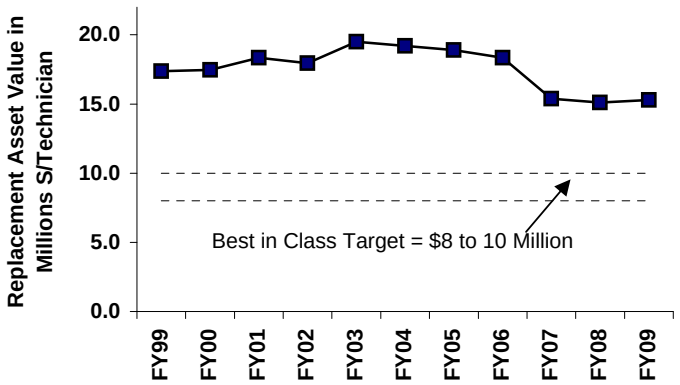
Maintenance Budget and FTEs



The number of Full-Time Equivalent positions or FTEs has steadily decreased over time through staff attrition. Maintenance has been successful in meeting its goals through implementation of numerous maintenance efficiencies including Operations staff performing light maintenance tasks, cross-functional flexibility, and Reliability-Centered Maintenance (RCM).

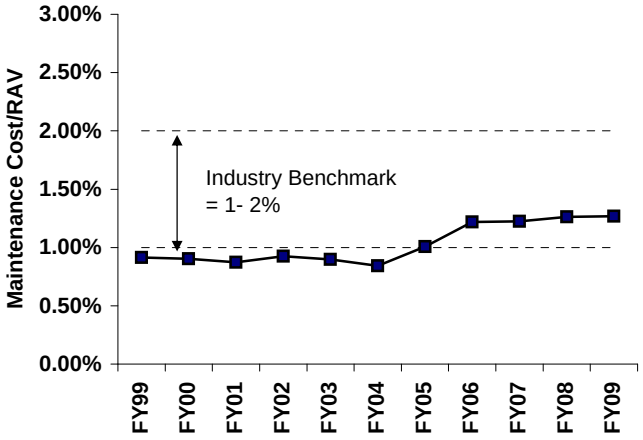
The maintenance budget has and will continue to increase in order to ensure proper maintenance of plant assets due to the plant becoming older and the need to replace obsolete equipment. In FY09, overall spending was slightly higher than in FY08. Capital replacement projects included electrical equipment upgrades, VFD replacements, and relining of the sodium hypochlorite tanks.

Replacement Asset Value/Maintenance Technician



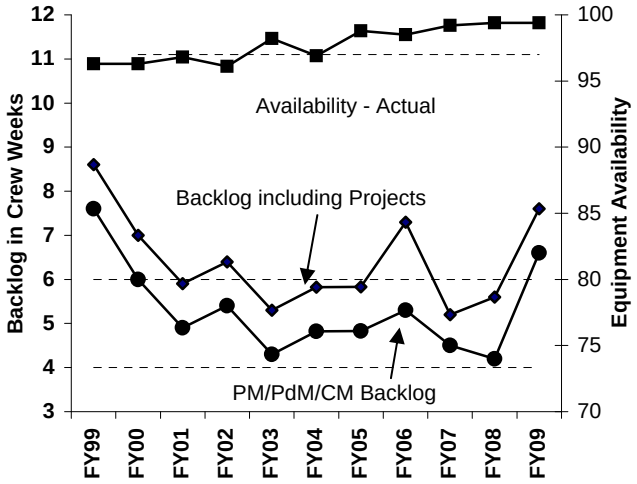
This metric is used to benchmark maintenance staffing. DITP has adopted a world-class target of $8-$10 Million per Technician; DITP exceeds the target at this time. As the plant ages and additional maintenance is required, additional technicians will be required to provide adequate care for plant assets. In FY09, additional outside services supplemented maintenance staffing resulting in an slightly higher value.

Maintenance Cost/Replacement Asset Value



This metric is used to track annual maintenance spending in relation to the industry benchmark of between 1% and 2.0% of Replacement Asset Value. The plant replacement asset value was calculated to be approximately $2.5 billion dollars. DITP's current maintenance spending is within the target range. Additional spending is expected to be required as the plant ages and equipment replacement increases.

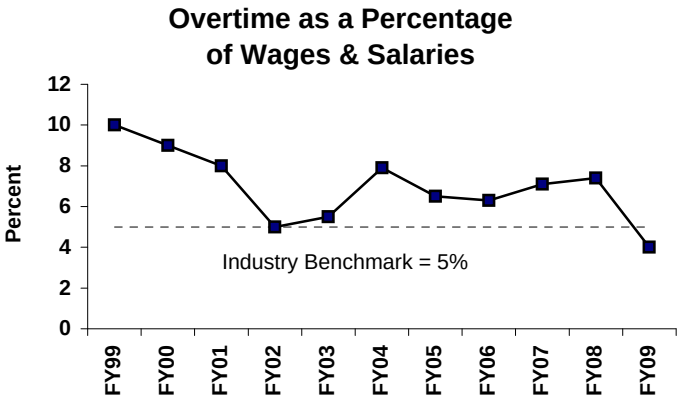
Backlog and Availability



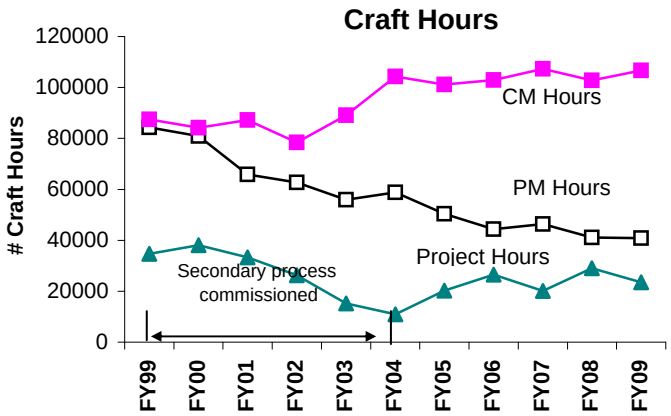
The industry benchmarks for equipment availability is 97% and maintenance backlog is 4 to 6 weeks, respectively. The equipment availability goal has been met the last seven years and was 99.4% for FY09.
The total backlog average for FY09 was 7.6 weeks. In an effort to reduce DI's overtime budget, the backlog has increased. DITP staff are closely monitoring all other key performance indicators to ensure that the backlog is not impacting plant performance. Management continues to prioritize work and limit overtime to repair of critical equipment only.

Deer Island's Yearly Maintenance Metrics

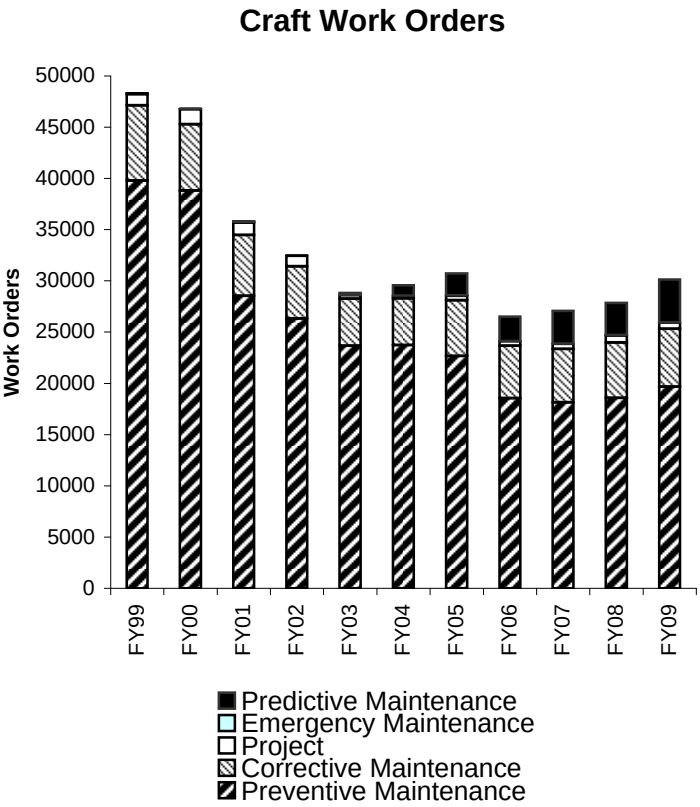
Overall Maintenance Program Measures



Overtime in FY03 to FY08 was higher than the industry benchmark due to the loss of staff from internal transfers and resignations. In trying to reach the Industry benchmark, management has taken steps to reduce overtime spending. This has resulted in a short- term increase in the maintenance backlog. DITP management closely monitors all related key performance indicators to manage and maintain optimal plant performance.



Optimization of the preventive maintenance program through the transfer of some light maintenance tasks to Operations staff (17% of PM hours at the end of FY09), elimination of duplicate work orders, decreasing PM frequency due to equipment history and performance, completion of a PM Optimization effort in FY05, and RCM recommendations, have resulted in a significant decrease (43,363 hours) of PM craft hours from FY99 to FY09.

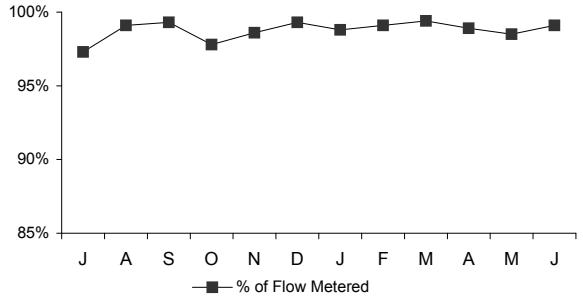


During FY09, the number of total work orders increased by approximately 2,283 (8.2%), compared to FY08. A large portion of the additional work orders was the result of increasing the use of predictive maintenance techniques to monitor more plant equipment. This approach is part of the transition from reactive maintenance to proactive maintenance, using less-intrusive methods, which is part of DITP's strategy to improve overall maintenance. In FY09, the predictive maintenance work orders increased by 25% and the number of emergency maintenance work orders decreased from 32 to 6 compared to FY08.

Operations Division Metering
4th Quarter - FY09

WATER METERS

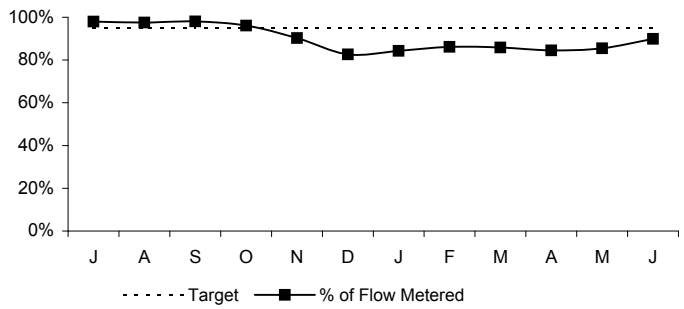
Percent of Total Revenue Water Deliveries Calculated Using Meters



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 4th Quarter, meter actuals accounted for 98.8% of flow; only 1.2% of total revenue water deliveries were estimated.
The following is the breakdown of estimations:
In-house and Capital Construction Projects - 0.4 %
Instrumentation Failure - 0.8%

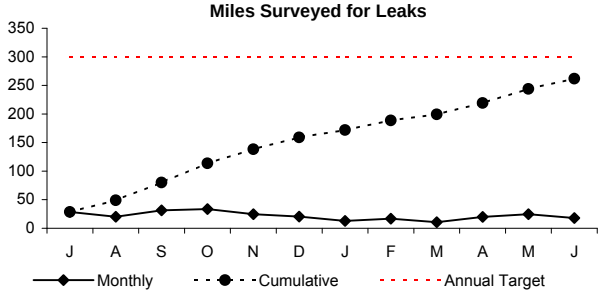
WASTEWATER METERS

Percent of Total Wastewater Transport Calculated Using Meters



The target for revenue wastewater transport calculated using meters is 95%. Estimates, which are generated for meters missing data due to instrument failure and/or erratic meter behavior, are produced using data from previous time periods under similar flow conditions. During the 4th Quarter, meter actuals accounted for 86.61% of flow. Access to many meter sites for maintenance is being impacted by ongoing construction work zone safety issues and the use of flaggers. It should be noted that although the average estimated data is about 14%, up to 10 communities required temporary year-to-date wastewater flow estimates in the range of 20 to 50%; staff were able to correct this in June/July using police details. Staff expect the average of data estimations for these communities will be reduced throughout the remainder of the calendar year.

Miles Surveyed for Leaks



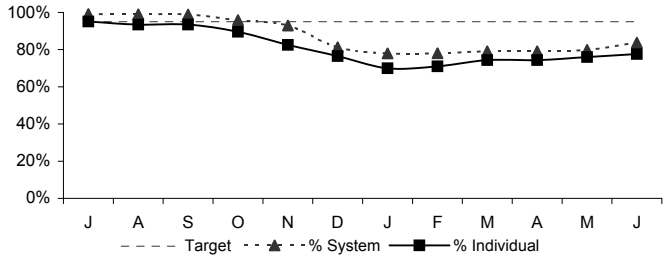
Staff inspected 62.46 miles of MWRA water mains in the 4th Quarter. The total for the fiscal year was 261.84 miles.

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	0	1	0
Leaks Repaired	1	0	0	2	1	1	1	0	0	0	1	0
Backlog	0	0	0	0	0	0	0	0	0	0	0	0
Avg. Lag Time (days)	4.0	4.0	4.0	3.0	2.5	2.0	1.8	1.8	1.8	1.8	1.8	1.8

The Pipeline Program met its goal of repairing all leaks found during the fiscal year; FY09 ended with the backlog at zero.

% METER UPTIME



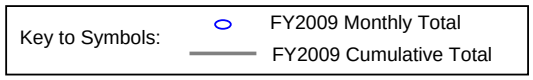
For the 4th Quarter, out of a possible 1,598,688 data points, 305,592 points were missed resulting in an average system-wide up time of 80.86%. Of the 183 revenue meters installed, an average of 44 experienced down time greater than the 5% target, resulting in an average 75.96% individual meter uptime. For the 4th Quarter, down time for an individual meter is defined by any individual meter having less than 2,618 data points. Access to many of the meter sites for maintenance is being impacted by ongoing construction work zone safety issues and the use of flaggers.

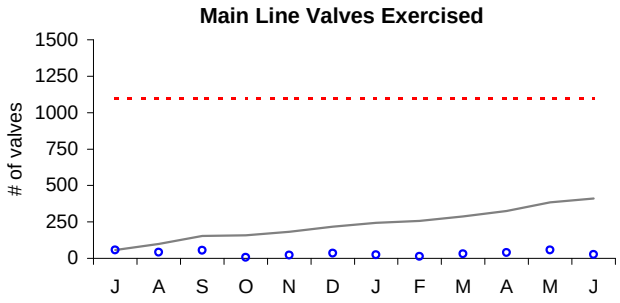
Water Distribution System Valves
4th Quarter - FY09

Background

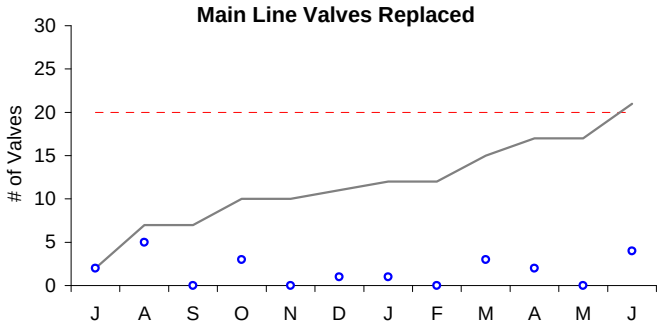
Valves are exercised, rehabilitated, or replaced in order to improve their operating condition. This work occurs year round. Valve replacements occur in roadway locations during the normal construction season, and in off-road locations during the winter season. Valve exercising can occur year round but 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. It should be noted that beginning in October 2008, valve maintenance and repair work has been impacted by coordination issues related to construction/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	85.8%	87%
Blow-Off Valves	1,161	90.3%	94%
Air Release Valves	1,330	91.9%	92%
Control Valves	48	94.0%	92%

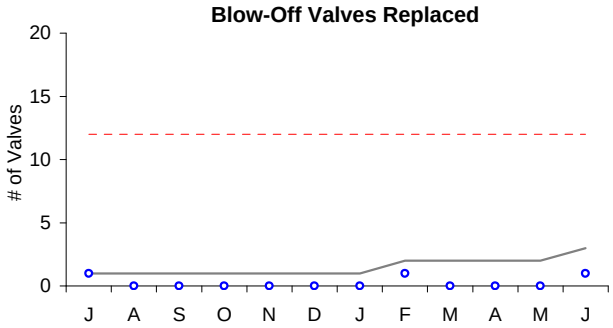




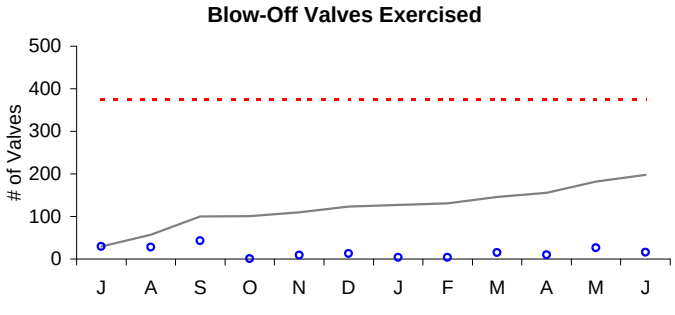
During the 4th Quarter, staff exercised 124 main line valves bringing the total for the fiscal year to 411.



Staff replaced six main line valves in the 4th Quarter; the total for the fiscal year was 21.



Staff replaced one blow-off valve this quarter. Blow-off valve replacements were impacted by several factors this year. Snow storms hampered staff's ability to get to valve work locations. In addition, construction and work zone safety/flagger issues, and current staffing levels, affected the schedule. Staff had hoped to accelerate blow-off valve replacements in the spring and ultimately meet the target but competing priorities (Chelsea Facility security gate, Nut Island water leak, contractor support in various projects, etc.) prevented staff from meeting the target this fiscal year.



In the 4th Quarter, staff exercised 52 blow-off valves, which brought the total for the fiscal year to 198.

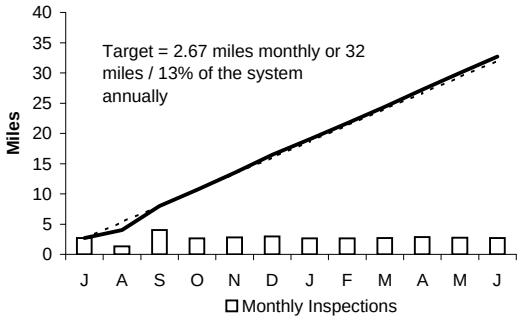
Wastewater Pipeline and Structure Inspections and Maintenance

4th Quarter - FY09

Target ----------
Actual _____

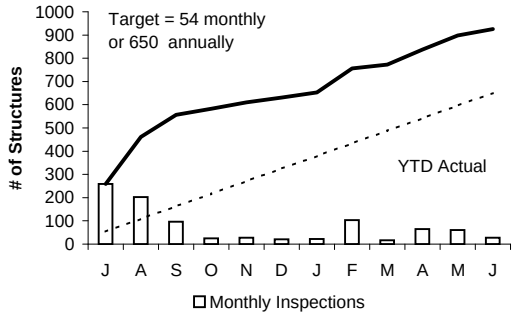
Inspections

Pipeline Inspections



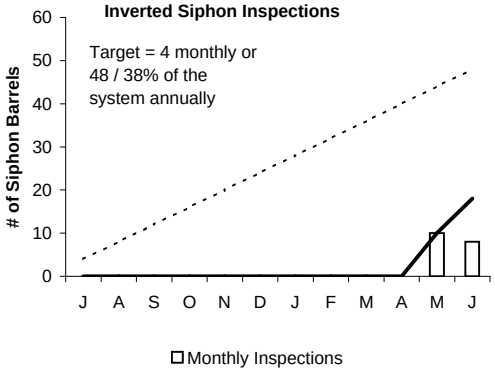
Staff internally inspected 8.29 miles of MWRA sewer pipeline this quarter. Community Assistance sewer inspection was provided to the City of Chelsea (0.15 miles or 800 feet) and the Town of Winthrop (0.11 miles or 590 feet).

Structure Inspections



Staff performed 36 CSO structure inspections this quarter (12 each month) and also performed an additional 116 manhole/structure inspections.

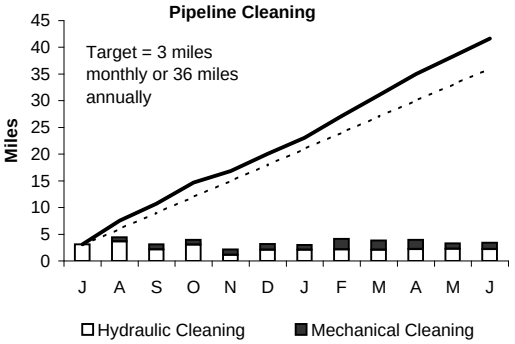
Inverted Siphon Inspections



Staff inspected 18 siphon barrels this quarter. It should be noted that siphon barrel inspections began again in May upon delivery of a new sonar camera and software system. MWRA's previous sonar camera was inoperable for most of the fiscal year. Staff expect a return to more normal monthly inspection numbers in FY10.

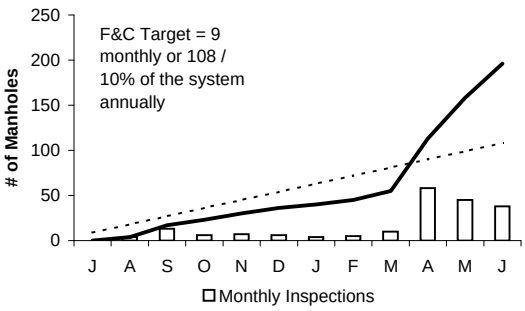
Maintenance

Pipeline Cleaning



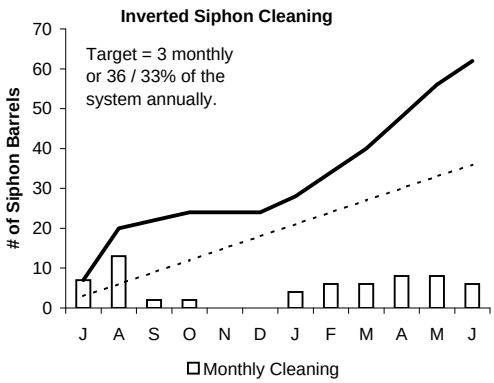
Staff cleaned 10.64 miles of MWRA's sewer system and removed 32 cubic yards of grit and debris during the 4th Quarter. Community Assistance sewer cleaning was provided to the City of Chelsea (0.15 miles or 800 feet).

Manhole Rehabilitation



Staff replaced 141 frames and covers during the 4th Quarter.

Inverted Siphon Cleaning



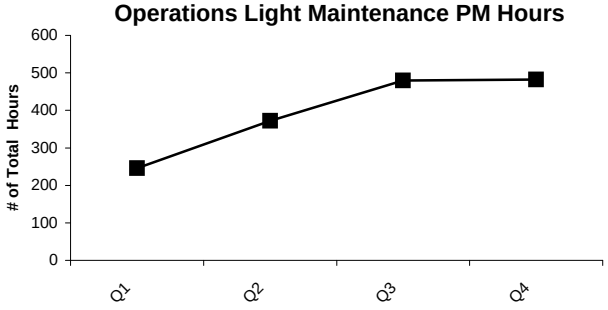
Staff cleaned 22 siphon barrels this quarter.

Field Operations' Metropolitan Equipment & Facility Maintenance

4th Quarter - FY09

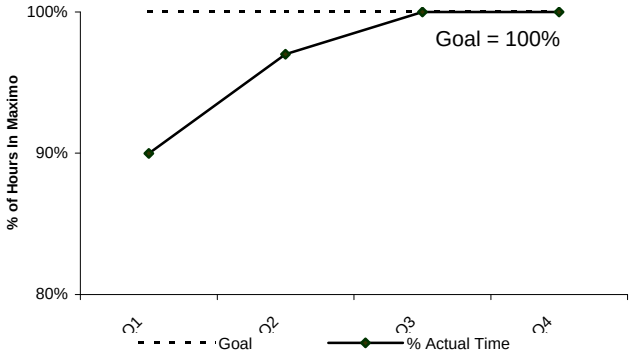
This is a new Orange Notebook page for the Field Operations Department. Several maintenance and productivity initiatives are in progress. Operators performing light maintenance tasks is one of those productivity initiatives. This initiative frees up maintenance staff to perform corrective maintenance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

Operations Light Maintenance PM Hours



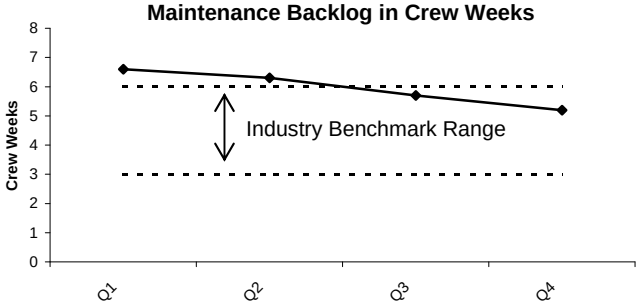
Operations staff averaged 482 hours of preventive maintenance during the 4th Quarter. Overall Operations completed an average 23% of the total PM hours in the 4th Quarter, which is above the industry benchmark of 10-15% of total PM hours completed. Monthly PM hours at the start of FY09 were 168 in July 08; June 09's PM hours were 474.

Time in Maximo



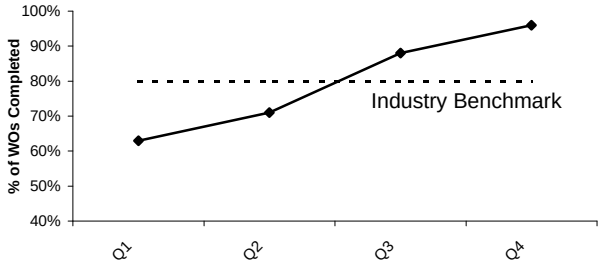
To ensure accurate data in the Maximo database, 8 hours of staff time per day must be entered into Maximo. A new method of time entry into Maximo and the issuance of a daily accountability report has improved the time entry. 100% of time was entered in the 4th Quarter and for the past six months.

Maintenance Backlog in Crew Weeks



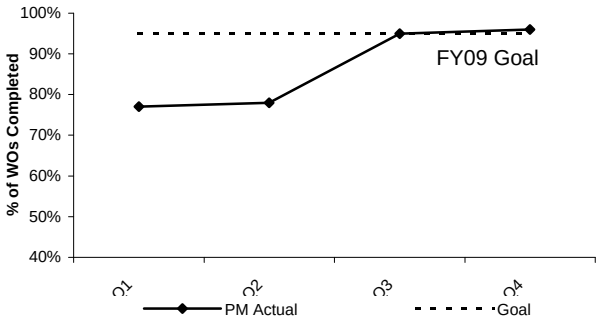
The 4th Quarter backlog average is at 5.2 weeks while overtime spending is $48K under budget for the year. Management's goal is to control overtime and still stay within the industry benchmark of 3 to 6 weeks. The backlog has decreased from 6.6 weeks in July 08 to 5.0 weeks in June 09.

Overall Preventive Maintenance



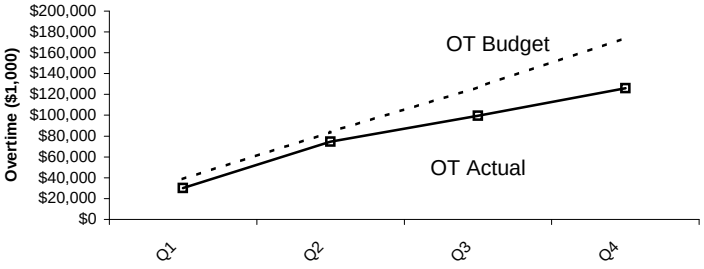
FOD's preventive maintenance goal includes completion of 80% of all PM work orders; an average of 96% of all PMs were completed in the 4th Quarter. The PM completion rate increased from 45% in in July 08 to 97% in June 09. The goal will be raised to 100% in FY10.

Operations Light Maintenance % PM Completion



Operations' PM goal is the completion of 95% of all PMs. Operations completed an average of 96% in the 4th Quarter. The PM completion rate increased from 63% in June 08 to 97% in July 09.

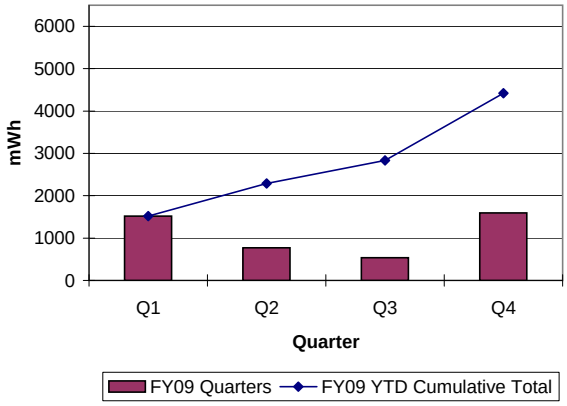
Overtime Spending



Maintenance overtime was $11K under budget for the 4th Quarter and $48K under budget for FY09. Overtime was used to support call-ins for emergency maintenance, repairs at Nut Island identified by SCADA testing, Waban dam maintenance, and striping the Chelsea Facility's parking lot to reflect a new parking layout.

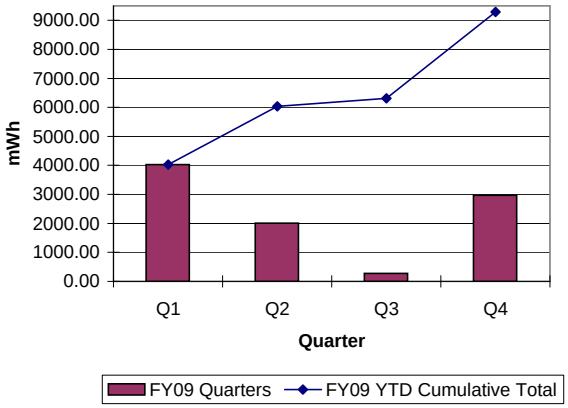
Field Operations Hydroelectric Generation Quarterly Report
4th Quarter - FY09

Quarterly Totals for Hydro Production at Cosgrove Hydroelectric Generation Facility



In the 4th Quarter, Cosgrove generated a net of 1,593 mWh. The cumulative total for FY09 was 4,425 mWh - double the power generated in FY08. Cosgrove revenue in the 4th Quarter was $50,032; the fiscal year total was $218,175.

Quarterly Hydro Production at the Oakdale Hydroelectric Generation Facility



In the 4th Quarter, Oakdale generated a net of 2,972 mWh, 5% higher than the same quarter in FY08. The total revenue for the fiscal year was $798,888. (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.)

Highlights:

Loring Road Hydroelectric Generation Feasibility Study: MWRA was awarded $1.5 million from SRF. Construction to begin 2/2010.

Wachusett Dam Hydroelectric Generation Study: MWRA completed a feasibility study for the installation of a generator at the existing gatehouse through which water is discharged to the South Branch of the Nashua River. MWRA was awarded a $375,000 Massachusetts Technology Council grant for design and construction.

Lonergan Intake and Winsor Dam Hydro Studies: MWRA is conducting feasibility studies of hydroelectric power at these two facilities.

CWTP Photovoltaic: A feasibility study has been completed for the placement of a PV system up to 480 kW on the DAF platform or on the roof. MWRA was awarded $1.1 million from SRF for this project. Another PV system is being evaluated for the roof of the storage tank.

Southborough Photovoltaic: A feasibility study has been completed for the Trade Shop Roof. The feasibility of installing PV on the roof of the new lab building is also being studied.

Nut Island Wind Power: The installation of wind turbines at Nut Island continues to be studied. staff is working with the City of Quincy to resolve some siting issues. MWRA had previously received a $500,000 design and construction grant from MTC for this project.

DeLauri Wind. The feasibility of installing a wind turbine at DeLauri Station continued to be studied. MWRA was awarded $4.75 million from SRF for this project.

CWTP Energy Audit: Recommendations from the energy audit regarding process changes at Carroll, primarily installation of demand controlled ventilation in the office space and VFDs, are being further investigated.

Chelsea Facility Energy Audit: The second phase of the audit, a study of the HVAC system, began in the 4th quarter of FY09 and will be completed in the 2nd quarter of FY10. 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.

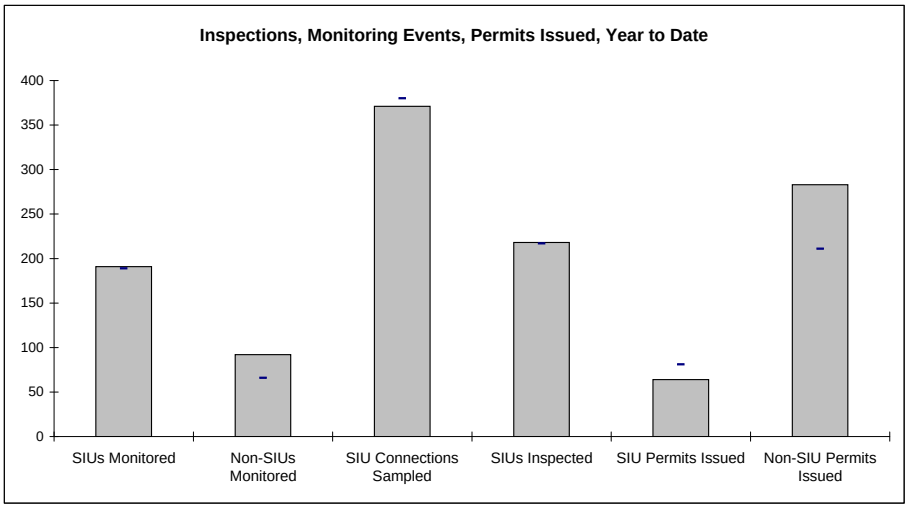
Energy Audit of Eight FOD Facilities: MWRA staff identified eight facilities that could benefit from comprehensive energy audits: Chelsea Creek, Columbus Park, and Ward Street Headworks; Spot Pond, Newton St, Commonwealth Ave, and Prison Point Pump Stations; and the Chelsea Screen House. These facilities used 10,692,605 kWh of electricity in FY07. The focus of the audit is lighting, HVAC, pumps, and motors. The audits began in the 4th quarter of FY09 and will be completed by the end of the first quarter of FY10. A report is expected in October.

Energy Audit of Southborough Facility: NSTAR and its contractor began the audit during the 3rd Quarter and completed it in the 4th quarter. The report detailing energy saving recommendations is expected in early September.

Six Water Pump Station VFD Installations: VFDs are being installed for better process control and energy efficiency.at five water pump stations: Brattle, Belmont, Hyde Park, Newton St., Reservoir Rd., and Spring St. Installation is complete at Brattle Court and MWRA received a $68,000 rebate check from NSTAR. It appears from preliminary data that we are using approximately 50% less energy at the station. The other stations will be completed over the next 12 months.

Toxic Reduction and Control

4th Quarter - FY09



EPA Required SIU Monitoring Events
for FY09: 189
YTD : **191**

Required Non-SIU Monitoring Events
for FY09: 66
YTD : **92**

SIU Connections to be Sampled
For FY09: 380
YTD: **371**

EPA Required SIU Inspections
for FY09: 217
YTD: **218**

SIU Permits due to Expire
In FY09: 81
YTD: **64**

Non-SIU Permits due to Expire
for FY09: 211
YTD: **283**

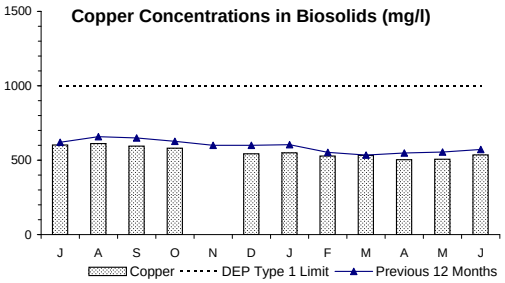
Significant Industrial Users (SIUs) are MWRA's highest priority industries due to their flow, type of industry, and/or their potential to violate limits. SIUs are defined by EPA and require a greater amount of oversight. EPA requires that all SIUs *with flow* be monitored at least once during the fiscal year. The "SIU Monitored" data above reflects the number of industries monitored. However, many of these industries have more than one sampling point and the "SIU Connections Sampled" data reflect samples taken from multiple sampling locations at these industries.The data above includes an adjustment to the monitoring and inspection events previously reported; these final FY09 totals are correct.

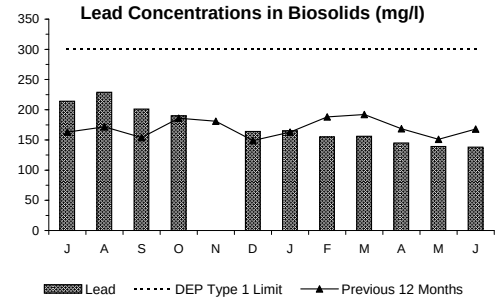
The annual goal is set at the beginning of the fiscal year but it can fluctuate due to the actual number of SIUs at any given time. During the course of the year, some SIUs do not discharge and cannot be monitored. TRAC's monitoring plan requires one additional sampling event for 40% of the SIUs and two additional sampling events for 10% of the SIUs. TRAC also monitors one-third of the non-SIUs each year.

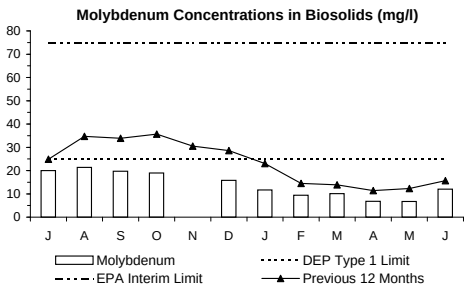
SIU and Non-SIU permits are issued with durations of two to five years, depending on the category of industry, varying the number of permits that expire in a given year.

Number of Days to Issue a Permit								
	0 to 120		121 to 180		181 or more		Total Permits Issued	
	SIU	Non-SIU	SIU	Non-SIU	SIU	Non-SIU	SIU	Non-SIU
Jul	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	2	8	0	3	0	3	2	14
May	20	13	1	0	2	2	23	15
Jun	17	14	1	3	1	5	19	22
% YTD		81%		9%		9%	64	283

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, no metals data was included in the three graphs to the right for the month of November 2008.

Field Operations' Highlights
4th Quarter - FY09

Western Water Operations & Maintenance

- Carroll Water Treatment Plant (CWTP): The plant was shut down twice to isolate portions of the ozone generator cooling water system while the closed-loop cooling water contractor installed three new valves. One additional shutdown was conducted as SCADA staff installed redundant power supplies to the communication loops in the Ozone and Chemical Buildings. Staff also began the fluoride pump replacement project, which will install new diaphragm pumps that will replace the existing maintenance-intensive hydro tube pumps.

- Oakdale Power Station: Staff replaced six insulators on the high side of the transformer in the 13.8 kV-substation and also re-graded the access road into the substation.

- Winsor Power Station: Staff aligned the station to provide isolation while the contractor installed a combination (fixed-orifice/movable orifice) valve to replace the existing Chapman valve.

Metro Water Operations & Maintenance

- Main Line Valve Replacements and Leak Repairs: Staff replaced six valves this quarter - Southborough, Gillis Pump Station, Malden and Revere. Water Pipeline staff also repaired two leak repairs at Shaft 8 and Shaft 9 this quarter. The leak repair at Shaft 9 required the design, purchase, and installation of a special encapsulating coupling and extensive excavation and shoring. In total, staff repaired all seven leaks detected during the fiscal year.

- Phase 2 Pump Station Rehabilitation Contract: Four of the five pump stations in the contract now have new pumps in operation and Belmont Pump Station was completed.

- Dig Safe Pilot Program: During the 4th Quarter, MWRA received 613 notices, 114 of which were of an emergency nature; 57 emergency mark-outs and 78 regular mark-outs were required.

- Bear Hill Tank Cleaning: A contractor cleaned the Bear Hill Water Tank in June with a robotic vacuum device while the tank was in service (Bear Hill is the only tank in the service area). The operation went well and no water quality complaints were received as a result of the cleaning operation.

Wastewater Operations & Maintenance

- Training: Operators have participated in extensive training this quarter in process control techniques, vendor equipment training, and wastewater classes to keep abreast of all MWRA facility changes and new industry safety standards.

- Preventive Maintenance: The combined efforts of Operations and Maintenance increased the success of Field Operations' preventative maintenance program, with a minimum average completion rate of 97%.

TRAC

- Settlement Agreement between The Forsyth Institute and MWRA: MWRA and The Forsyth Institute entered into a Settlement Agreement, effective April 23, 2009, to resolve all issues related to the October 10, 2008 Penalty Assessment Notice (PAN) resulting from the discharge of excessive levels of mercury into MWRA's sanitary sewer system after the March 10, 2008 compliance deadline. Forsyth had appealed the PAN. The Settlement Agreement requires Forsyth to pay a $25,000 administrative penalty, implement a compliance schedule, and pay stipulated penalties for a period of two years.

Metro Equipment and Facility Maintenance

- Gillis Pump Station-Pump 7 Surge Valve: Water Pipeline crews installed a new surge control valve for Pump 7; MWRA's electricians wired the new valve actuator and director.
- Nut Island Grit Belt Drain Line Modification: Plumbers modified the grit system drain line to facilitate more frequent cleanouts. Previously, plumbers were required to break apart the piping to clean out the drain lines if clogs occurred.
- HVAC Replacements: Staff replaced the air handling unit at the Somerville CSO facility and the air conditioning system in the Belleview Tanks' SCADA Control Room.
- Chelsea Facility Security Guard Shack: Electricians installed the underground electrical service for the new guard shack and ran conduit for security equipment and telephone service.
- Dam Maintenance: The Chestnut Hill Reservoir "bowl" was cut with the Slopemaster and the Waban bowl was cleared of growth in the rip rap. Planning is underway to address specialized repairs. The Fells dams are complete except for another cutting of Dam 8, followed by hydro-seeding.
- Bellevue Tanks: Grounds crews trimmed back trees outside the fenced enclosure and also removed growth from the mortar joints on the tanks.
- Chelsea Facilities Upgrade: Grounds crews relocated all the trees and some other plantings along the front of the site in preparation for the installation of the new security guard shack and roadway access changes.
- Columbus Park Front Stairs: Masons and Carpenters replaced the concrete front stairs at Columbus Park with a galvanized steel flight; a new flagpole was also installed.

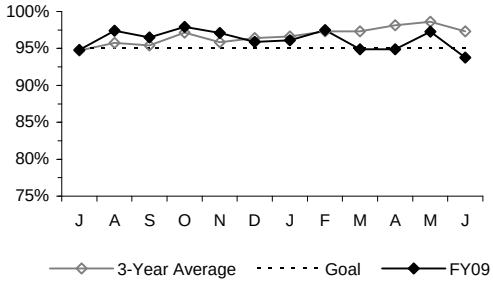
Operations Support

- Updating Emergency Plans: Staff began updating MWRA's Emergency Response Plans to reflect new DEP requirements. Staff are also preparing a template, supporting material and a related training program to help communities comply with the 12/31/09 deadline for compliance with DEP requirements.
- Start-up Testing: Hyde Park Pump Station Acceptance Testing began in June; inactive suction and discharge lines were flushed in April and May. The new Blue Hills Tanks are also nearing start-up, which staff expect will happen in August.
- Headworks SCADA Project: Replacement of flow measuring equipment at Ward Street and Columbus Park Headworks continued to be studied to estimate the related impact on sewer flow-based assessments for BWSC. Further testing of the new headworks flow measurement systems in those locations is planned after facility SCADA work is completed. In June, the Headworks contractor completed planned Nut Island work and began acceptance testing.
- Sampler Training: Staff completed the current round of Community Sampler Training; a total of six sessions were held for community staff.
- On-line Water Quality Monitoring: Staff continue to analyze and update the distribution water quality monitoring analyzer strategy due to continuing equipment and vendor support issues. Staff researched vendor capabilities, surveyed practices in other communities with installed systems and are currently trying to resolve communication and data processing issues. A revised schedule and purchase specifications for upgrading on-line monitoring sites are being prepared.
- LIMS Transition: Staff continued to address issues related to the new LIMS system after the switchover in January.

Laboratory Services

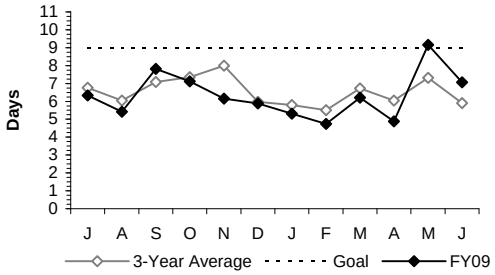
4th Quarter - FY09

Percent On-Time Results



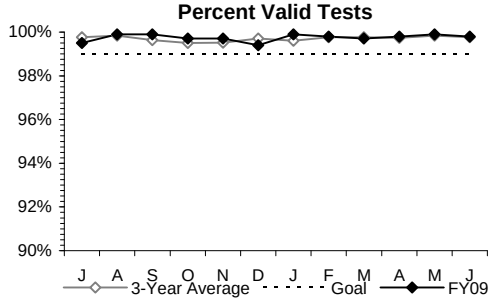
The Percent On-Time measurement dipped below the 95% goal this quarter due to staff's focus on implementing the new LIMS.

Turnaround Time



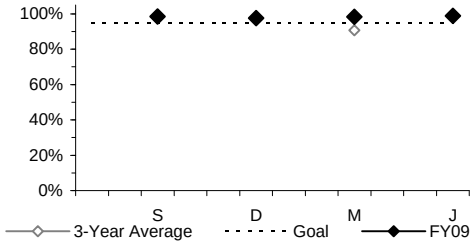
Turnaround Time was faster than the 9-day goal.

Percent Valid Tests



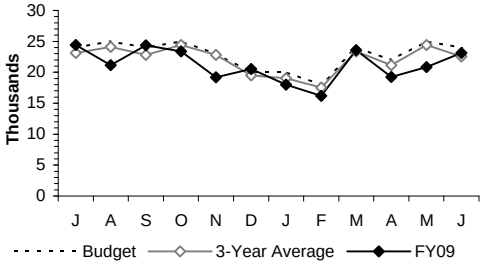
The Percent Valid Tests measurement stayed above the 99% goal in the 4th Quarter.

Quarterly Compliance Rating



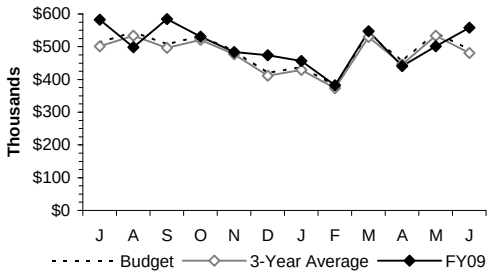
Compliance audits of analysis and maintenance log books at all five laboratory locations found good compliance with requirements. Compliance audits are performed quarterly.

Tests Completed



The Tests Completed measurement was slightly below the seasonally adjusted budget goal due to the impact of preparing for the new LIMS.

Value of Services Rendered



The Value of Services measurement was above the seasonally adjusted budget projection this quarter.

Highlights:

DEP Certification: DLS obtained first-in-the-state DEP certification for a new mercury method and for semi-volatile organics and also became certified for PCBs in drinking water.

Quality Assurance: Completed Quality Assurance Project Plan for the fish and shellfish testing for the Harbor and Outfall Monitoring Program. Continued to work on new drinking water microbiology certifications in support of the up-coming Groundwater Monitoring Rule.

DITP: Testing segregated batches of fertilizer pellets to demonstrate that they meet MA limits; tested rush sodium hypochlorite samples, special grade sodium hydroxide from the Thermal Power Plant, and DITP effluent for dissolved silicate for ENQUAD. The Central Lab's samples have been relocated to a refrigerated trailer so that the Sample Bank's refrigeration units can be replaced. The roof of the building where the refrigeration units are located is also being replaced.

ENQUAD: The harbor sampling crew reported dry weather discharge from an airport outfall caused by a broken water main. Collected Red Tide (Alexandrium) samples from Boston Harbor and tested samples from the Harbor and the Bay to study the spread of Alexandrium. Flounder samples are being tested for contaminants under the Harbor and Outfall Monitoring program.

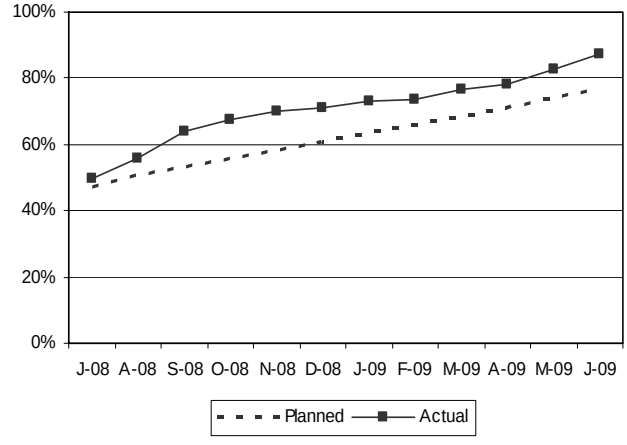
FOD/Water Quality Assurance: Tested approximately 600 samples for the semi-annual Lead and Copper Rule program, including samples from schools that previously had elevated lead levels. Developed and delivered community sampler training. Tested customer complaint samples from a Boston condo, and water and soil samples from Sudbury Aqueduct.

Outside Customers: Tested rush samples for Reading to help identify the source of an apparent leak, Marlborough complaint samples for volatile organics, and samples for a Charles River swim event. Finished two weeks of testing and tested additional wet weather samples from Fort Point Channel to assist Save The Harbor/Save The Bay with a water quality flagging project at the Children's Museum.

CONSTRUCTION PROGRAMS

Projects In Construction - 1
June 2009
(Progress Percentages based on Construction Expenditures)

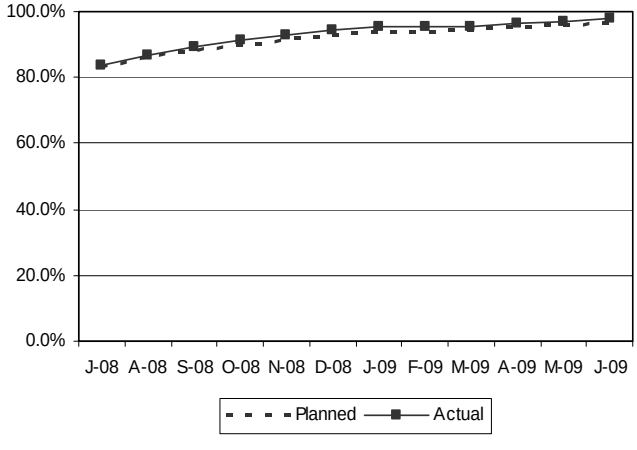
Blue Hills Covered Storage Design Build Project
Progress - June 2009



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 June, the contractor continued installation of the electrical systems, controls and plumbing in the valve vault. The dam core wall was completed and the rip rap work continues on the reservoir side. The communication structure was installed including the emergency generator. Installation was completed on the precast outlet control structure, reservoir gate vault, and liner at the detention basin. The contractor reached 90% completion on backfilling and grading and completed 100% of the plantings on the reservoir side of the dam.

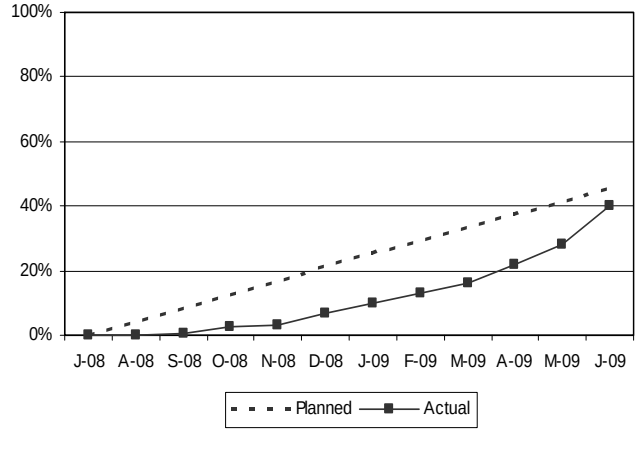
North Dorchester Bay CSO Tunnel/Shafts
Progress -June 2009



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 June, at the Conley maintenance access structure, the contractor placed 2 of the 6 permanent structure wall pours and continued construction on the remaining structure. At CSO-081 the contractor continued reworking the tide gates. At -082 the contractor completed the final mill and overlay of the roadway. At -084 the contractor completed all restoration except for the I St. Greenway. At -085 rework continued on the hydraulic control vault. At -086 Logan Way pipe work commenced and at the -087 the pipe connection to access structure was completed. Only punch list work remains at the -087 maintenance access structure. Beginning in July, reporting will transfer to CP-3 North Dorchester Bay Pump Station and Sewers.

East Boston Branch Relief Sewer
Progress - June 2009

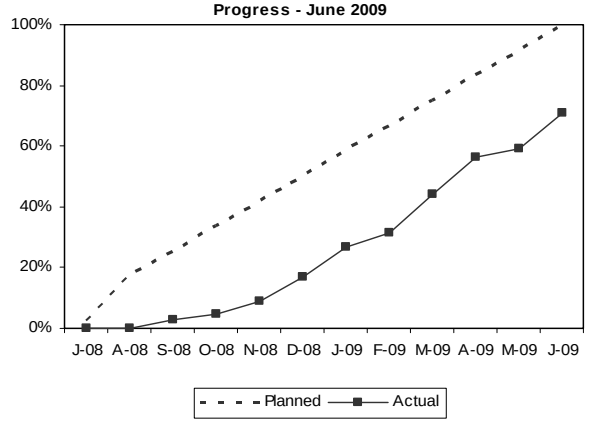


Project Summary: Construction of 14,500 feet of replacement sewers primarily by microtunneling.

Status and Issues: The contractor continued support of excavation at Receiving Shaft (RS) – 1A, -8A, -9, -11 & -13A and Jacking Shaft (JS) – 10A, 12A & -14A. The concrete base slabs have been places at RS-2, -3, -6A & -9A and JS-1A, -3, -4A, -5A, -6A, -7A, -8A & -9A. Preparation to receive the MTBM continued at RS-3. Microtunneling was completed from JS-4A to JS-6A on June 12th. Microtunneling is currently underway from JS-4A to RS-3. The contractor continued support of utilities outside of the excavation zone at RS-11 and structural assessment of the retaining wall at 369 Border Street.

Projects In Construction – 2
June 2009
(Progress Percentages based on Construction Expenditures)

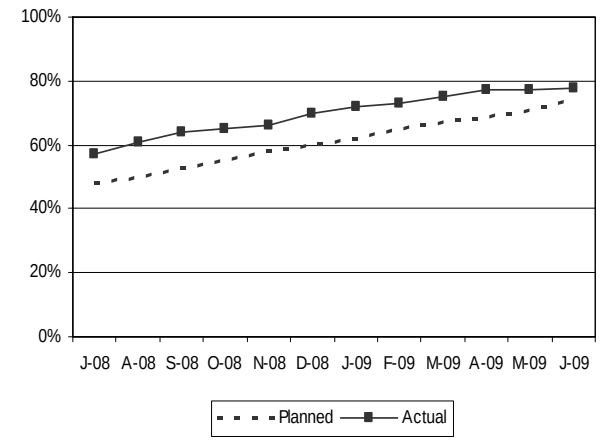
Cottage Farm/Brookline Connection and Inflow Controls
Progress - June 2009



Project Summary: Construction will activate the existing 45" 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: On June 30th, the contractor achieved substantial completion of Milestone 1 work in accordance with the contract documents and Federal Court Order. Milestone 1 is all construction except site restoration and plantings. Work completed during June includes wiring at remote sites, Cottage Farm instrumentation, restoration work and testing of sluice gates in the North Charles Relief Sewer (NCRS) and South Charles Relief Sewer (SCRS) overflow chamber.

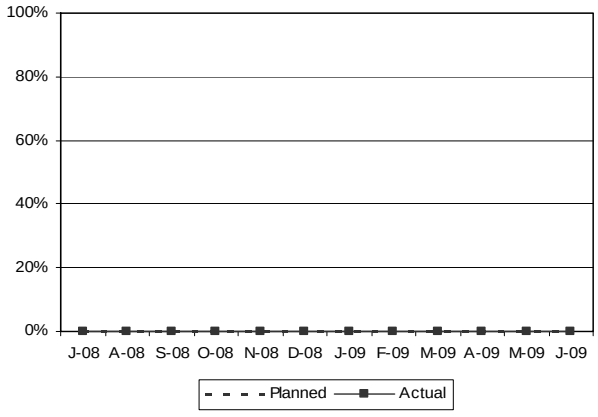
Rehabilitation of Water Pumping Stations
Progress - June 2009



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 successfully completed the concrete bulk head for discharge piping, demolition of Phase 2 equipment and continued work on section 36 pressure reducing station. At Hyde Park, the contractor completed Phase 1 field checkout and start-up, including a 30 day testing and commenced 21-day acceptance testing. Demolition work began for Phase 2. At Belmont the contractor continued work on miscellaneous punch list items. At Spring Street the contractor completed grouting Pump 4 engine drive frame & anchoring, installed exterior cooling lines for Pump 4 and continued the 30-day field checkout on Phase 1.

Hultman Aqueduct Interconnections Project
Progress - June 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: The project was advertised on April 11th with a bid due date of June 25th. Six bids were received and opened. Award is scheduled for the July 15th Board Meeting to the low bidder, Barletta Heavy Division, in the amount of $47,543,388 with a contract term of five years. The latest engineering estimate at the time of award is $61.8 million.

CSO CONTROL PROGRAM

4th Quarter FY09

24 of the 35 projects in MWRA's Long-Term CSO Control Plan are complete, two more than reported last quarter. The additional completed projects are Cottage Farm Brookline Connection and Inflow Controls, which MWRA substantially completed June 30, 2009, and Morrissey Boulevard Storm Drain, which BWSC substantially completed July 15, 2009 (Q1-FY10). Currently, six projects are in construction or have early-phased contracts completed as design of later contracts continues and four additional projects are in design. MWRA plans to commence design of 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	Tunnel Construction: tunnel and end shafts are complete; work continues with piping and controls at CSO and stormwater diversion structures. All tunnel contract work is expected to be substantially complete by August 2009, four months ahead of schedule. Dewatering Pump Station and Sewer construction: contract awarded at 4/15/09 Board meeting for $25.9 million. NTP issued 5/4/09, in compliance with Schedule Seven. Ventilation Facility design: final design of below-ground ventilation facility continues for planned October 2009 construction award.
East Boston Branch Sewer Relief	Mar 00 Jun 06	Mar 03 Jun 08	Jun 10	Contract 1 (interceptor relining) completed 2004. Contract 2 (micro-tunneling) is approx. 40% complete; delays due to utility conflicts and shaft changes are expected to be offset; 3,373 feet of micro-tunneling (27%) are complete. Contract 3 (pipe-bursting) awarded at 4/15/09 Board meeting for $7.3 million. NTP issued 4/24/09; utility surveys are complete; shaft construction has commenced.
Cottage Farm Brookline Connection and Inflow Controls	Sep 06	Jun 08	Jun 09	Construction substantially completed 6/30/09, in compliance with Schedule Seven, and new facilities are being used in wet weather operations and are operating as intended.
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. From recent supplemental hydraulic modeling, MWRA concludes that no system improvements can improve wet weather performance (further reduce CSOs at Cottage Farm Facility) with flooding risks. Recommended plan is "no action." Final report in prep for submission to EPA and DEP in August 2009.
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 substantially completed construction on July 15, 2009, two weeks later than court milestone due to late conflict with unforeseen underground structure.
Reserved Channel Sewer Separation	Jul 06	May 09	Dec 15	BWSC final design underway; BWSC awarded first of nine planned construction contracts on 3/19/09 for $6.9 million ($5.9 million MWRA-eligible); remaining contracts are in final design; second contract to be advertised by BWSC 11/09.
Bulfinch Triangle Sewer Separation	Nov 06	Nov 08	Jul 13	BWSC commenced construction contract 9/25/08, and progress is on schedule for BWSC proposed substantial completion by July 2010, ahead of court milestone.

Brookline Sewer Separation		Nov 06	Nov 08	Jul 13	Brookline commenced first of two construction contracts on 11/21/08, and construction is on schedule; second contract to be advertised 10/09. MWRA is developing scope of contract to inspect, clean and repair Outfall MWR010 in time for Brookline's July 2013 project completion.
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. Cambridge is obtaining construction permits and easements, and is coordinating work in Alewife Reservation with DCR. Cambridge proposes construction award by April 2010.
	CAM004 Sewer Separation	Jan 97	Jul 98 Jul 09*	Jan 13*	Cambridge plans to resume design in summer 2009.
	CAM400 Manhole Separation	Jul 06*	Jul 07*	Jul 08*	Cambridge commenced design 10/08. Design progress is on schedule. Cambridge proposes construction award by January 2010.
	Interceptor Connection Relief/ Floatables	Jul 06*	Jan 08*	Dec 08*	Cambridge commenced design 10/08. Design progress is on schedule. Cambridge proposes construction award by January 2010.
	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
June 2009

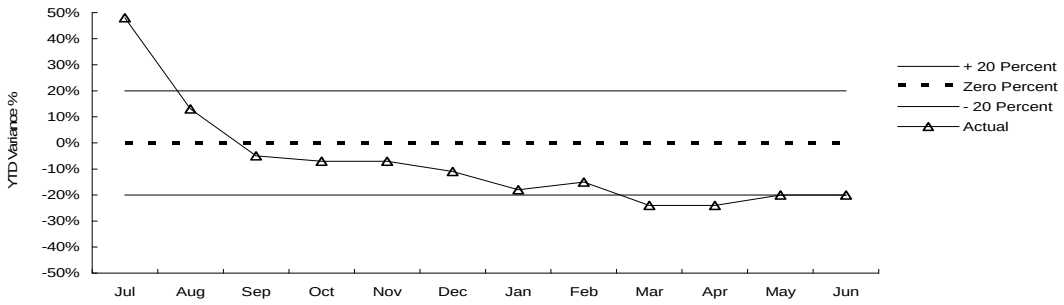
Accurate projections of CIP spending are one measure of effective project management and are important to ensuring that funds are available to support MWRA's capital program.

FY09 Capital Improvement Program Expenditure Variances through June by Program ($000)				
Program	FY09 Budget Through June	FY09 Actual Through June	Variance Amount	Variance Percent
Wastewater	150,310	123,707	(26,603)	-18%
Waterworks	67,864	52,854	(15,010)	-22%
Business and Operations Support	11,253	5,673	(5,580)	-50%
Total	$229,426	$182,234	($47,192)	-21%

Underspending within Wastewater is primarily attributable to awards being less than budget and delays in start-up of the East Boston Branch Section 38 & 207 Replacement, West Roxbury Tunnel Design, and North Dorchester Dewater Pump Station & Sewers contracts. Also, there were start-up delays for the Heat Loop Pipe Replacement, Primary & Secondary Clarifier Rehabilitation and Power System Improvements contracts. 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 and Construction Management Services underruns and unused allowances also contributed to this underspending. Underspending was partially offset by accelerated progress on Electrical Equipment Upgrade Construction 3 and more community requests for loans and grants than anticipated. Underspending in Waterworks is primarily due to a revised schedule for the Hultman Rehabilitation contract (CP6A), Northeast Segment (CP5), and a lower-than-expected award for the Closed Loop Cooling System at John J Carroll Water Treatment Plant was less than expected. This underspending was partially offset by accelerated contractor progress on the Blue Hills Covered Storage project and more community requests for loans than anticipated.

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 6/30/09	$200 million
Unused capacity under the debt cap:	$605 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

4th Quarter - FY09

Background

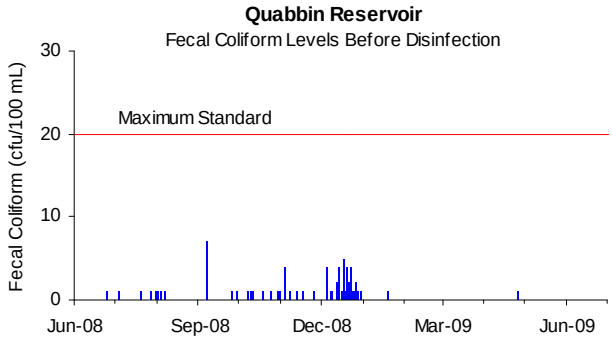
Total coliform bacteria are monitored in both source and treated water to provide an indication of overall bacteriological activity. Most coliforms are harmless. However, fecal coliform, a subclass of the coliform group, are identified by their growth at temperatures comparable to those in the intestinal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

All samples collected during the 4th Quarter were below 20 cfu/100ml.

For the current six-month period, 0.0% of the samples exceeded a count of 20 cfu/100ml.

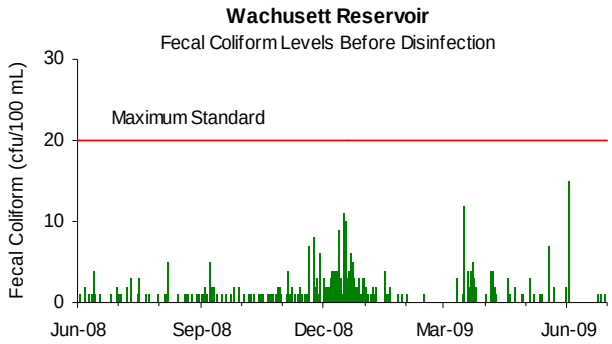


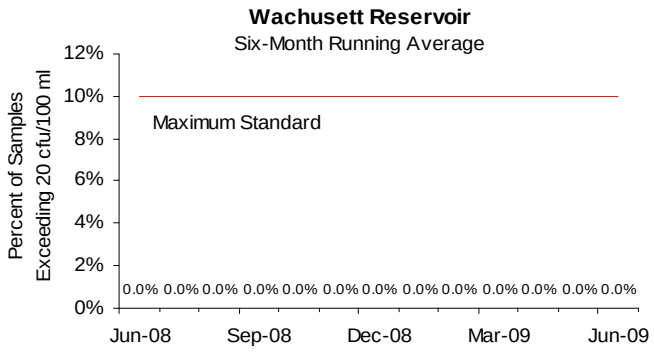
Sample Site: Wachusett Reservoir

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

All samples collected during the 4th Quarter were below 20 cfu/100ml.

For the current six-month period, 0.0% of the samples exceeded a count of 20 cfu/ 100ml.





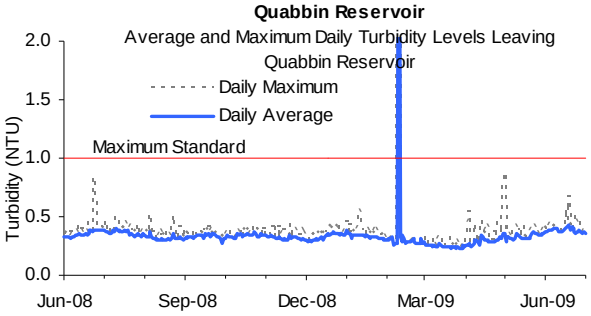
Source Water – Turbidity

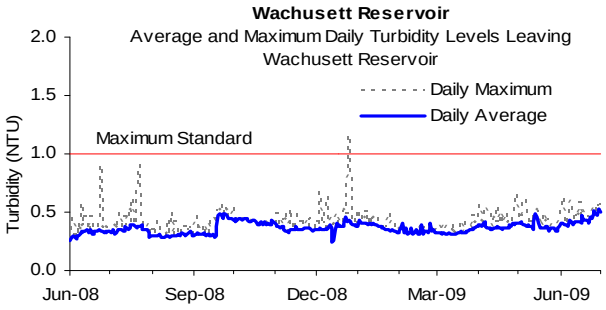
4th Quarter - FY09

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.

Samples for turbidity from Quabbin Reservoir are collected at the Ware Disinfection Facility before chlorination. Samples from Wachusett Reservoir are taken at the CWTP's inlet (raw water line) before ozonation. The Massachusetts Department of Environmental Protection standard for source water turbidity for unfiltered water supply systems is a maximum of 1.0 NTU; the EPA standard is a maximum of 5.0 NTU. Maximum turbidity results at Quabbin and Wachusett were within DEP standards for the quarter.





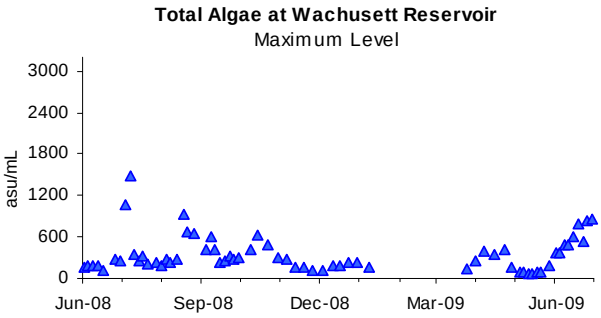
In February 2009, there was a spike in turbidity at Quabbin when a planned valve operation disturbed sediment but did not disrupt disinfection effectiveness and was not a violation.

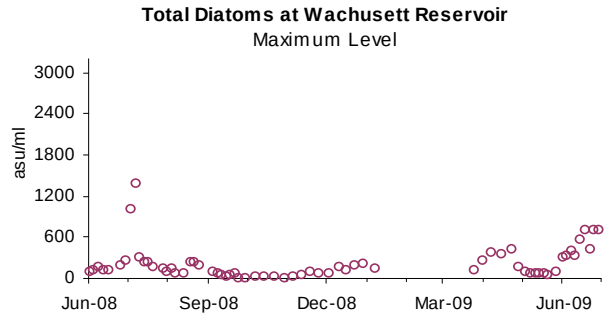
Source Water – Algae

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 algaecide. While not a taste and odor concern, consumers using filters may notice more frequent need to change them. Diatom levels are currently low.

Of the 386 complaints received for the quarter from local water departments, none concerned taste and odor that may be due to algae.





Treated Water – Disinfection Effectiveness

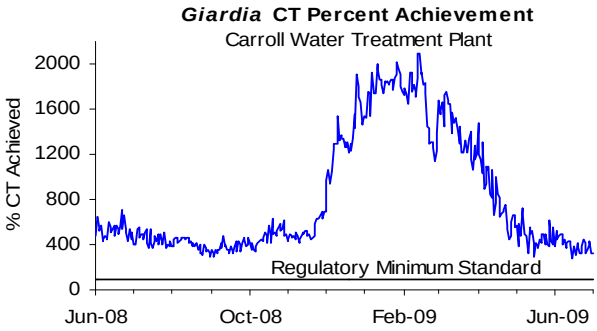
4th Quarter - FY09

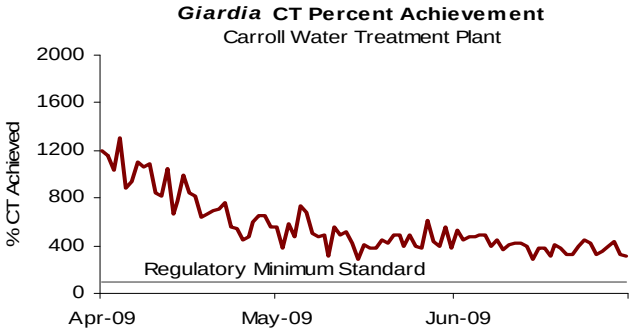
Background

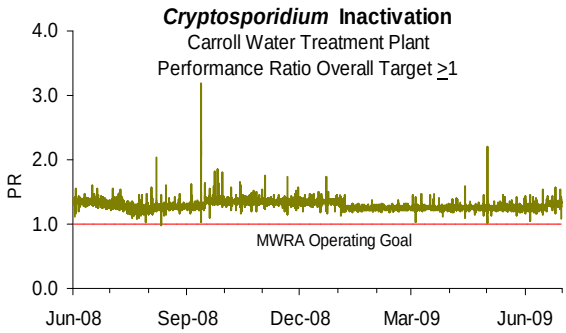
With the activation of the Carroll Water Treatment Plant (CWTP), MWRA now reports on both regulatory required 99.9% inactivation for *Giardia* (reported as "CT"), and its voluntary operating goal of 99% inactivation for *Cryptosporidium* (reported as "PR"). MWRA calculates hourly CT inactivation rates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

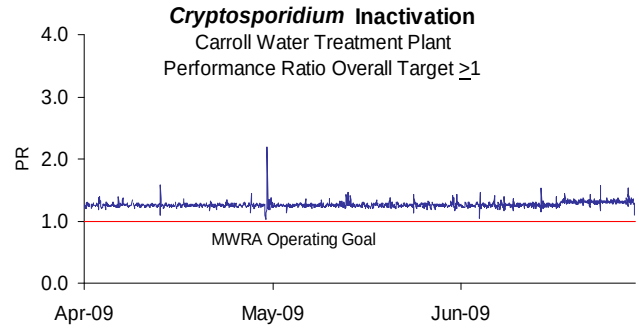
Wachusett Reservoir – MetroWest/Metro Boston Supply:

- 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 2.5 to 3.0 mg/L for the quarter.



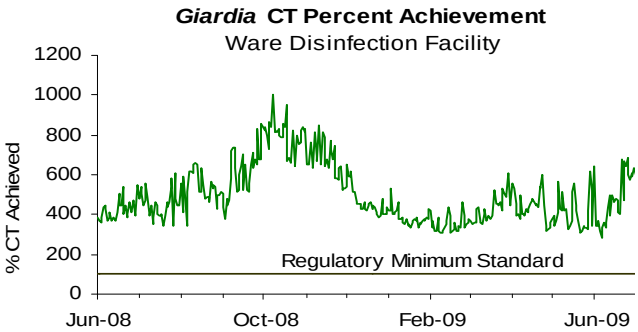


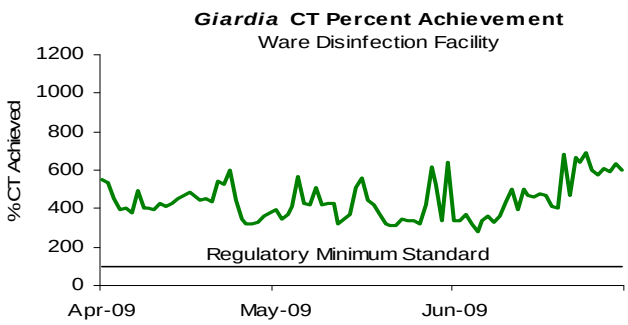




Quabbin Reservoir at Ware Disinfection Facility (CVA Supply):

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.



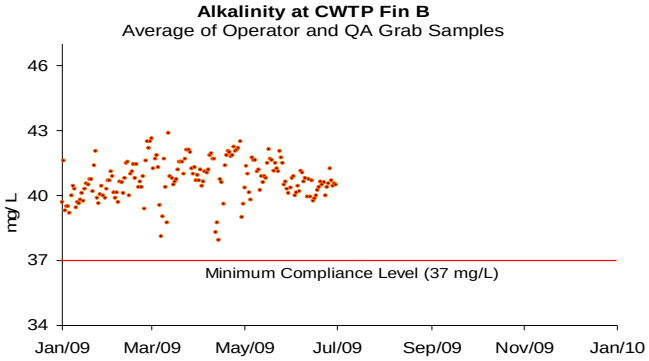


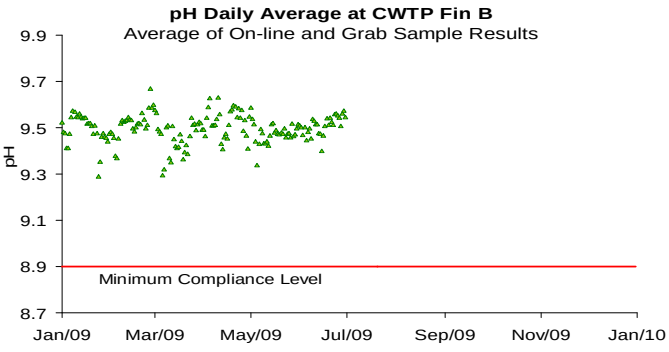
Treated Water – pH and Alkalinity Compliance

4th 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. 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's Fin B sampling tap. Distribution system samples are collected in March, June, September, and December.

Distribution system samples were collected on June 22, 2009; sample pH ranged from 9.3 to 9.6 and alkalinity ranged from 41 to 42 mg/L. No sample results were below DEP limits for the quarter.





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

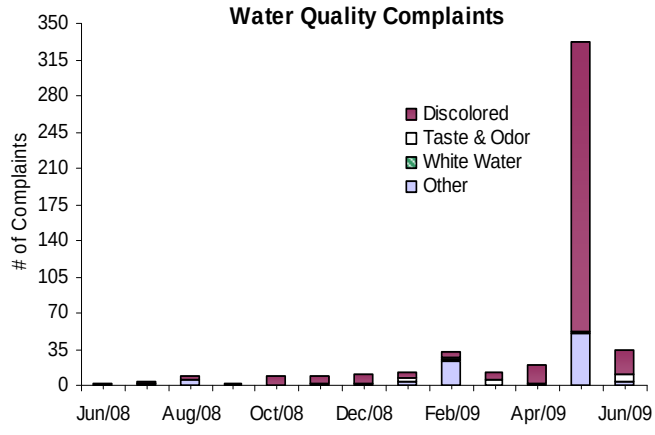
Background

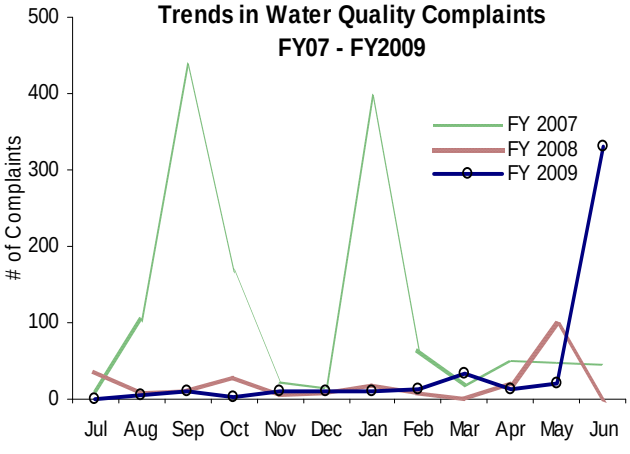
MWRA collects information on water quality complaints that typically fall into four categories: 1.) discoloration due to MWRA or local pipeline work; 2.) taste and odor due to algae blooms in reservoirs or chlorine in the water; 3.) white water caused by changes in pressure or temperature that traps 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 386 complaints during the 4th Quarter; 322 were for "discolored water." In May, there were 100 discoloration complaints in Wellesley due to line flushing and 150 in Boston due to testing of the Hyde Park Pump Station.





Bacteria & Chlorine Residual Results for Communities in MWRA Testing Program

4th Quarter - FY09

While all communities collect bacteria samples for the Total Coliform Rule (TCR), 40 systems (including Deer Island and Westboro 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 4th Quarter, 10 of the 5,577 community samples (0.18% system-wide) submitted to MWRA labs for analysis tested positive for coliform (Chelsea, Everett, Winthrop - April; Boston - May; Chelsea, Needham, Somerville - June). None of the 2,018 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 2.5% of samples taken 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	180	0 (0%)	0.0%		0.04	1.65
BELMONT	104	0 (0%)	0.0%		0.63	1.69
BOSTON	733	1 (0.14%)	0.0%	No	1.35	1.84
BROOKLINE	220	0 (0%)	0.0%		0.09	1.83
CHELSEA	136	2 (1.47%)	0.0%	No	0.41	1.83
DEER ISLAND	52	0 (0%)	0.0%		0.96	1.83
EVERETT	133	1 (0.75%)	0.0%	No	0.13	1.08
FRAMINGHAM	216	0 (0%)	0.0%		0.32	1.87
HANSCOM AFB (Bedford) (b)	27	0 (0%)	0.0%		0.01	1.28
LEXINGTON	117	0 (0%)	0.0%		0.32	1.86
LYNNFIELD	18	0 (0%)	0.0%		0.65	1.39
MALDEN	196	0 (0%)	0.0%		1.21	1.29
MARBLEHEAD	72	0 (0%)	0.0%		0.46	1.70
MARLBOROUGH (b)	157	0 (0%)	0.0%		0.61	1.78
MEDFORD	208	0 (0%)	0.0%		0.44	1.70
MELROSE	118	0 (0%)	0.0%		0.02	0.78
MILTON	96	0 (0%)	0.0%		1.07	1.62
NAHANT	30	0 (0%)	0.0%		0.04	1.35
NEEDHAM (b)	126	1 (0.79%)	0.0%	No	0.05	0.49
NEWTON	276	0 (0%)	0.0%		1.10	1.82
NORTHBOROUGH	49	0 (0%)	0.0%		0.45	1.63
NORWOOD	108	0 (0%)	0.0%		0.01	1.42
QUINCY	295	0 (0%)	0.0%		0.48	1.70
READING	130	0 (0%)	0.0%		1.07	1.76
REVERE	170	0 (0%)	0.0%		1.00	1.70
SAUGUS	96	0 (0%)	0.0%		1.09	1.89
SOMERVILLE	297	4 (1.35%)	0.0%	No	0.00	1.73
SOUTH HADLEY FD1 (c)	48	0 (0%)	0.0%		0.03	0.32
SOUTHBOROUGH	30	0 (0%)	0.0%		0.12	1.49
STONEHAM	91	0 (0%)	0.0%		0.66	1.79
SWAMPSCOTT	54	0 (0%)	0.0%		0.88	1.56
WAKEFIELD (b)	143	0 (0%)	0.0%		0.12	1.31
WALTHAM	216	0 (0%)	0.0%		0.02	1.76
WATERTOWN	130	0 (0%)	0.0%		0.24	1.65
WELLESLEY (b)	107	0 (0%)	0.0%		0.09	0.84
WESTBORO HOSPITAL	15	0 (0%)	0.0%		0.38	1.61
WESTON	48	0 (0%)	0.0%		0.44	1.72
WINCHESTER (b)	65	0 (0%)	0.0%		0.20	1.04
WINTHROP	75	1 (1.33%)	0.0%	No	0.31	1.63
WOBURN (b)	195	0 (0%)	0.0%		0.02	0.74
Total:	5577	10(0.18)%				
MASS. WATER RESOURCES AUTHORITY (d)	2018	0 (0%)	0.0%		0.02	1.71

(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

4th Quarter - FY09

Background

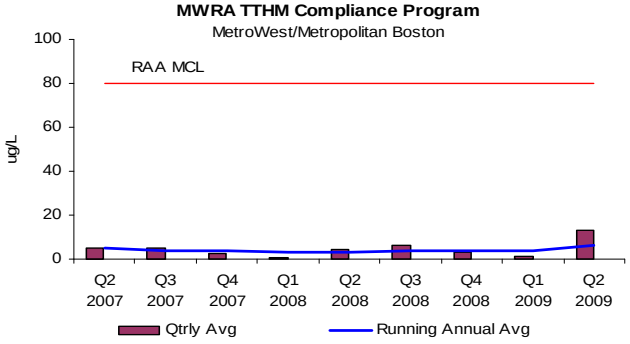
Total Trihalomethanes (TTHMs) and Haloacetic Acids (HAA5s) are by-products of disinfection treatment with chlorine. TTHMs and HAA5s are of concern due to their potential adverse health effects at high levels. EPA's running annual average (RAA) standard is 80 ug/L for TTHMs and 60 ug/L for HAA5s. The 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.

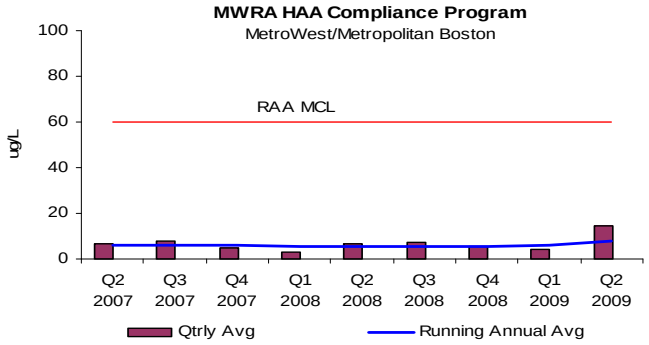
Absorbance, measured as UV-254, is a surrogate measure of reactive organic matter. Regulated DBPs have dropped to very low levels with the CWTP coming on-line. However, UV-254 levels remain useful for estimating ozone dosage and serving as a trigger for Quabbin transfer consideration.

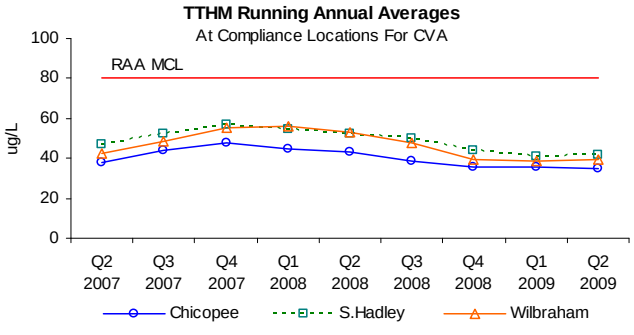
Bromate is tested monthly per DEP requirements for water systems that treat with ozone. Bromide in the raw water may be converted into bromate following ozonation. EPA's RAA MCL standard for bromate is 10 ug/L.

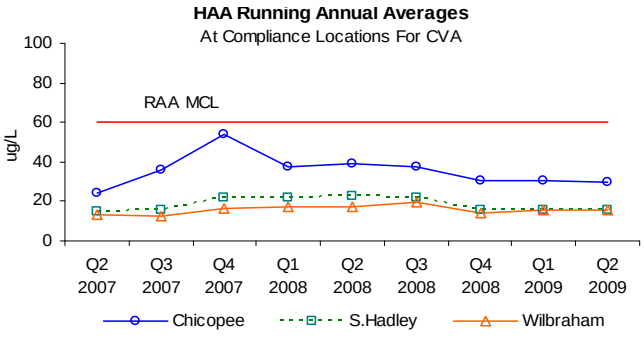
Outcome

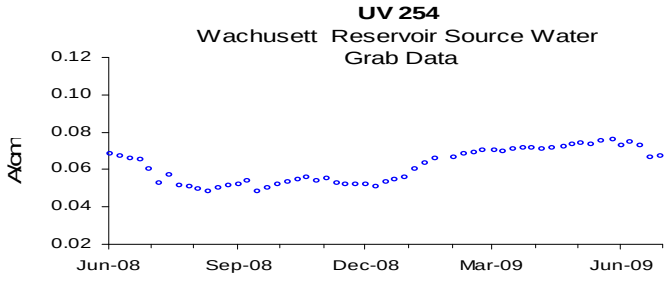
The RAA for TTHMs and HAA5s for MWRA's Compliance Program (represented as the line in the top two graphs below) remained below current standards. TTHM levels at all sampling locations for the MetroWest/Metropolitan Boston communities have declined dramatically since August 2005 following activation of the CWTP. The RAA for TTHMs = 6.0 ug/L; HAA5s = 8.0 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

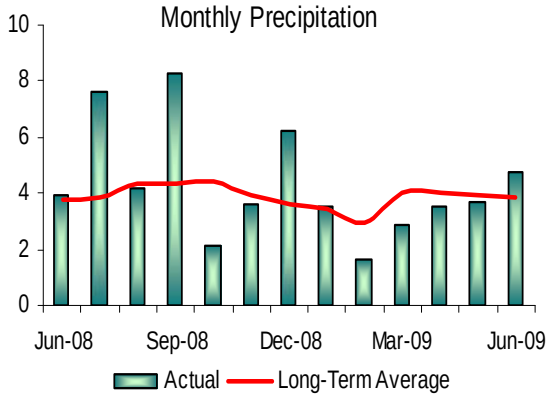
4th Quarter - FY09

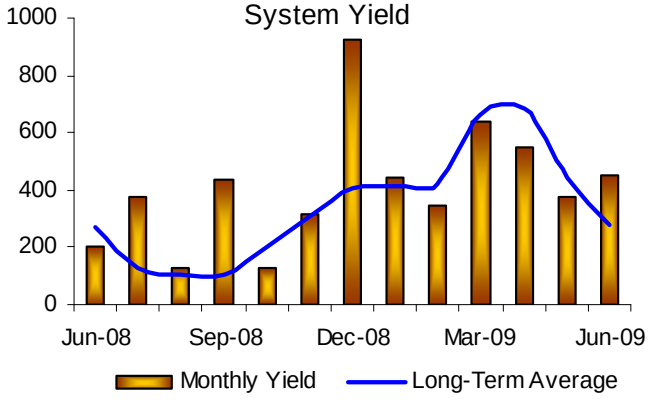
Background

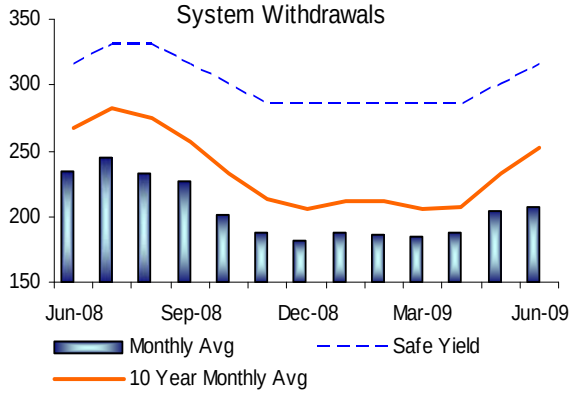
A reliable supply of water in MWRA's reservoirs depends on adequate precipitation during the year and seasonal hydrologic inputs from watersheds that surround the reservoirs. Demand for water typically increases with higher summer temperatures and then decreases as temperatures decline. Quabbin Reservoir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

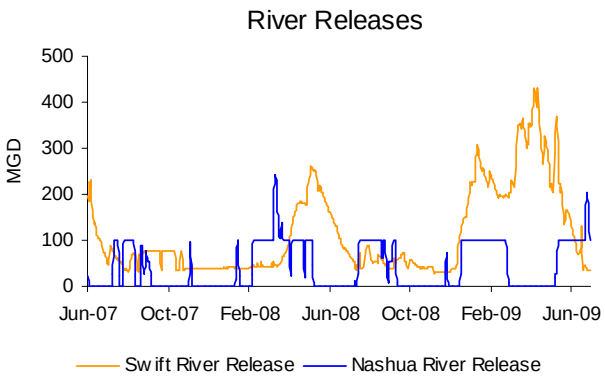
Outcome

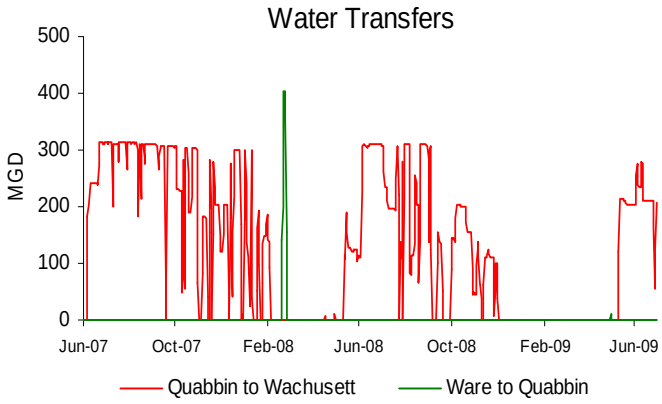
Quabbin Reservoir level remains above the normal operating range for this period of the year. Quabbin Reservoir was at 99.5% of capacity as of June 30, 2009, 2.1% higher than the same time last year. This is an increase of more than nine billion gallons of storage.

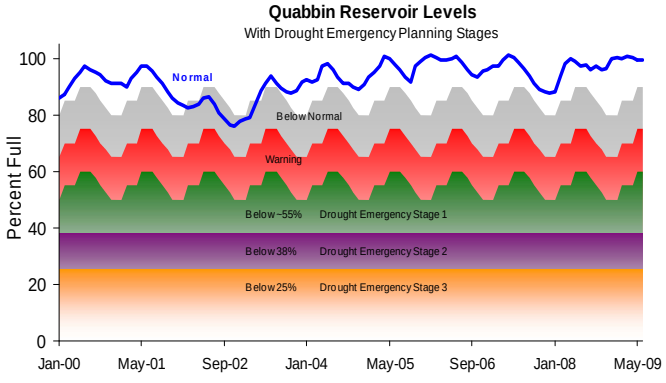












WASTEWATER QUALITY

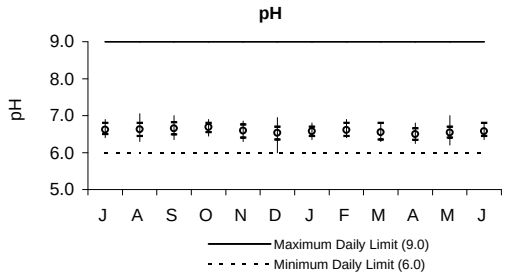
NPDES Permit Compliance: Deer Island Treatment Plant

4th Quarter - FY09

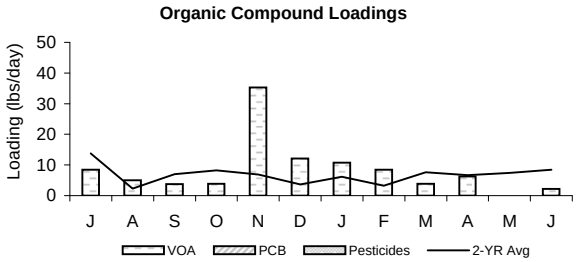
NPDES Permit Limits

Effluent Characteristics		*Units*	*Limits*	*April*	*May*	*June*	*4th Quarter Violations*	*FY09 YTD Violations*
Dry Day Flow:		mgd	436	310.3	309.1	310.0	0	0
cBOD:	Monthly Average	mg/L	25	5.0	4.3	4.8	0	0
	Weekly Average	mg/L	40	7.2	4.8	5.5	0	0
TSS:	Monthly Average	mg/L	30	8.7	5.1	6.5	0	0
	Weekly Average	mg/L	45	11.6	5.7	6.9	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	13.6	18.4	37.4	0	0
	Weekly Geometric Mean	col/100mL	14000	7.0	8.3	7.2	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	6.3-6.8	6.2-7.0	6.4-6.8	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	101	78	>100	0	0
Chronic Toxicity:	Sea Urchin	%	1.5	100	100	100	0	0
	Inland Silverside	%	1.5	100	6	25	0	0

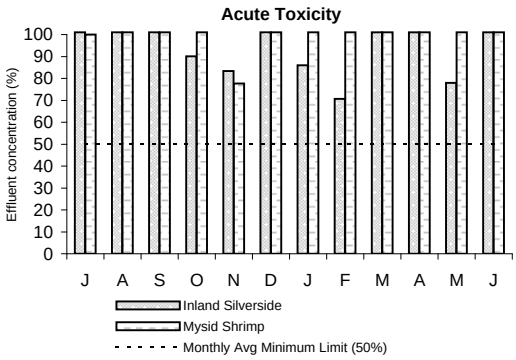
There were no permit violations at the Deer Island Treatment Plant in the 4th Quarter or at any time during FY09.



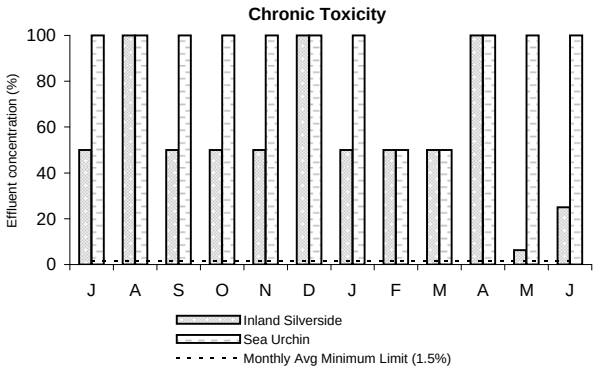
pH is a measure of the alkalinity or acidity of the effluent. Fluctuations in pH do not have an adverse effect on marine environments. Because of the pure oxygen used in the activated sludge reactor, the effluent pH tends to be at the lower pH range. pH measurements for the 4th Quarter were within the daily limits.



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



The acute toxicity tests simulate the short-term toxic effects of chemicals in wastewater effluent on marine animals. The tests measure 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 during the 4th quarter for both the inland silverside and mysid shrimp.



Typically, effects of chronic exposures differ from those of acute exposures. Because of this, chronic toxicity responses are not necessarily related to acute toxicity. The chronic toxicity test simulates the long-term toxic effects of chemicals in wastewater effluent on marine animals. To meet permit limits, 1.5% effluent concentration must show no observed effect on the growth and reproduction of the test species. Chronic toxicity permit limits were met during the 4th Quarter for both the inland silverside and sea urchin.

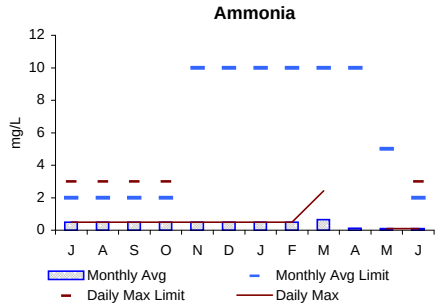
NPDES Permit Compliance: Clinton Wastewater Treatment Plant

4th Quarter - FY09

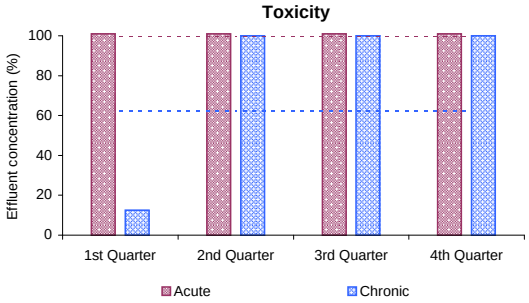
NPDES Permit Limits

Effluent Characteristics		*Units*	*Limits*	*April*	*May*	*June*	*4th Quarter Violations*	*FY09 YTD Violations*
Flow:		mgd	3.01	3.08	3.10	3.17	3	10
BOD:	Monthly Average:	mg/L	20	5.9	4.1	3.7	0	0
	Weekly Average:	mg/L	20	6.7	4.7	4.9	0	0
TSS:	Monthly Average:	mg/L	20	7.4	5.3	4.7	0	0
	Weekly Average:	mg/L	20	9.8	7.8	5.7	0	0
pH:		SU	6.5-8.3	7.0-7.6	6.8-7.5	7.1-7.6	0	0
Dissolved Oxygen:	Daily Minimum:	mg/L	6	9.2	8.9	9.0	0	0
Fecal Coliform:	Daily Geometric Mean:	col/100mL	400	13	6	3	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:	6/1-10/31							
	Monthly Average:	mg/L	10.0	0.1	0.1	0.1	0	0
	Daily Maximum:	mg/L	35.2	0.2	0.1	0.1	0	0
Copper:	Monthly Average:	ug/L	20	5.0	6.5	5.4	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

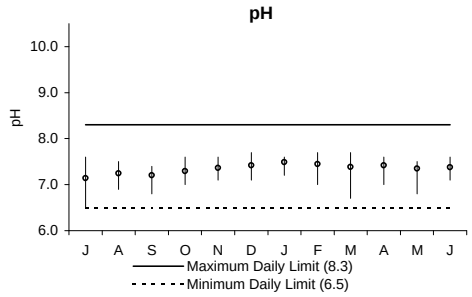
There were three permit violations at the Clinton Wastewater Treatment Plant in the 4th Quarter, alll related to monthly flow averages. The permit limit is 3.01million gallons per day (mgd); monthly average flows for April, May and June were 3.08 mgd, 3.10 mgd, and 3.17 mgd, respectively.
Toxicity testing at Clinton is conducted only on a quarterly basis; there were no violations in the 4th Quarter.



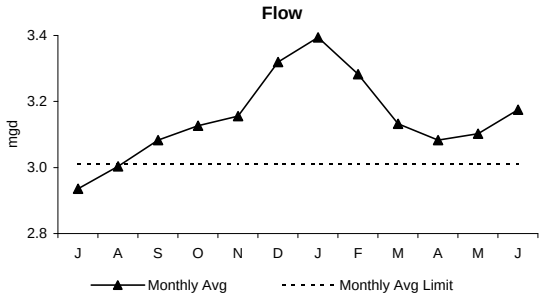
The 4th Quarter monthly average and daily maximum concentrations were below the permit limits. The monthly average and daily maximum limits for the period of November 1 - March 31 are 10 mg/L and 35.2 mg/L, respectively. The permit limits are most stringent from June to October when warm weather conditions are most conducive to potential eutrophication.



Acute and chronic toxocity 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. Toxicity limits were met during the 4th Quarter.



pH is a measure of the alkalinity or acidity of the effluent. All daily pH results for the 4th Quarter were within the permit range.



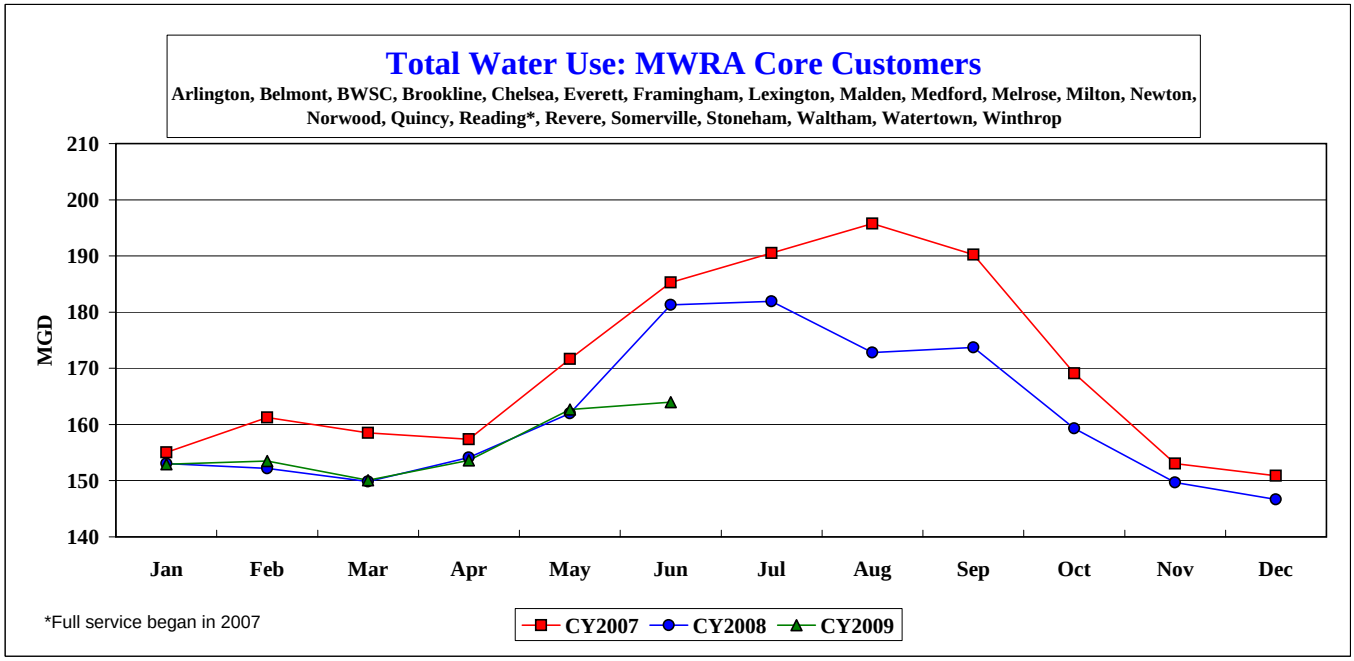
This graph depicts the average monthly flow, measured in million gallons per day, entering the plant. As mentioned above, the average monthly flows during the 4th Quarter exceeded the permit limit of 3.01 mgd. Flows in April, May and June were 3.08 mgd, 3.10 mgd, and 3.17 mgd, respectively.

COMMUNITY FLOWS AND PROGRAMS

Total Water Use: MWRA Core 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	153.619	162.650	163.999	0.000	0.000	0.000	0.000	0.000	0.000	156.140

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	4,608.575	5,042.145	4,919.973	0.000	0.000	0.000	0.000	0.000	0.000	28,261.288



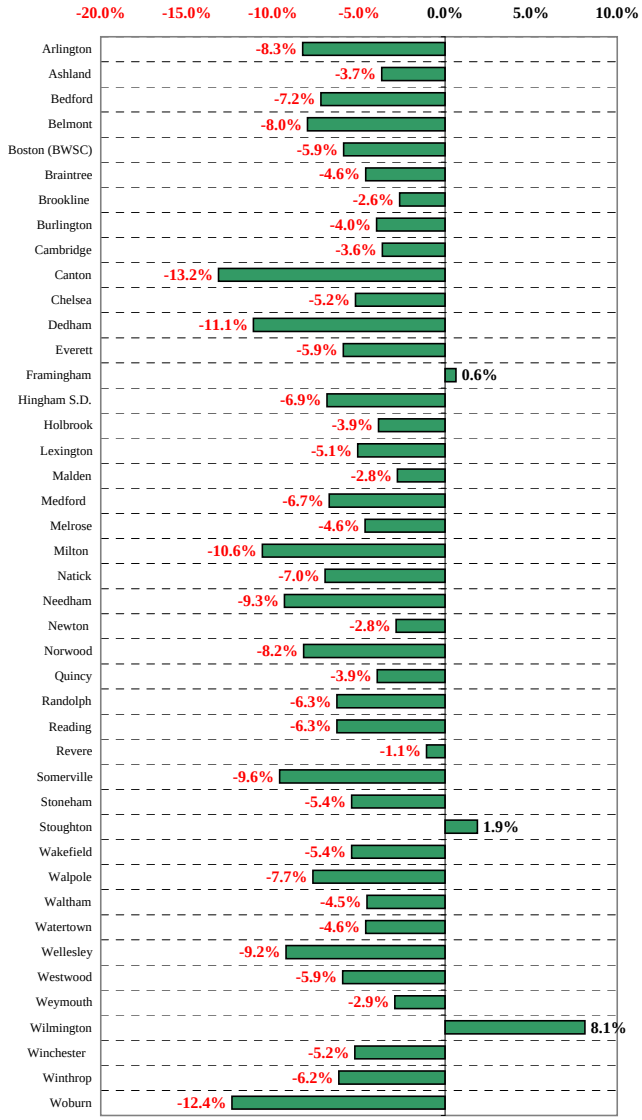
How CY2009 Community Wastewater Flows Through Six Months Could Effect FY2011 Sewer Assessments [1,2]

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. →

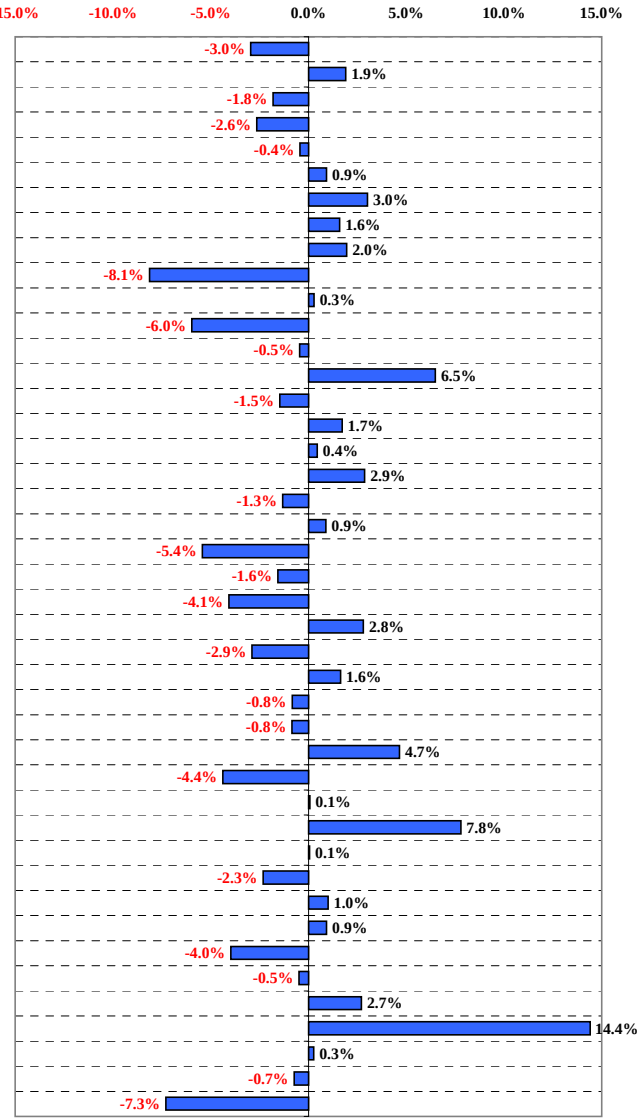
But as MWRA's sewer assessments are a ZERO-SUM calculation, a community's assessment is strongly influenced by the RELATIVE change in CY2007 to CY2009 flow share compared to CY2006 to CY2008 flow share, compared to all other communities in the system. →

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.

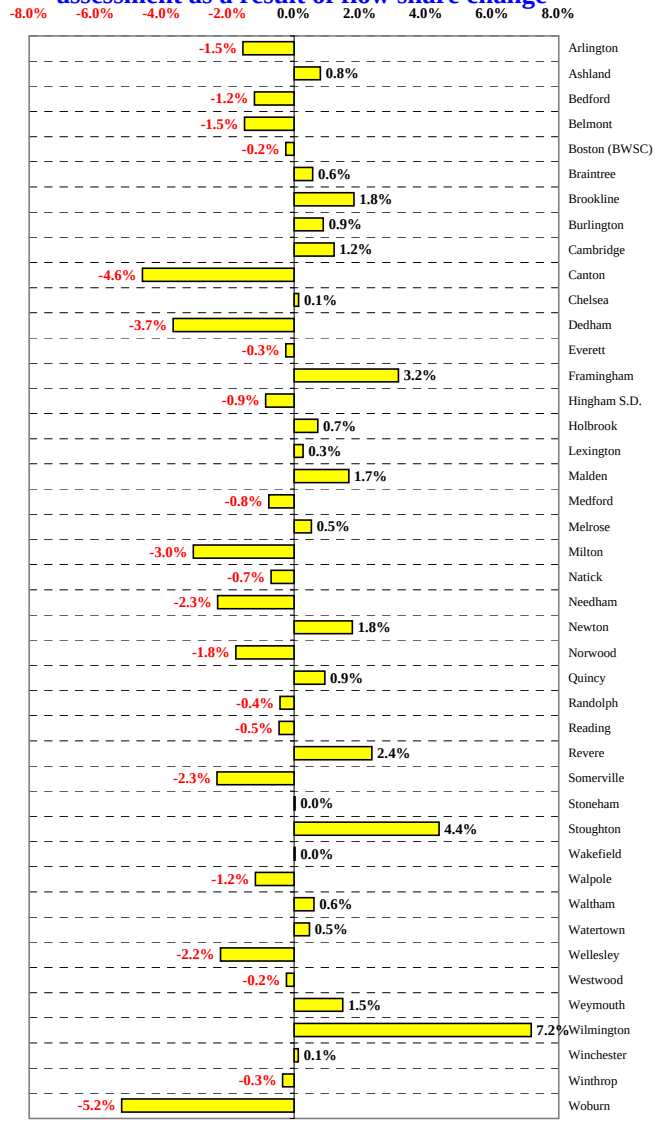
Change in community absolute flow



Change in community flow share



Estimated variance from average system assessment as a result of flow share change [3]



[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 06/02/09. 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.

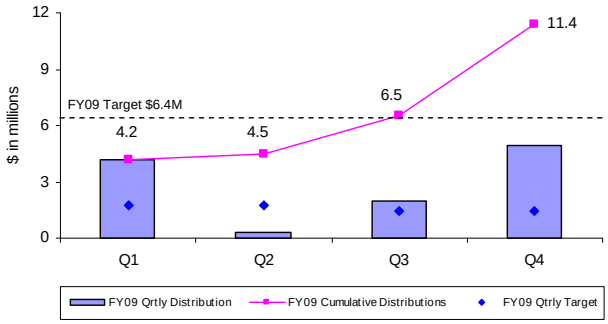
Community Support Programs

4th Quarter – FY09

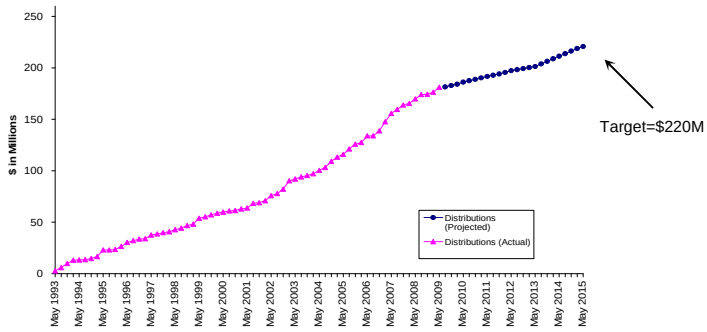
Infiltration/Inflow Local Financial Assistance Program

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.

FY09 Quarterly Distributions of Sewer Grant/Loans



I/I Local Financial Assistance Program
Distribution FY93-FY15 Target is $220M

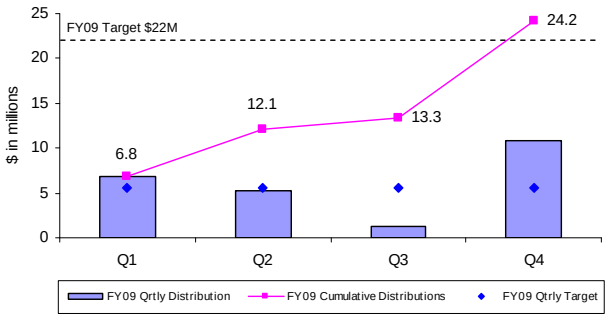


During the fourth quarter of FY09, $4.9 million in financial assistance (45% grants and 55% interest-free loans) was distributed to fund local sewer rehabilitation projects in Boston, Melrose and Milton. Total grant/loan distribution for FY09 is $11.4 million. From FY93 through the fourth quarter of FY09, all 43 member sewer communities have participated in the program and more than $181 million has been distributed to fund 367 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.

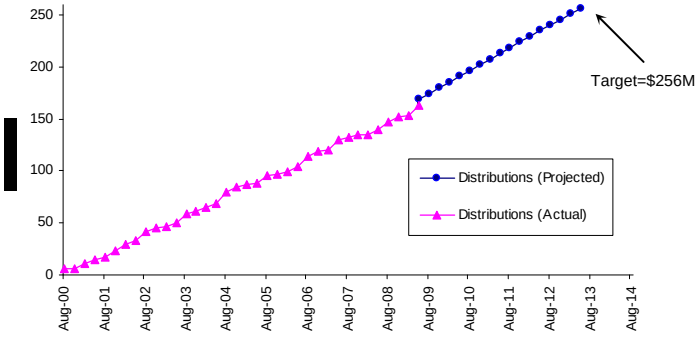
Water Local Pipeline Assistance Program

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.

FY09 Quarterly Distributions of Water Loans



Water Local Pipeline Assistance Program
Distribution FY01-FY13 Target is $256M



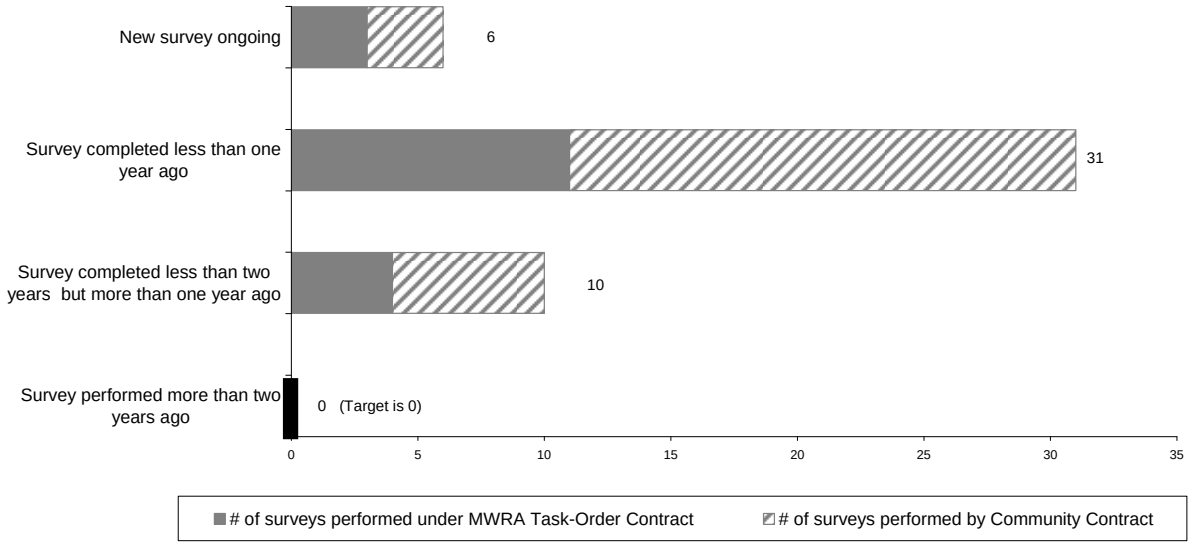
During the fourth quarter of FY09, $10.9 million in interest-free loans was distributed to fund local water projects in Arlington, Everett, Lexington, Malden, Milton and Newton. Total loan distribution for FY09 is $24.2 million. From FY01 through the fourth quarter of FY09, $163 million has been distributed to fund 194 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

4th 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	46,376	148,728
Low-Flow Fixtures (showerheads and faucet aerators)	6,000	9,124	5,346	5,828	4,041	24,339
Toilet Leak Detection Dye Tablets	------	5,818	5,037	3,329	4,335	18,519

BUSINESS SERVICES

Procurement: Purchasing and Contracts

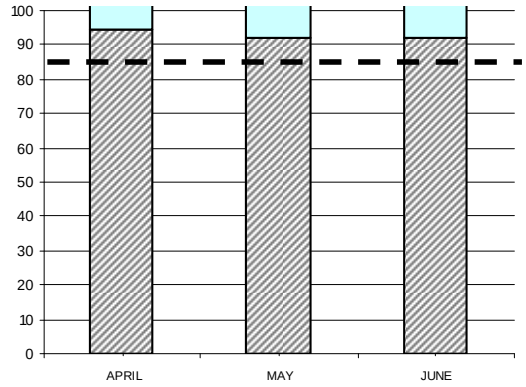
Fourth Quarter FY09

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

Outcome: Processed 93% of purchase orders within target; Avg. Processing Time was 4.25 days vs. 5.49 days in Qtr 4 of FY08. Processed 79% (33 of 42) contracts within target timeframes; Avg. Processing Time was 145 days vs. 104 days in Qtr 4 of FY08.

Purchasing

Purchase Orders - Percent in Target



	NO.	TARGET	PERCENT IN TARGET
$0 - $500	1117	4 DAYS	93.3%
$500 - $2K	787	7 DAYS	94.55
$2K - $5K	305	10 DAYS	92.8&
$5K - $10K	102	25 DAYS	89.2%
$10K - $25K	62	30 DAYS	87.1%
$25K - $50K	23	60 DAYS	87.0%
OVER $50K	33	80 DAYS	87.9%

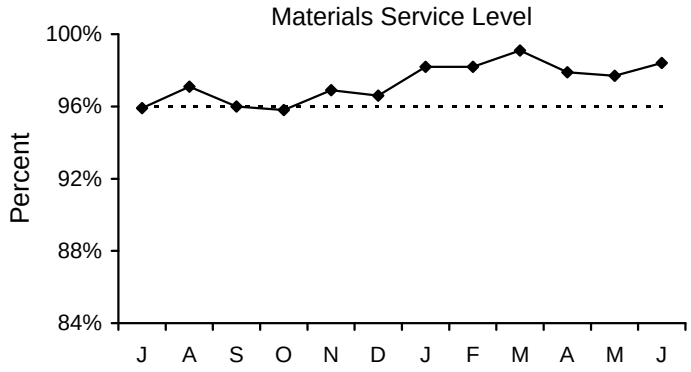
- The target was achieved for all purchase order dollar categories.
- Purchasing Unit processed 2429 purchase orders, 21 more than the 2408 processed in Qtr 4 of FY08, for a total value of $21,753,471 vs. a dollar value of $9,819,114 in Qtr 4 of FY08.

Contracts, Change Orders and Amendments

- Nine contracts were not processed within target timeframes. Reasons included: negotiations with a consultant; multiple questions during bidding; extended review of bidders qualifications; staff reassignment to cover for a contract manger on extended leave; one project halted and redesigned; and one project re-bid.
- Procurement processed forty-two contracts with a value of $75,759,895 and ten amendments with a value of ($154,871).
- Thirty-five change orders were executed during the period, but several were large balancing change orders at the end of jobs, and were recorded as credits or negative numbers. The dollar value of all non-credit change orders during the 4th quarter FY09 was $3,220,000 and the value of credit change orders was ($2,051,127). The net dollar value of all change orders was $1,168,873.
- In addition, staff reviewed 135 proposed change orders and 46 draft change orders.

Materials Management

4th Quarter, FY09



The service level is the percentage of stock requests filled. The goal is to maintain a service level of 96%. Staff issued 10,368 (98.0%) of the 10,581 items requested in Q4 from the inventory locations for a total dollar value of $1,245,067.

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 – nylon gaskets and digester bearings for the Maintenance group and Lumidor switches, valve plugs, contactors and malleable conduit bodies for the Electrical group.
- Chelsea – victaulic adapters, flanges, couplings, elbows, sensors, transmitters and impeller wear rings for Operations.
- Southboro – plumbing fixtures, valves and electrical terminal connections for the Maintenance group.

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.
- Tool/equipment reviews were conducted by staff at Newton Street Pump Station, Southboro and Chelsea grounds during the 4th quarter.

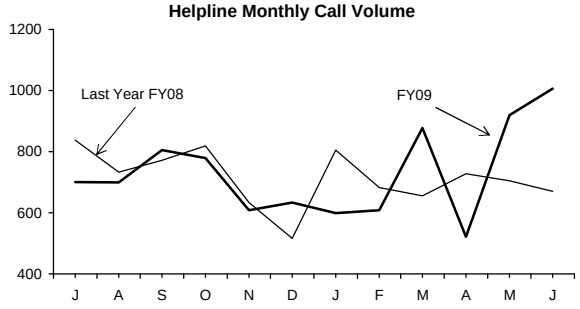
Items	Base Value July-08	Current Value w/o Cumulative New Adds	Reduction / Increase To Base
Consumable Inventory Value	6,841,161	6,774,304	-66,857
Spare Parts Inventory Value	6,940,392	7,065,063	124,671
Total Inventory Value	**13,781,553**	**13,839,367**	**57,814**

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
4th Quarter FY09

Operations

Highlights:

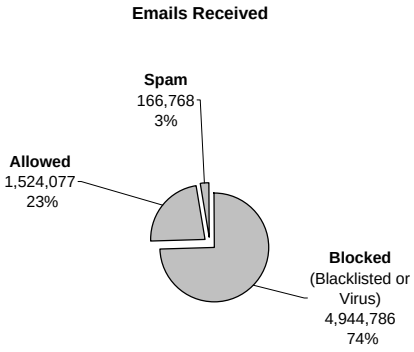


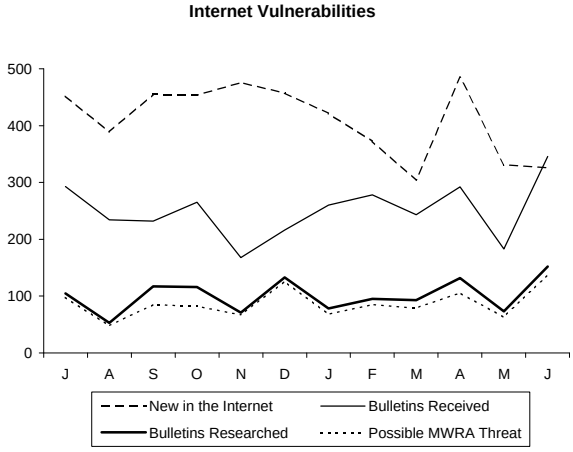
Performance

A total of 8,756 calls were received for the year of which 86% were closed within 3 business days (target is 90%). Overall call volume increased by 2.33% from last year. The backlog peaked in June and finished the year above the targeted benchmark range. The mix of calls for the quarter do not indicate any major problems.

Business System Plan

- Cyber Security: During Q4, staff pushed security fixes and updates to desktops and servers throughout the quarter in order to protect against the 1142 newly revealed vulnerabilities.
- Project to migrate from Symantec to LANDesk Anti-Virus on desktop computers reached 90% completion. Migration to LANDesk Antivirus provided, at no cost, 300 additional licenses (for a total of 1500), which are necessary to maintain anti-virus coverage for all desktops and laptops.
- Twelve files were identified with viruses on MWRA computers this quarter and infected files were cleaned or deleted before any damage ensued.





- Websense Spam Management: Upgraded Websense Email Filter and Spam Management to the latest version to stay current with the product's features and capabilities.

Applications/Training/Records Center

Area	Significant Accomplishments
GIS	The new 2008 Orthophotos, provided by MassGIS, have been made available to MWRA GIS users. These photos cover most of MWRA's eastern service area and are of extremely high quality. The improvement in quality is very noticeable and, once additional Oracle storage capacity can be allocated, the functional capabilities of the Orthophotos will also be improved.
LIMS	Worked closely with the Department of Laboratory Services (DLS) wastewater staff to perform a considerable amount of testing of the new Operations Management System (OMS) and Wastewater Water Quality (WWQ) data warehouses. DLS wastewater users have approved the Phase I testing results that included WWQ data warehouse contents and data from the legacy Beckman LIMS system.
Lawson Upgrade	Completed the Lawson Application upgrade over the Memorial Day weekend and went live Tuesday May 26, on schedule. The disaster recovery server, DIAPOLLO, was refreshed during the go live weekend. Received very positive feedback from users regarding new user screens, interface, and performance improvements. Finance staff and MIS staff conducted training sessions to support upgrade and MIS updated job-aides on INTRAnet.
Employee Availability Tracking	Application was implemented to support attendance in the event of a pandemic outbreak. Ran a workshop for 110 employees in May and conducted an application drill on May 6th and 7th. Developed new screens and reports for the Employee Availability Tracking application to capture confirmation of departmental reporting completion.
Training	During the quarter, 324 staff attended 18 classes and 28 workshops. In FY09, 741 staff attended 109 classes and 61 workshops. 27% of the workforce attended at least one class. Class offerings included the Employee Availability Tracking application and Lawson training.
Records Center	Record Center move to Marlboro completed in April. Added 723 records center boxes in FY09 and added 13 rock core sample boxes from East Boston 7087; Braintree Weymouth; Windsor Dam; and Cottage Farm projects. Issued reports to departments for boxes eligible per Statewide Retention Schedule for disposition to initiate the disposition approval process.

Legal Matters
4th Quarter FY2009

PROJECT ASSISTANCE

COURT AND ADMINISTRATIVE ORDERS

- **Boston Harbor Litigation and CSO:** Drafted and filed Compliance and Progress Report and CSO Quarterly Progress Report with Federal District Court.

- **NPDES:** Drafted letter notifying EPA and DEP of essential maintenance that will be performed in DITP's primary and secondary batteries over the next 24 months. Reviewed final draft of proposed changes to ambient monitoring plan which was submitted to EPA and DEP. Drafted supplemental letter to NPDES permit renewal application for Clinton wastewater treatment plant that was submitted to EPA and DEP.

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

- **Administrative Order (Clinton Wastewater Treatment Plant):** Submitted Annual Copper Optimization Report No. 7.

REAL ESTATE AND CONTRACT

- **Watershed Preservation Restrictions:** Approved 3 proposed acquisitions of watershed preservation restrictions and/or real property for water supply protection.

- **Low Service Storage Facility – Spot Pond:** Reviewed and revised various drafts of the Purchase and Sale Agreement. Drafted a license for environmental testing on the property.

- **Chestnut Hill Waterworks Redevelopment:** Reviewed the First Amendment to the Amended and Restated Land Disposition Agreement for potential impact on MWRA rights and/or facilities.

- **Dept. of Public Safety:** Drafted Amendment 1 to the MOA with DPS for the provision of electrical inspection services for MWRA projects.

- **Town of Arlington:** Drafted a Memorandum of Agreement for Arlington's Mill Street Culvert Project.

- **Bid Protests:** Provided support, drafted documents, developed arguments and strategies in the defense of a bid protest and motion for a Preliminary Injunction in the award of the hauling and disposal of grit and screenings contract, MWRA No. OP-107.

- **Section 8(m) permits:** Reviewed and approved 20 Section 8(m) permits; provided recommendations on three construction claims.

ENVIRONMENTAL

- **Chapter 21E Matter /Spot Pond Pump Station:** Edited the c. 21E-required "5 -year Periodic Review" of the Temporary Solution (Class C - Response Action Outcome) implemented at the vernal pool area of Spot Pond Brook.

- **Burma Road/Fowl Meadow:** Assisted in the drafting of an easement maintenance plan and agreement with DCR.

- **TRAC Regulations:** Prepared and submitted public notice for TRAC amendments hearing to Secretary of State and newspapers for publication within the required timeframe; assisted in MWRA's response to EPA comments on TRAC amendments.

LABOR, EMPLOYMENT AND ADMINISTRATIVE

New Matters

Eight demands for arbitration were filed.

Two charges were filed at the Massachusetts Commission Against Discrimination.

One charge was filed at the Equal Employment Opportunity Commission.

Matters Concluded

The MWRA and Steelworkers Local 9360 settled an arbitration regarding the placement of certain employees on the salary schedule upon promotion.

LITIGATION/TRAC

New Lawsuits

Three new cases were reported and one new claim was reported in the Fourth Quarter of FY 2009

- Charter Environmental, Inc., against MWRA and M.L. French Excavating Corp. seeking Charter Environmental, Inc. v. MWRA, et al.: This is an action brought by plaintiff to enjoin the MWRA from awarding MWRA Contract No. OP-107, a non professional services contract, to French, on the grounds that the contract should have been bid pursuant to G.L. c. 30, section 39M. After a hearing on April 28, 2009, the Court denied plaintiff's motion for a preliminary injunction.

- MWRA v. (Former Employee): This is an action brought by MWRA to enjoin the defendant, a former MWRA employee, from harassing, threatening or contacting another MWRA employee.

- Alice Nicholas v. MWRA and P. Caliacco Corporation: Plaintiff seeks money damages for 1) alleged inadequate compensation for a temporary easement taken by the MWRA on plaintiff's property for a construction project; 2) alleged damage to plaintiff's home and the surrounding land, allegedly caused by the construction work by MWRA's contractor, P. Caliacco Corp. Plaintiff's home is located at 175 Granite Avenue, Milton, MA. By Order of Taking dated June 6, 2007, MWRA allegedly took a temporary easement over plaintiff's property, in connection with work on the Southern Spine Distribution Mains Control Valve No. 2.

Claim:

- Verizon, Farrugut Road & E. 6th St., Boston, MA: Verizon's property damage claim alleges that on or about on April 30, 2009, employees and/or agents of MWRA damaged a Verizon 50 Pair UG Cable and Wood Conduit while preparing to repair/replace new curbstones/sidewalk in the area of Farragut Road and E. 6th Street, Boston.

Significant Developments

Chutehall Construction Company, Ltd v. MWRA: This matter involves Chutehall's appeal of a $10,000 Penalty Assessment Notice issued by TRAC for discharging from a construction site de-watering operation without a permit from MWRA. On June 15, 2009, following multiple unsuccessful appeals, the U.S. Supreme Court denied Chutehall's petition for certiorari. MWRA is now able to take steps to enforce the judgment and collect the payment owed by Chutehall.

Closed Cases

There was one case reported closed in the Fourth Quarter FY 2009.

- Patrick McEneany, et al. v. MWRA, The Shaw Group, and Wirth Maschinenund Bohgergate Frabrik GMBH, and The Shaw Group v. Modern Continental: Patrick McEneany was an employee of Modern Continental on the Braintree/Weymouth Tunnel and Shafts Project. Plaintiff alleged that on March 19, 2001, he slipped off the tunnel boring machine while working inside the tunnel, and sustained permanent neck and shoulder injuries. Plaintiff alleged negligence against all defendants. MWRA was provided with a legal defense and full indemnification in accordance with the liability insurance coverage obtained by Modern Continental. The case settled for a total of $355,000 with no contribution of MWRA funds. St. Paul Travelers, Modern Continental (and MWRA's) insurer, paid all but $85,000 of the settlement. A stipulation of dismissal with prejudice as to MWRA and the other defendants has been filed with the Court.

Subpoenas

During the Fourth Quarter of FY 2009, two subpoenas were received and one subpoena was pending at the end of Fourth Quarter FY 2009.

Public Records

During the Fourth Quarter of FY 2009, thirteen new public records requests were received and five requests were pending at the end of Fourth Quarter FY 2009.

SUMMARY OF PENDING LITIGATION MATTERS

TYPE OF CASE/MATTER	As of June 2009	As of Mar 2009	As of Dec 2008
Construction/Contract/Bid Protest (other than BHP)	4	3	4
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	**16**	**15**	**16**
Affirmative Cases: MWRA v. (current employee)	1	1	1
Other Litigation matters (restraining orders, etc.) MWRA v. (former employee) MWRA v. (former employee)	2	1	1
total – all pending lawsuits	**19**	**17**	**18**
Significant claims not in suit: CDM Walnut Hill Verizon, Farragut Road & E. 6th Street	2	1	1
Bankruptcy	2	2	2
Wage Garnishment	7	7	7
TRAC Appeals	3	5	5
Subpoenas	1	1	2
Public Records Requests	5	6	4
TOTAL - ALL LITIGATION MATTERS	**39**	**39**	**39**

TRAC

New Appeals: No new appeals were received in the 4th Quarter FY 2009.

Settlement by Agreement of Parties Two cases were settled by Agreement of Parties in the 4th Quarter FY 2009.

My Grandma's Coffee Cake; MWRA Docket No. 08-02

The Forsyth Dental Center: MWRA Docket No. 08-03

Internal Audit Department
4th Quarter FY09

Highlights

VENDOR AUDIT (Issued: May 6, 2009)

This audit reviewed $581,368 in billings by a MWRA office supply vendor over two contract periods from December 2004 through November 2007 and from July 2008 through October 2008. A total of $82,703 may be due from the vendor as a result of the vendor not applying the proper contract discount terms.

FY10 AUDIT WORK PLAN

In FY10 Internal Audit anticipates completing three internal audits, six management advisory services, 25 consultant provisional billing rate approvals, one consultant preliminary review, eight incurred cost audits, ten construction labor burden reviews, an audit of change order pricing documentation, and four other contract and/or vendor reviews.

At the end of FY09 active assignments include an audit of warehouse operations, an audit of MIS general controls, and a review of fixed asset accounting. Planned assignments for FY10 include an audit of DITP maintenance practices, TRAC operations and a financial review of the work-in-process account (WIP).

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 85% of recommendations have been implemented.

Report Title (date)	Pending Implementation	Closed Recommendations
Field Operations Maintenance Management Practices (9/16/05)	2	10
Financial & Management Controls of the Fore River Railroad (3/1/07)	1	6
Audit of Buying Practices (9/15/08)	1	10
Total Recommendations	**4**	**26**

Audit Savings

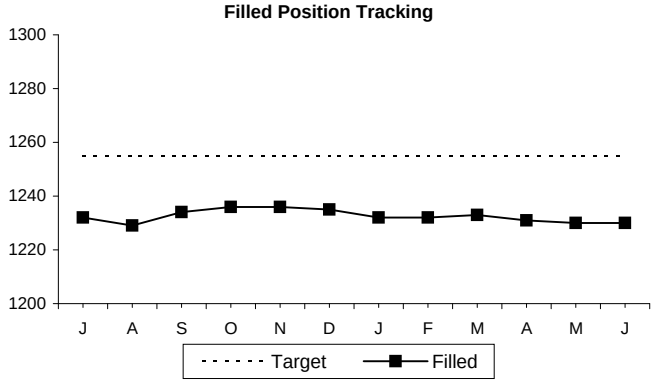
The Internal Audit Department's target is to achieve at least $1 million in cost savings each year. Cost savings vary each year based upon many factors. In some cases, cost savings for one year may be the result of work in prior years. Commencing in FY07 cost savings include the dollar impact, if measurable, of internal assignments.

Savings	FY05	FY06	FY07	FY08	FY09	TOTAL
Consultants	$483,968	$768,394	$358,341	$55,901	$316,633	$1,983,237
Contractors &	$1,551,13	$456,968	$637,378	$2,147,31	$1,262,088	$6,054,884
Internal Audits	0	0	$183,840	0	$438,027	$621,867
Total	**$2,035,10**	**$1,225,36**	**$1,179,55**	**$2,203,21**	**$2,016,748**	**$8,659,988**

OTHER MANAGEMENT

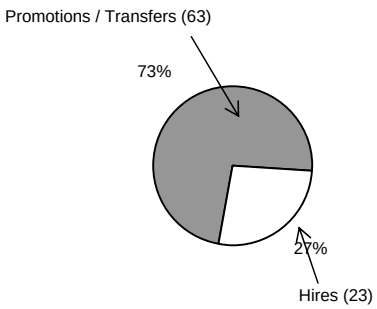
Workforce Management
4th Quarter FY09

Filled Position Tracking



FY09 Target for Filled Positions = 1255
Filled Positions as of June 2009 = 1230

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

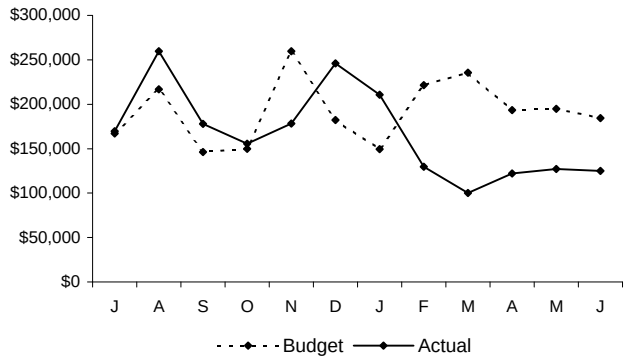
Average Monthly Sick Leave Usage
Per Employee

In FY09, the average monthly sick leave usage has increased 0.01% from the same time last year.

	Number of Employees	YTD	Annualized Total	Annual FMLA %	FY08
Law	19	7.91	7.91	27.5%	8.73
Planning	24	8.07	8.07	21.1%	6.91
Operations	948	9.11	9.11	27.1%	8.94
Support	190	7.53	7.53	23.8%	8.46
Finance	43	8.45	8.45	33.3%	8.64
Executive	8	6.83	6.83	40.1%	5.18
MWRA Avg	**1232**	**8.79**	**8.79**	**26.8%**	**8.79**

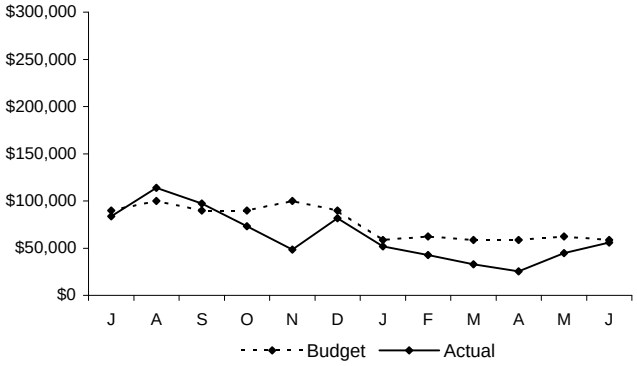
Percent of sick leave usage attributable to Family and Medical Leave Act (FMLA) leave is 26.8% ending June 30, 2009.

Field Operations
Overtime Expenditure Variance



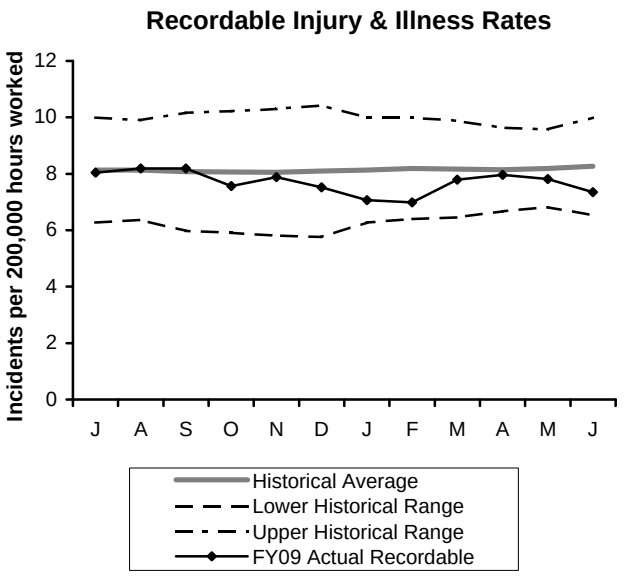
Field Operations overtime spending overall in the fourth quarter was $199,000 (34.7%) less than budgeted, reflecting management efforts to curtail planned overtime.

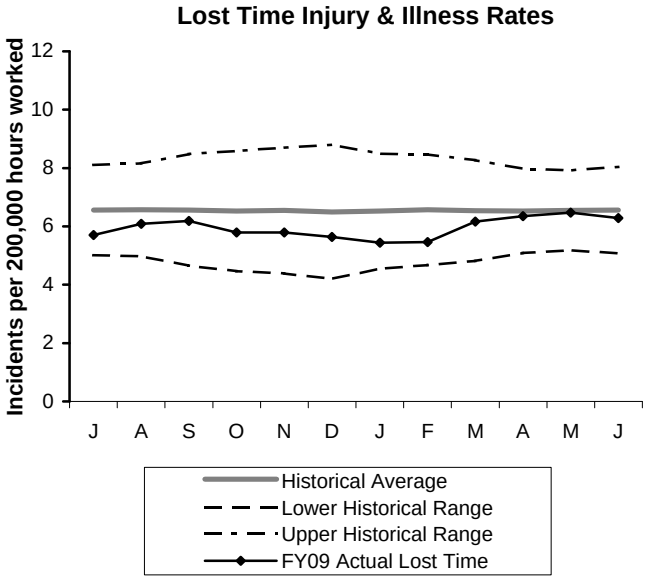
Deer Island Treatment Plant
Overtime Expenditure Variance



Deer Island overtime spending overall in the fourth quarter was $54,000 (29.8%) less than budgeted, primarily reflecting management efforts to limit maintenenace overtime spending to critical equipment and emergency repairs and less-than-anticipated coverage needs.

Workplace Safety
4th Quarter 2009





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.

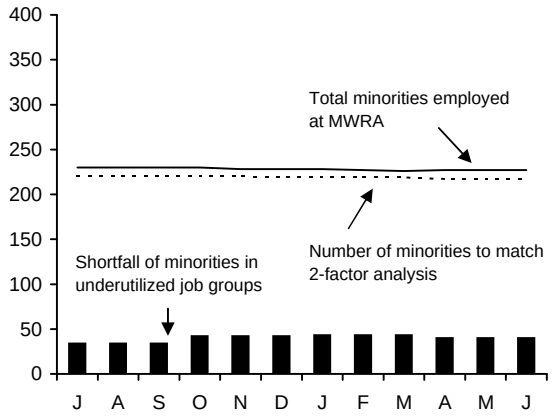
3 The “Historical Average” is computed using the actual MWRA monthly incident rates for FY99 through FY08. The “Upper” and “Lower Historical Ranges” are computed using these same data – adding and subtracting two standard deviations respectively. FY09 actual incident rates can be expected to fall within this historical range.

Workers Compensation Claims Highlights

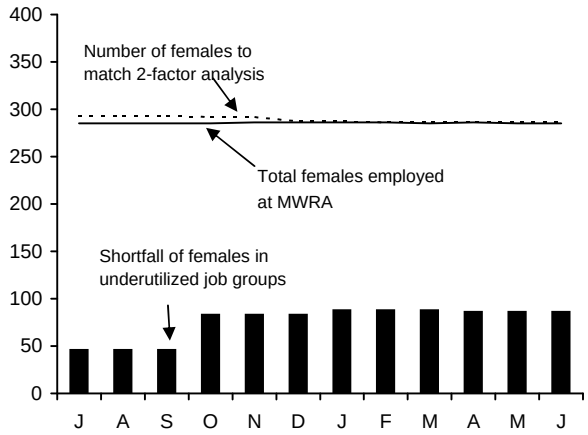
	New	Closed	Open Claims
Lost Time	9	13	55
Medical Only	53	61	36
	New		**YTD Returns**
Light Duty Returns	0		8

MWRA Job Group Representation
4th Quarter FY09

Minority - Affirmative Action Plan Goals



Female - Affirmative Action Plan Goals



Highlights:

At the end of Q4 FY09, 7 job groups or a total of 40 positions are underutilized by minorities as compared to 9 job groups or a total of 40 at the end of Q4 FY08; for females 13 job groups or a total of 86 positions are underutilized by females as compared to 11 job groups or a total of 82 at the end of Q4 FY08. During Q4, 1 minoritiy and 2 females were hired. During this same period, 0 minorities and 2 females terminated.

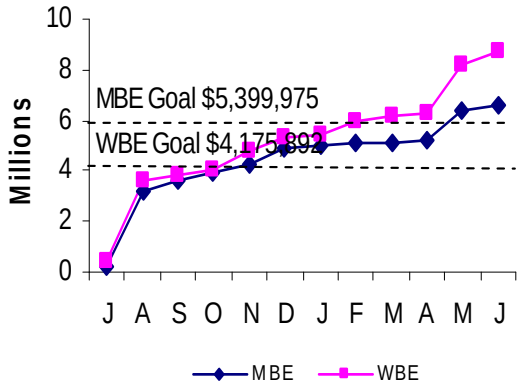
Underutilized Job Groups - Workforce Representation

Job Group	Employees as of 6/30/2009	Minorities as of 6/30/2009	Achievement Level	Minority Over or Under Under utilized	Females As of 6/30/2009	Achievement Level	Female 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	50	22	11	11	44	10	34
Clerical B	44	8	11	-3	17	3	14
Engineer A	85	15	13	2	12	14	-2
Engineer B	50	9	4	5	6	25	-19
Craft A	117	16	21	-5	0	4	-4
Craft B	149	25	18	7	3	7	-4
Laborer	62	14	10	4	5	8	-3
Management A	106	18	17	1	31	36	-5
Management B	59	10	9	1	14	26	-12
Operator A	68	5	7	-2	2	4	-2
Operator B	68	8	10	-2	4	3	1
Para Professional	61	11	28	-17	29	53	-24
Professional A	38	2	9	-7	24	15	9
Professional B	173	42	28	14	78	78	0
Technical A	47	15	11	4	3	11	-8
Technical B	12	4	2	2	4	5	-1
Total	**1233**	**227**	**215**	**52/-40**	**285**	**313**	**58/-86**

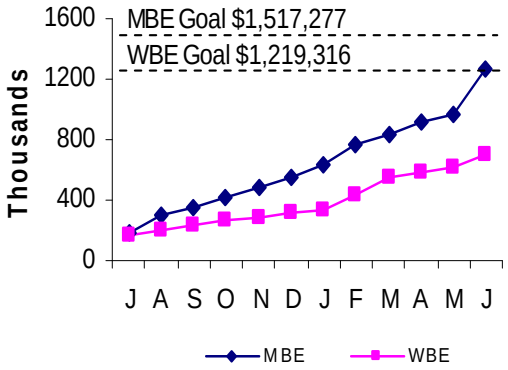
MBE/WBE Expenditures
Fourth Quarter 2009

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 June.

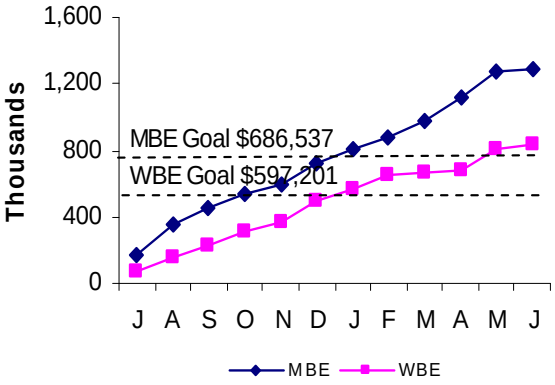
Construction



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	
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
Construction	6,609,216	122.4%	13,681,272	144.8%	8,770,461	210.0%	9,999,226	212.8%
Professional Svc.	1,266,243	83.5%	1,867,312	118.3%	706,320	57.9%	863,795	68.1%
Goods & Svcs.	1,288,538	187.7%	1,523,765	266.1%	835,066	139.8%	627,752	126.0%
Total	**$9,163,997**	**120.5%**	**$17,072,349**	**147.1%**	**$10,311,847**	**172.1%**	**$11,490,773**	**177.7%**

MWRA FY09 CEB Expenses through June 2009

	June 2009 Year-to-Date					
	Period 12 YTD Budget	Period 12 YTD Actual	Period 12 YTD Variance	%	FY09 Approved	% Expended
EXPENSES						
WAGES AND SALARIES	$ 89,006,105	$ 88,624,447	$ (381,658)	-0.4%	$ 89,006,105	99.6%
OVERTIME	3,536,671	2,990,600	(546,071)	-15.4%	3,536,671	84.6%
FRINGE BENEFITS	16,452,542	16,579,652	127,111	0.8%	16,452,542	100.8%
WORKERS' COMPENSATION	1,325,000	1,841,638	516,638	39.0%	1,325,000	139.0%
CHEMICALS	10,350,380	9,867,555	(482,825)	-4.7%	10,350,380	95.3%
ENERGY AND UTILITIES	26,961,532	24,428,446	(2,533,086)	-9.4%	26,961,532	90.6%
MAINTENANCE	28,089,127	27,443,721	(645,406)	-2.3%	28,089,127	97.7%
TRAINING AND MEETINGS	171,913	157,515	(14,399)	-8.4%	171,913	91.6%
PROFESSIONAL SERVICES	6,493,264	6,357,126	(136,138)	-2.1%	6,493,264	97.9%
OTHER MATERIALS	4,725,041	4,630,791	(94,251)	-2.0%	4,725,041	98.0%
OTHER SERVICES	22,524,528	22,819,397	294,868	1.3%	22,524,528	101.3%
TOTAL DIRECT EXPENSES	**$ 209,636,103**	**$ 205,740,888**	**$ (3,895,217)**	**-1.9%**	**$ 209,636,103**	**98.1%**
INSURANCE	$ 2,450,000	$ 1,994,022	$ (455,978)	-18.6%	$ 2,450,000	81.4%
WATERSHED/PILOT	22,659,385	22,439,393	(219,992)	-1.0%	22,659,385	99.0%
SPECIAL PAYMENT OBLIGATION	53,743,500	53,743,500	-	0.0%	53,743,500	100.0%
BECo PAYMENT	4,161,027	4,142,047	(18,980)	-0.5%	4,161,027	99.5%
MITIGATION	1,445,236	1,416,686	(28,550)	-2.0%	1,445,236	98.0%
ADDITIONS TO RESERVES	1,743,337	1,743,337	-	0.0%	1,743,337	100.0%
RETIREMENT FUND	11,906,836	8,630,339	(3,276,497)	-27.5%	11,906,836	72.5%
TOTAL INDIRECT EXPENSES	**$ 98,109,321**	**$ 94,109,324**	**$ (3,999,997)**	**-4.1%**	**$ 98,109,321**	**95.9%**
DEBT SERVICE	$ 325,283,841	$ 330,821,056	$ 5,537,215	1.7%	$ 325,283,841	101.7%
DEBT SERVICE ASSISTANCE	-	-	-	---	-	---
TOTAL DEBT SERVICE	**$ 325,283,841**	**$ 330,821,056**	**$ 5,537,215**	**1.7%**	**$ 325,283,841**	**101.7%**
TOTAL EXPENSES	**$ 633,029,265**	**$ 630,671,268**	**$ (2,358,000)**	**-0.4%**	**$ 633,029,265**	**99.6%**
REVENUE & INCOME						
RATE REVENUE	$ 540,819,000	$ 540,819,000	$ -	0.0%	$ 540,819,000	100.0%
OTHER USER CHARGES	7,228,280	7,163,518	(64,762)	-0.9%	7,228,280	99.1%
OTHER INCOME SPECIAL PAY	53,743,500	53,743,500	-	0.0%	53,743,500	100.0%
OTHER REVENUE	5,738,095	7,210,575	1,472,480	25.7%	5,738,095	125.7%
RATE STABILIZATION	5,073,365	5,073,365	-	0.0%	5,073,365	100.0%
INVESTMENT INCOME	20,427,025	19,769,035	(657,990)	-3.2%	20,427,025	96.8%
TOTAL REVENUE & INCOME	**$ 633,029,265**	**$ 633,778,993**	**$ 749,728**	**0.1%**	**$ 633,029,265**	**100.1%**

Through June 2009, total revenue was $633.8 million, $750,000 or 0.1% more than the amended budget. Total expenses were $630.7 million, $2.4 million or 0.4% less than the amended budget.

Expenses – (All expenses are compared to the FY09 amended budget)

- **Direct Expenses** were $205.7 million, $3.9 million or 1.9% less than the amended budget.
- **Energy and Utilities** were $2.5 million or 9.4% less than budget. Electricity of $1.8 million due to lower pricing at DITP and usage in FOD, Diesel Fuel of $691,000 due to lower pricing and usage in FOD, and Natural Gas of $169,000 due to lower than projected pricing, offset by higher water usage of $156,000.
- **Maintenance** was $645,000 or 2.3% under budget due to staff reevaluation of the accounting treatment of the roof replacement program at DITP and the decision to fund the program through the capital budget starting in FY09 and going forward.
- **Overtime** was $546,000 or 15.4% less than budget due to less storm activity than expected and changed staffing configuration which reduces coverage related overtime.
- **Workers' Compensation** was $517,000 or 39.09% more than budget due to higher Compensation and Medical Payments as a result of recent serious injuries.
- **Chemicals** were $483,000 or 4.7% less than budget due to lower Sodium Hypochlorite $369,000, Sodium Hydroxide $122,000, Sodium Bisulfite $112,000, and Soda Ash $93,000 offset by higher Ferric Chloride usage of $338,000 to prevent struvite formation.
- **Wages and Salaries** were $382,000 or 0.4% less than budget as a result of lower regular pay due to fewer than budgeted filled positions.
- **Other Services** were $295,000 or 1.3% more than budget due to higher Sludge Pelletization of $251,000, Space Lease/Rentals of $176,000 and Grit & Screenings Removal of $81,000 offset by lower Police Details of $98,000.
- **Professional Services** were $136,000 or 2.1% lower due to Other of $124,000 due to energy consultant services in Operations and technical training in Human Resources, Lab and Testing Analysis of $100,000 in ENQUAD for delays in harbor/outfall reports. Offset by higher Engineering services of $149,000.
- **Fringe Benefits** were $127,000 or 0.8% more than budget due to higher Health Insurance of $197,000, offset by lower Medicare expense.
- **Indirect Expenses** were $40.4 million, excluding Lehman Brothers Swap of $53.7 million, $4.0 million or 9.0% less than budget mainly due to decision not to make the Pension Reserve deposit of $3.3 million in FY09 and lower Insurance Claims of $429,000.
- **Debt Service** totaled $330.8 million, $5.5 million or 1.7% more than the amended budget which results from $4.1 million in higher State Revolving Fund (SRF) expenses, $6.8 million in higher Revenue Bonds, $8 million for Subordinate Debt. The higher than projected spending for Revenue Bonds and Subordinate Debt was mainly due to the $20 million defeasance in FY09. This was offset by lower variable rate debt of $11.3 million due to favorable rates.

Revenue and Income –

- **Total Revenue / Income** through June was $633.8 million, $750,000 or 0.1% greater than the amended budget. Higher non-rate revenue of $1.5 million due to Miscellaneous Revenue of which $298,000 for receipt of NSTAR reimbursement, $117,000 for Fore River Corporation Management Fees and Leases, disposal of surplus equipment $399,000, Wilmington Emergency Water use of $334,000, and unbudgeted Homeland Security grant of $237,000 for mobile laboratory equipment to be used for water protection.

Cost of Debt
June 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.

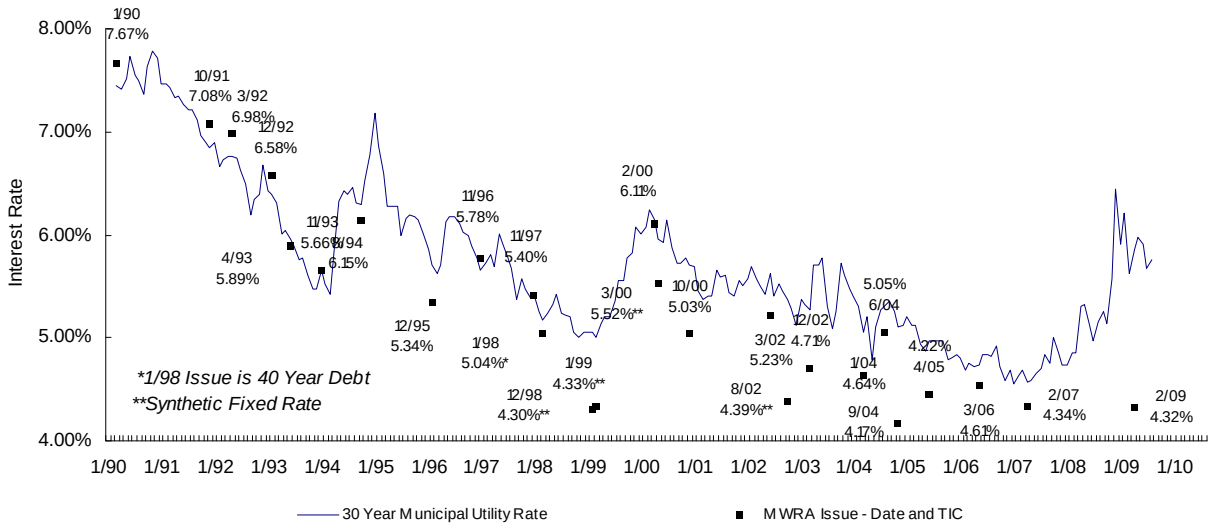
Average Cost of MWRA Debt

Fixed Debt ($4,185)	4.64%
Variable Debt ($594)	1.86%
SRF Debt ($1,088)	0.97%
Weighted Average Debt Cost ($5,867)	3.68%

Most Recent Senior Fixed Debt Issue
February 2009

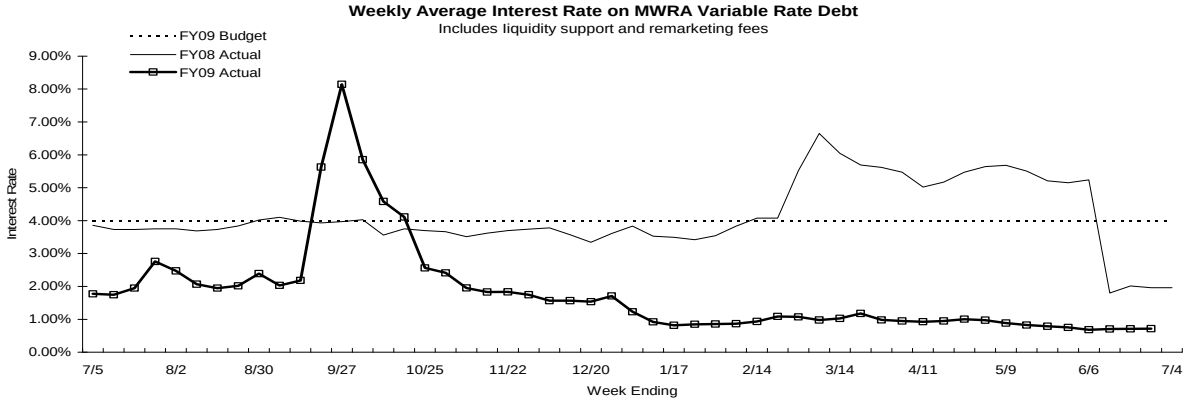
2009 Series A & B ($383)	4.32%

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 June, SIFMA rates fluctuated with a high of 0.36% and a historic low of 0.34%. MWRA's issuance of variable rate debt, although consistently less expensive in recent years, results in exposure to additional interest rate risk as compared to fixed rate debt.



Investment Income
June 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)

	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	
Fund	Average Budgeted Balance	Average Actual Balance	Variance	Impact	Budget	Actual	Impact	Impact	%
Combined Reserves	$91,618	$90,987	($631)	($68)	4.95%	5.02%	$99	$31	0.01
Construction	$108,215	$92,066	($16,149)	($323)	2.00%	1.49%	($474)	($797)	(0.37)
Debt Service	$109,226	$109,849	$623	$12	2.00%	1.87%	($152)	($139)	(0.06)
Debt Service Reserves	$237,831	$244,361	$6,530	$156	3.12%	3.28%	$429	$585	0.08
Operating	$52,433	$53,452	$1,019	$14	2.61%	1.99%	($317)	($303)	(0.22)
Revenue	$85,148	$87,875	$2,726	$55	2.11%	2.06%	($41)	$14	0.01
Redemption	$35,410	$32,021	($3,388)	($62)	2.68%	2.82%	$13	($49)	(0.05)
Total	$719,880	$710,610	($9,269)	($216)	2.86%	2.81%	($442)	($658)	-3.2%

YTD Investment Income Variance