



# MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard  
100 First Avenue, Building 39  
Boston, MA 02129

Frederick A. Laskey  
Executive Director

Telephone: (617) 242-6000  
Fax: (617) 788-4899  
TTY: (617) 788-4971

## **ADMINISTRATION, FINANCE & AUDIT COMMITTEE MEETING**

*Chair:* H. Vitale  
*Vice-Chair:* A. Pappastergion  
*Committee Members:*  
A. Blackmon  
J. Carroll  
K. Cotter  
J. Foti  
B. Peña  
J. Walsh

to be held on

Wednesday, May 11, 2016

Location: 100 First Avenue, 2nd Floor  
Charlestown Navy Yard  
Boston, MA 02129

Time: 10:00 a.m.

### **AGENDA**

#### **A. Information**

1. FY16 Third Quarter Orange Notebook
2. Delegated Authority Report – April 2016
3. FY16 Financial Update and Summary as of April 2016
4. 2007 Series B Escrow Arbitrage Rebate Payment

#### **B. Approvals**

1. Bond Defeasance of Future Debt Service
2. Memorandum of Agreement with the Town of Stoneham in Connection with the Northern Intermediate High Pipeline Project

#### **C. Contract Awards**

1. Arbitrage Rebate Calculation Services: Contract F240, PFM Asset Management LLC

## MASSACHUSETTS WATER RESOURCES AUTHORITY

### Meeting of the Administration, Finance and Audit Committee

April 13, 2016

A meeting of the Administration, Finance and Audit Committee was held on April 13, 2016 at the Authority headquarters in Charlestown. Chairman Vitale presided. Present from the Board were Ms. Wolowicz and Messrs. Carroll, Cotter, Flanagan, Foti, Pappastergion, Peña, and Walsh; Mr. Blackmon joined the meeting in progress. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Pam Heidell, Mike Hornbrook, Michele Gillen, Tom Durkin, Sean Navin, Karen Gay-Valente, Kathy Soni, Matt Horan, John Vetere, Carolyn Francisco Murphy, John Corbin and Bonnie Hale. The meeting was called to order at 10:25 a.m.

#### Information

##### 2015 Annual Update on New Connections to the MWRA System

Staff provided a brief update.

##### Delegated Authority Report – March 2016

Staff gave a short presentation on a couple of items on the report, and there was general discussion and question and answer.

##### Analysis of Proposal to Reclassify Employees to Group 2 for Retirement

There was question and answer, particularly on the difficulty of determining the overall financial impact of the reclassification – assumed to be significant – while it is unclear which and how many employees would be reclassified to group 2 if the proposed legislation passed. Committee members discussed what position, if any, the Board of Directors should take on the legislation and considered a few possible motions. Ultimately, the Committee voted to recommend that the Executive Director be authorized to communicate with the legislature at appropriate times to advise it of the impacts of House Bill 2249 upon MWRA ratepayers and MWRA operations.\*

##### FY16 Financial Update and Summary as of March 2016

Staff summarized the report and there was general discussion.

\* Approved as recommended at April 13, 2016 Board of Directors meeting.

## **Approvals**

### **\*Amendment to the Seventy-Second Supplemental Resolution**

Staff described the current extremely favorable long-term interest rates and the savings that would be realized under the proposed issuance of both new money and refunding bonds. There was general discussion and question and answer. (Mr. Blackmon joined the meeting.) The Committee recommended approval of the issuance of up to \$785,000,000 of MWRA bonds (ref. agenda item B.1).

## **Contract Awards**

### **\*Accounts Payable and Payroll Depository Services: Century Bank, Contract F239**

Staff reviewed the recommendation, and the Committee recommended approval of the contract award (ref. agenda item C.1).

### **\*Groundskeeping Services – Metropolitan Boston: C&W Facility Services, Inc., Contract OP-315**

Mr. Laskey noted that Mr. Blackmon had raised some good questions about the lack of M/WBE participation in the contract award recommendation postponed at the March 16 meeting, and the successful outcome of rebidding the contract to include minimum M/WBE participation requirements. There was general discussion and question and answer. The Committee recommended approval of the contract award (ref. agenda item C.2).

The meeting adjourned at 11:30 a.m.

\* Approved as recommended at April 13, 2016 Board of Directors meeting.

**STAFF SUMMARY**


**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** May 11, 2016  
**SUBJECT:** FY16 Third Quarter Orange Notebook



COMMITTEE: Administration, Finance & Audit

X INFORMATION  
\_\_\_\_ VOTE

Carolyn M. Fiore, Deputy Chief Operating Officer  
Stephen Estes-Smargiassi, Director, Planning & Sustainability  
Preparer/Title

  
Michael J. Hornbrook  
Chief Operating Officer

**RECOMMENDATION:**

For information only. The Board of Directors Report on Key Indicators of MWRA Performance (the Orange Notebook) is prepared at the close of each quarter of the fiscal year.

**DISCUSSION:**

The Orange Notebook presents performance indicators for operational, financial, workforce, and customer service parameters tracked by MWRA management each month. Significant outcomes for the third quarter are noted below.

Digester Gas Production

Digester gas production was at or above targets during each month this quarter. For several days in March, production actually exceeded the capacity of the thermal power plant to use the gas. Excess gas is flared (burned). Flaring methane produces fewer net greenhouse gas emissions than would result from just releasing the gas to the atmosphere. (Page 4)

Field Operations Maintenance

As expected, maintenance backlog and overtime were both negatively affected by staff efforts redirected to repair damage from the fire in the odor control facility at Nut Island Headworks. Maintenance activities continue to be prioritized so that only lower priority items are backlogged. (Page 9)

Water Distribution Pipeline Leak Detection

Over the past several quarters, efforts were focused on improving last year's leak detection below target results. Progress is close to on target over the first nine months of the fiscal year, and staff anticipates achieving targets over the next quarter. The backlog of MWRA leak repairs has stabilized, although there are several leaks in the backlog which will remain unrepaired (but isolated and not leaking or impacting service) until local construction projects are completed as noted with last quarter's report. Leak detection and metering staff continue to provide a significant amount of community technical assistance for leak location. MWRA metering staff

will alert communities if there is an unexpected increase in flows, and if the community is unable to easily locate suspected large leaks, MWRA leak detection or pipeline crews will provide assistance. MWRA staff provided leak detection technical assistance in January to Malden, Belmont, Somerville, Revere, and Waltham, in February to Somerville, Brookline, Newton, Revere, and Waltham, and in March to Cambridge, Malden, Boston, and Somerville. (Page 6)

MASSACHUSETTS WATER RESOURCES AUTHORITY

# Board of Directors Report

on

## Key Indicators of MWRA Performance

for

Third Quarter FY2016

Q1	Q2	Q3	Q4



Frederick A. Laskey, Executive Director  
Michael J. Hornbrook, Chief Operating Officer  
May 11, 2016

# Board of Directors Report on Key Indicators of MWRA Performance

## Third Quarter FY16

### Table of Contents

#### Operations and Maintenance

DITP Operations-	1
Total Power Use/Self-Generation	
Plant Flow & Precipitation	
Total Cost of Electricity/Pricing	
DITP Operations-	2
DI Sodium Hypochlorite Use	
Disinfection Dosage	
Secondary Blending Events	
DI Operations & Maintenance Report	3
Residuals Processing	4
Sludge Detention Time in Digesters & Total Solids Destruction	
Digester Gas Production & % Utilized	
Sludge Pumped From Deer Island	
Monthly Average % Capture of Processed Sludge	
DITP Maintenance	5
Operations Division–Metering & Leak Detection	6
Water Distribution System–Valves	7
Wastewater Pipeline/Structures	8
FOD Metro Facility & Equipment Maintenance	9
Renewable Electricity Generation-1	10
Renewable Electricity Generation-2	11
Toxic Reduction and Control	12
Field Operations– Narrative Topics	13
Laboratory Services	15

#### Construction Programs

Projects in Construction	16
CSO Control Update	18
CIP Expenditures	19

#### Drinking Water Quality and Supply

Source Water – Microbial Results	20
Source Water – Turbidity, pH and Alkalinity	21
Treated Water – Disinfection Effectiveness	22
Source Water – Algae, Complaints	23
Bacteria and Chlorine Residual Results	24
Disinfection By-Products, UV 254	25
Water Supply/Source Water Management	26

#### Wastewater Quality

NPDES Permit Compliance –	
-Deer Island TP	27
-Clinton TP	28

#### Community Flows and Programs

Total Water Use	29
Core Communities	30
Community Wastewater Flows	
Infiltration / Inflow Local Financial Assist. Prog.	31
Local Pipeline & Water System Assist. Prog.	32
Community Support Programs	33
Community Water - System Leak Detection	
- Conservation Outreach	

#### Business Services

Procurement	34
Materials Management	35
MIS Program	36
Legal Matters	37
Internal and Contract Audits	40

#### Other Management

Workforce Management	41
Workplace Safety Program	42
Job Group Representation	43
MBE/WBE Expenditures	44
CEB Expenses	45
Cost of Debt	46
Investment Income	47

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  
 May 11, 2016

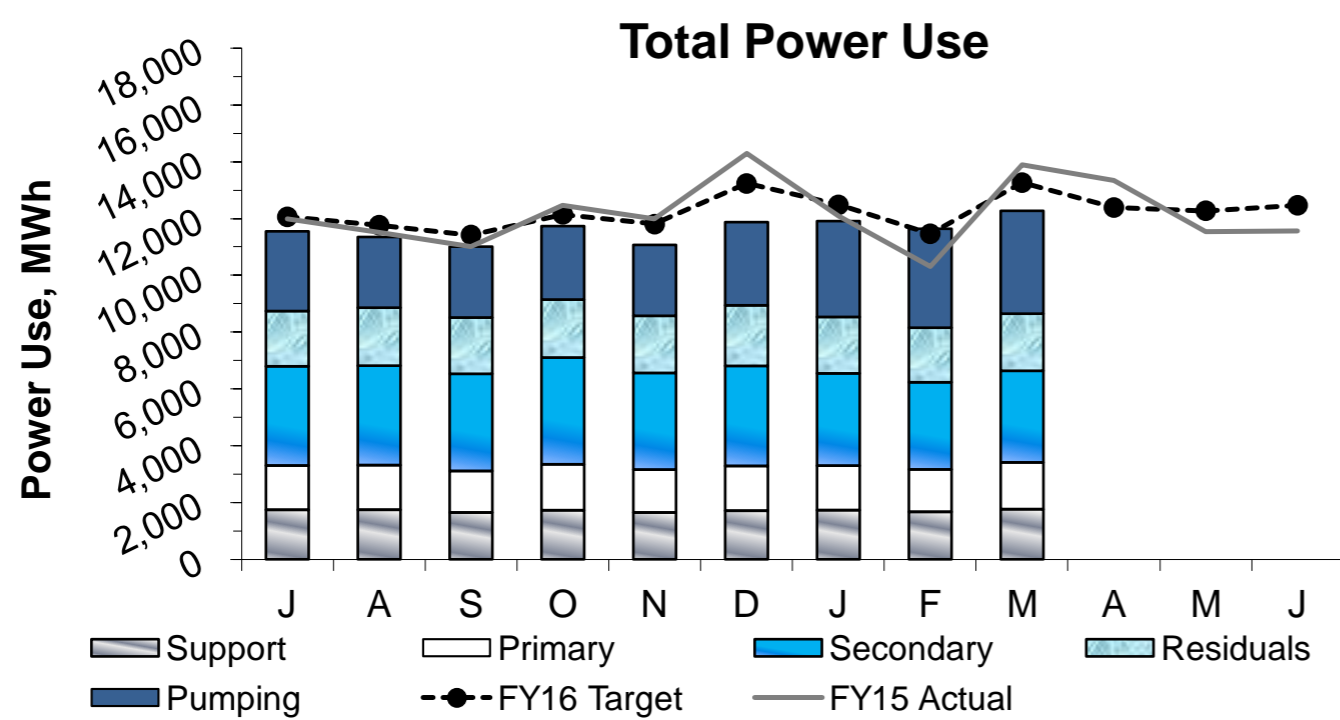
# OPERATIONS AND MAINTENANCE



# Deer Island Operations

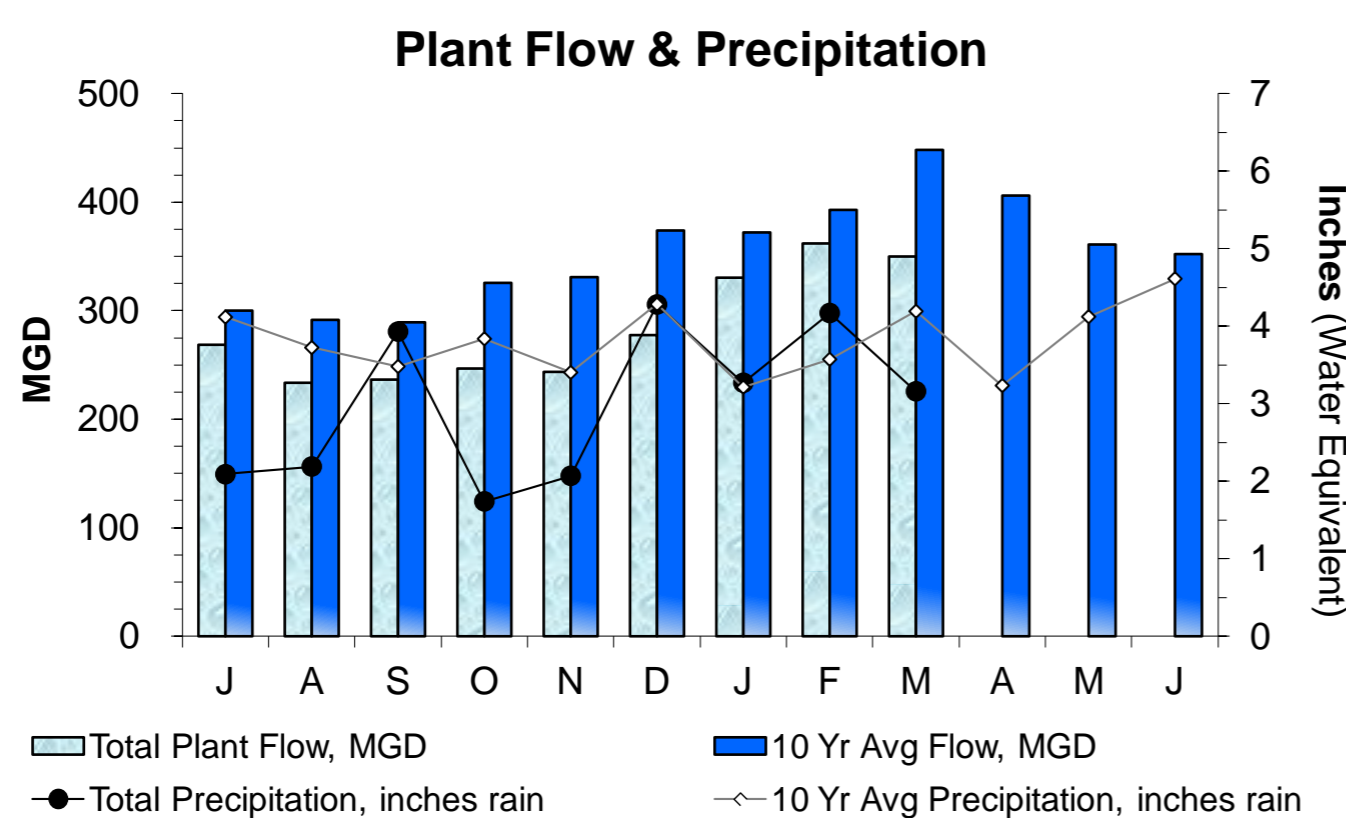
3rd Quarter - FY16

Page 1 of 4

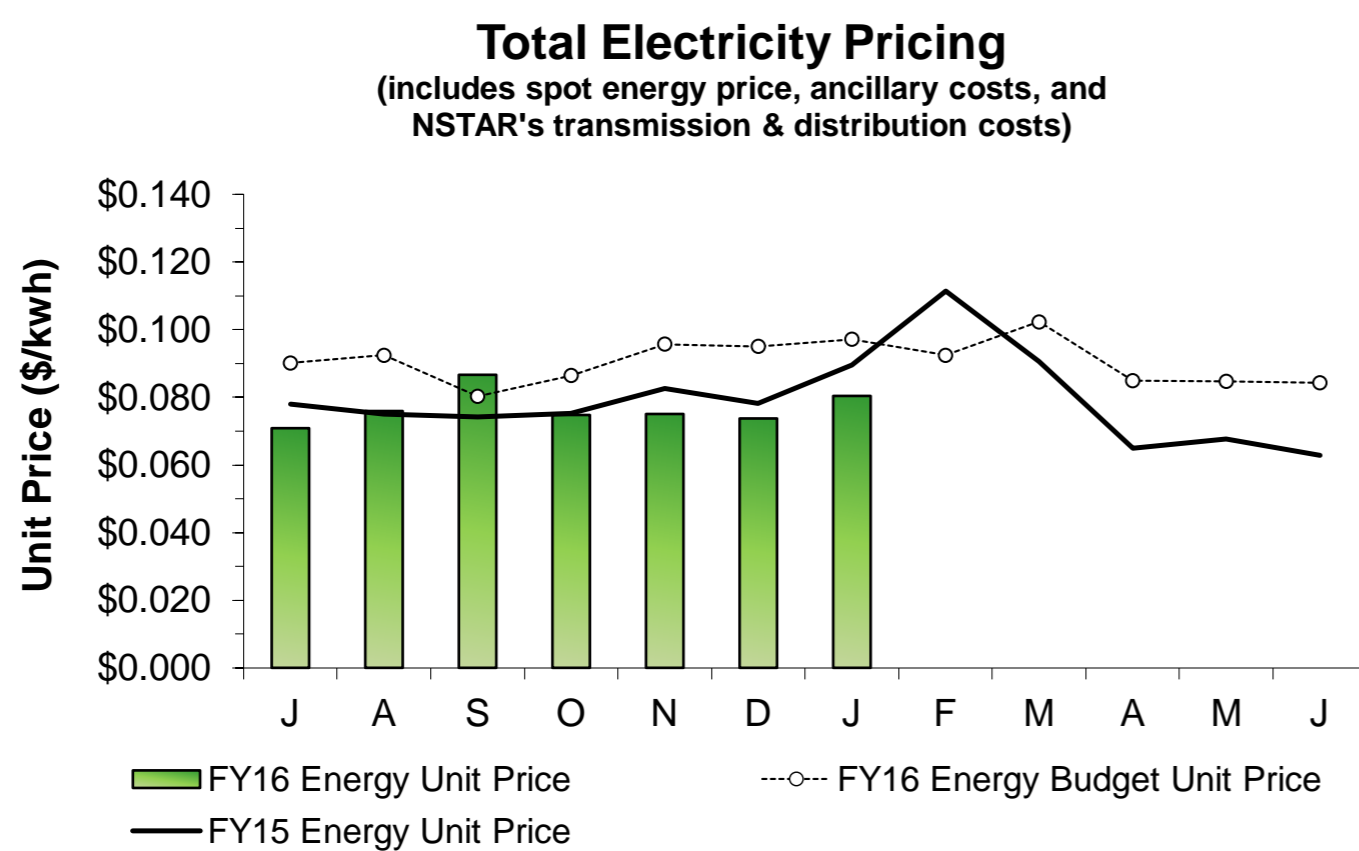


Total power usage in the 3rd Quarter was 3.7% below target as Total Plant Flow for the quarter was on target (-0.8%) with the 3 year average plant flow for the same period. Total Power usage for wastewater pumping operations was 6.7% below target due to the lower plant flow.

Note: Power usage projections are based on 3 year averages.

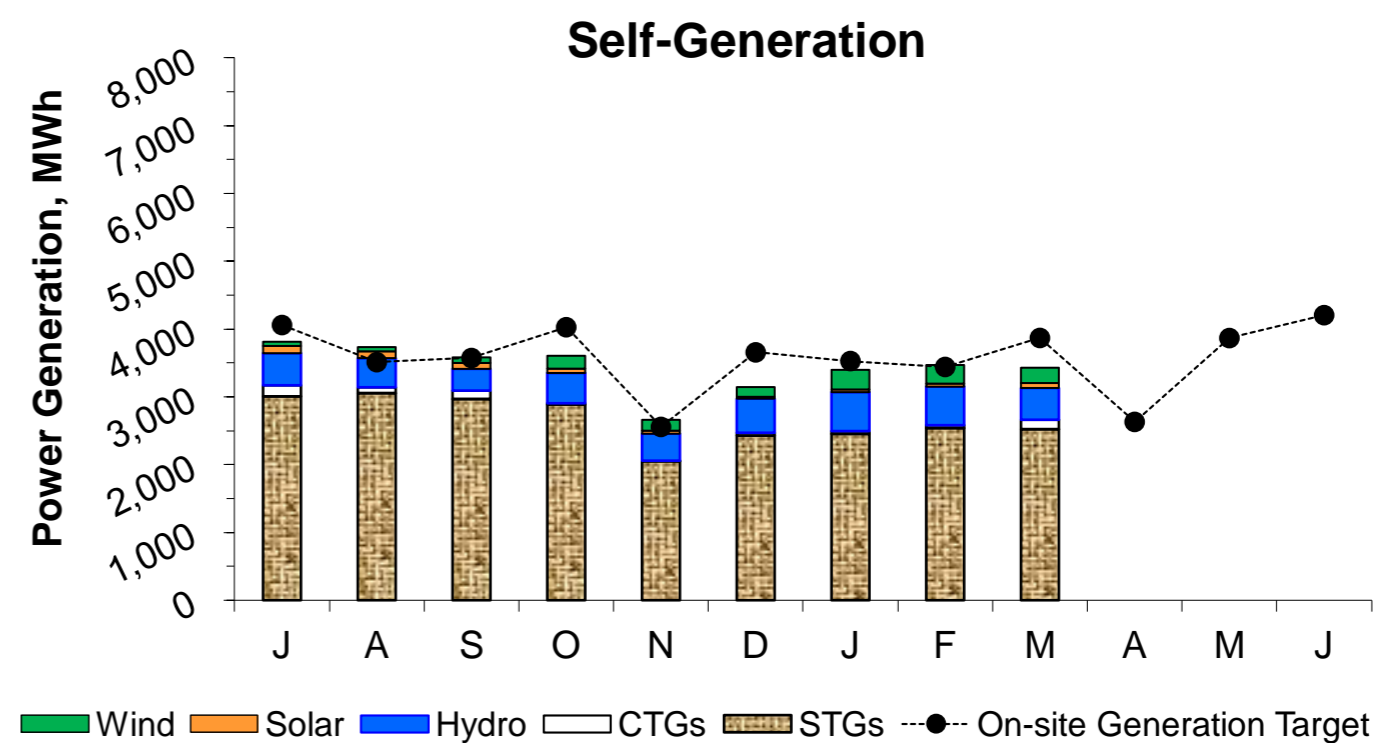


Total Plant Flow for the 3rd Quarter was 14.1% below target with the 10 year average plant flow (347.4 MGD actual vs. 404.4 MGD expected) as precipitation for the quarter was 3% lower than target (10.60 inches actual vs. 10.98 inches expected).



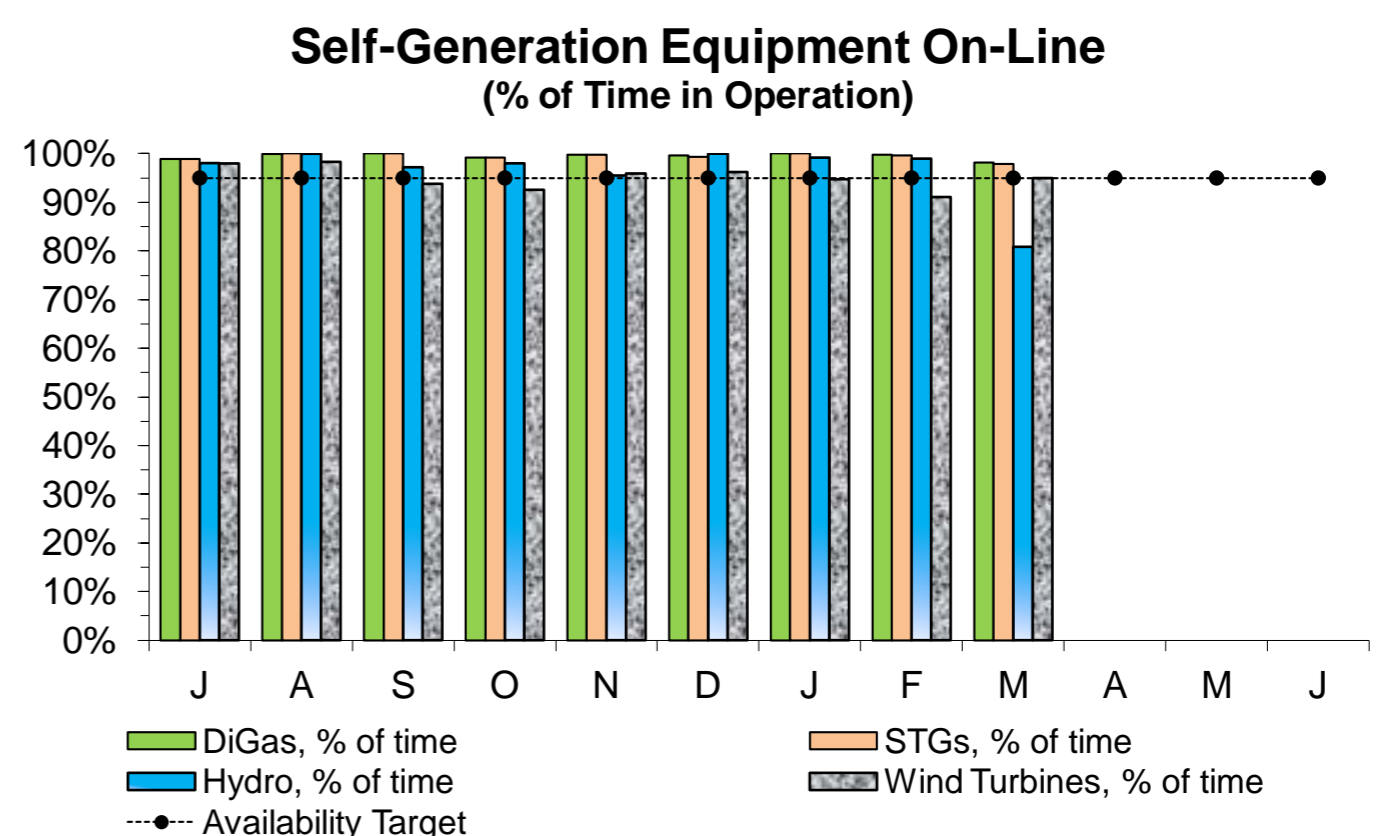
Under the current energy supply contract, a block portion of DI's energy is a fixed rate and the variable load above the block is purchased in real time. The actual Total Energy Unit Price in the 3rd Quarter (actuals for January only) was 17.3% lower than the FY16 budget estimate for the same period. The Total Energy Unit Price information for February and March are not yet available as the complete invoice for these months are still pending receipt and/or review as of reporting time. The Total Energy Unit Price includes a fixed block price, spot energy price, transmission & distribution charges, and ancillary charges.

Note: Only the actual energy prices are reported. Therefore, the dataset lags by two (2) months due to the timing of invoice receipt.

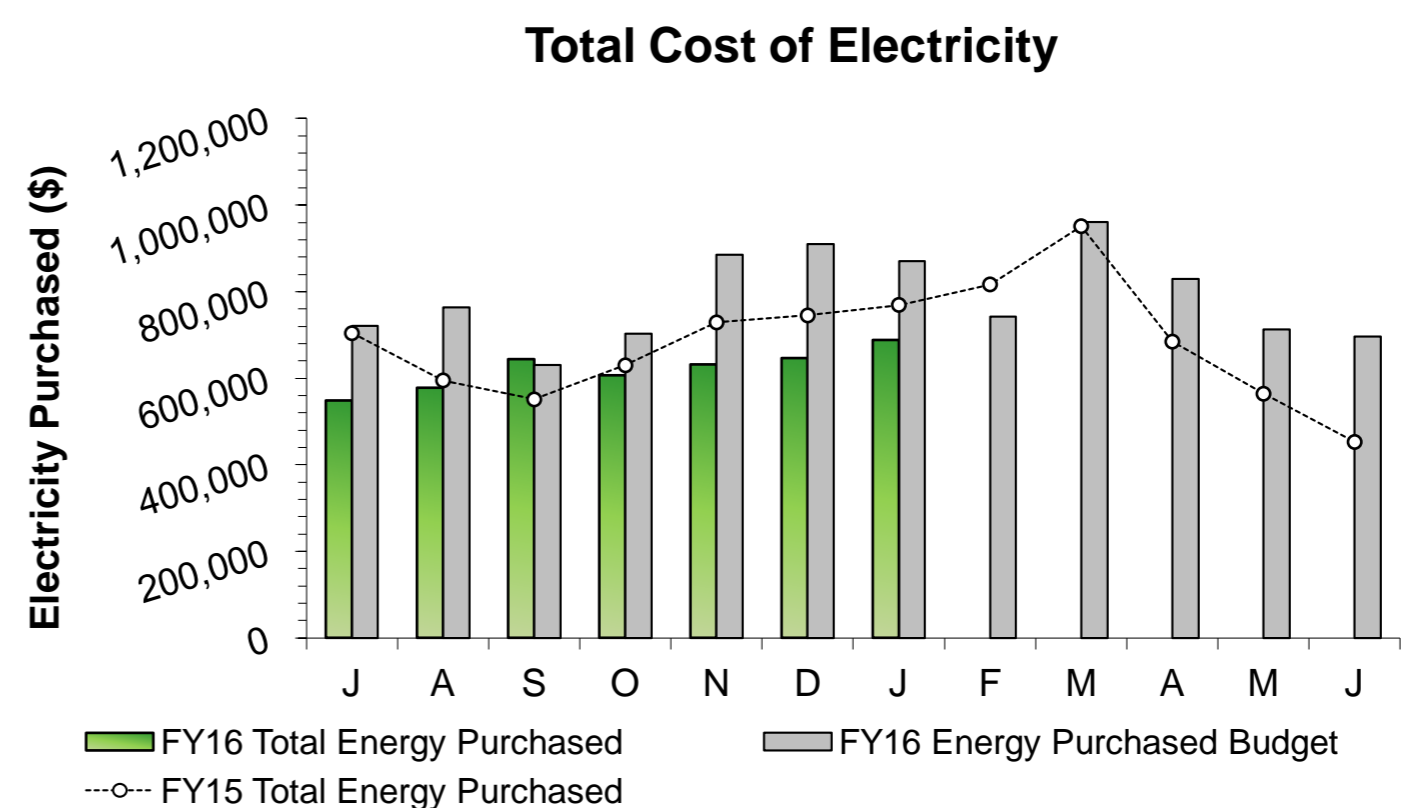


Power generated on-site during the 3rd Quarter was 5.0% below target. While generation by the STGs, Wind Turbines, and Solar Panels exceeded their target, generation by the CTGs and Hydro Turbines was below target. The CTGs generated 84.0% less power than expected during the quarter as the target assumed the CTGs would be operated for several wet weather events, but CTG operation during storms was not needed. The CTGs were however operated for approximately 12.9 hours during the 3rd Quarter for a plant-wide power outage, for opacity testing, and for maintenance/checkout purposes.

Note: Power generation data for the Solar Panels and the Wind Turbines may be difficult to see as the amount of power generated is low within the current scale of this graph; a total of 156.7 MWh was generated by the Solar Panels and 789.7 MWh was generated by the Wind Turbines in the 3rd Quarter.



The DiGas and STGs exceeded the 95% availability target for the 3rd Quarter, while the Wind Turbines fell 1.6% below target. The Hydro Turbines fell 2% below their availability target due to mechanical issues with the hydraulic system on Turbine #2 and exciter issues on Turbine #1 (that controls and adjusts the electrical currents in the excitation system of the generator) in late March.



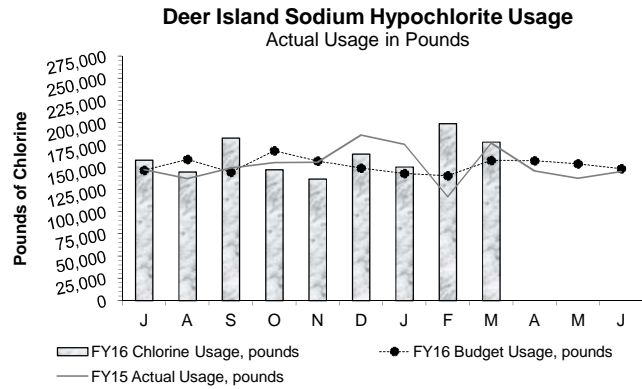
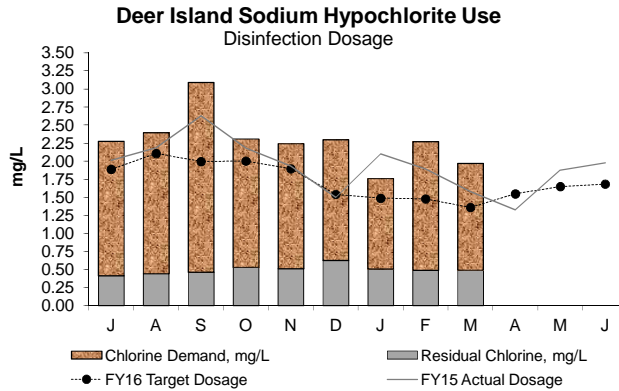
The total cost of Electricity Purchased during the 3rd Quarter (actuals for January only) was 20.9% lower than budgeted due mainly to lower than expected energy prices in the quarter (as reported). Year-to-date Total Cost of Electricity is \$1,139,132 (20.8%) lower than budgeted through January as the Total Energy Unit Price and the Total Electricity Purchased are both lower than budgeted by 17.3% and 4.4% through January.

Note: Only months with complete Electricity Purchased data are reported. Therefore, the dataset lags by two (2) months due to the timing of invoice receipt.

# Deer Island Operations

3rd Quarter - FY16

Page 2 of 4



The disinfection dosing rate in the 3rd Quarter was 39% higher than the target. DITP maintained an average disinfection chlorine residual of 0.50 mg/L this quarter with an average dosing rate of 2.00 mg/L (as chlorine demand was 1.50 mg/L). The reported chlorine dosing was much higher than expected due to an issue with the flow measurement on a sodium hypochlorite feed pump. Sodium hypochlorite usage (in gallons and therefore pounds) was biased high for February and March due to inaccurately high flow measurements from the sodium hypochlorite feed pump that was in service from February 13 through March 8. The sodium hypochlorite disinfection dose value is therefore also biased high as a result. The issue was discovered in March and the feed pump with the inaccurate flow readings was then taken out of operation and replaced with a different feed pump. Hypochlorite usage in pounds of chlorine was biased high and was 19.7% higher than the target for this month.

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

## Secondary Blending Events

Month	Count of Blending Events	Count of Blending Events Due to Rain	Count of Blending Events Due to Non-Rain-Related Events	Secondary, as a Percent of Total Plant Flow	Total Hours Blended During Month
J	1	1	0	99.8%	3.97
A	0	0	0	100.0%	0.00
S	1	1	0	98.5%	10.63
O	1	1	0	99.96%	1.50
N	0	0	0	100.0%	0.00
D	1	1	0	99.97%	2.46
J	2	2	0	99.5%	8.00
F	2	2	0	99.9%	4.42
M	0	0	0	100.0%	0.00
A					
M					
J					
<b>Total</b>	<b>8</b>	<b>8</b>	<b>0</b>	<b>99.7%</b>	<b>30.98</b>

99.8% of all flows were treated at full secondary in the 3rd Quarter. There were a total of four (4) separate secondary blending events in the quarter; all due to high plant flows resulting from heavy rain. The four (4) secondary blending events combined produced a total of 12.42 hours of blending and 66.22 Mgal of flow blended with secondary effluent. The Maximum Secondary Capacity for the quarter was 700 MGD.

Secondary permit limits were met at all times during the 3rd Quarter of FY16.

## Deer Island Operations & Maintenance Report

### Environmental/Pumping:

The plant achieved a maximum average hourly flow rate of 1,003.6 MGD on January 10 in the afternoon, during a rain event that produced 1.39 inches of precipitation. Overall, Total Plant Flow in the 3rd Quarter was 14.1% below the 10 year average plant flow target for the quarter.

Additionally, one (1) low flow record was broken this quarter:

- 365 Dry Day Flow – 255.1 MGD set by the end of January 2016 (previous record was 255.9 MGD, one month earlier, at the end of December 2015).
- A number of North Main Pump Station (NMPS) and Winthrop Terminal Headworks (HW) Facility shutdowns are planned through July 2017 as part of a significant maintenance project to replace a large number of isolation valves in the NMPS and in the Winthrop Terminal HW Facility. There have been a total of 21 contractor construction shutdowns, seven (7) full North System shutdowns and 14 Winthrop Terminal HW Facility only shutdowns, since the start of the project in September 2015 through the end of March. MWRA projects upwards of 60 total shutdowns.
- There were ten (10) Winthrop Terminal HW Facility only shutdowns and no full North System shutdowns during the 3rd Quarter. For the Winthrop Terminal HW Facility shutdowns in March, flow was stopped between 4:30 a.m. and 6:30 a.m. and wastewater pumping through the Winthrop Terminal HW facility was restarted approximately 6 to 10.5 hours later after completion of the day's work. The flows from Caruso Pump Station were redirected to Chelsea Creek/NMPS starting on the day prior to and during these shutdowns, thereby reducing the total amount of flow going to the Winthrop Terminal HW Facility. No issues were encountered at DITP during these shutdowns or during the activities to restart the wastewater pumping.

## Deer Island Operations & Maintenance Report (continued)

### Primary and Secondary Treatment:

Progress on the major Primary and Secondary Scum Tip Tube Replacement Project continues. The primary scope of this project is to replace 88 of the 96 primary treatment tip tubes, 72 treatment tip tubes in Secondary Batteries A and B, and modification of 36 secondary tip tubes in Secondary Battery C. The contractor is limited by the construction documents to working in no more than four (4) primary clarifiers (preferably limited to one battery) and three (3) secondary clarifiers (one or two per battery to minimize capacity constraints so as to not reduce the overall secondary capacity). Construction related to the physical replacement of the tip tubes was completed well ahead of schedule. Performance testing and adjustments to several of the newly installed tip tubes are both currently in progress.

### Secondary Treatment:

An unanticipated leak in a connection from the Secondary Battery A RSL (Return Sludge) main header to a sampling line occurred on February 16. Immediate action was undertaken to repair the leak in order to stop the loss of return sludge (biomass) and to minimize the impact on the biological secondary activated sludge process. The 72 inch diameter RSL header line had to be drained before repairs could proceed, which meant temporarily suspending all sludge removal from the Secondary Battery A clarifiers (for wasting and recycling back into the process). The draining and sample line repair took approximately three (3) hours and there were no negative impacts to the overall treatment process.

### Odor Control:

Televised inspections were completed in the East Odor Control (EOC) and West Odor Control (WOC) Facilities in February, and in the Residuals Odor Control (ROC) and North Pumping Odor Control (NPOC) Facilities in March to look for excessive sulfur precipitate build-up in the ductwork. The results of these inspections found very little dust or chemical residue in the ductwork. The ductwork in the EOC and the WOC Facilities were cleaned to remove any residue, and ductwork cleaning in the ROC and in the NPOC Facilities will be conducted at the end of April.

Activated carbon media in carbon adsorber (CAD) units #8 in the East Odor Control (EOC) Facility, unit #1 in the West Odor Control (WOC) Facility, and unit #5 in the Residuals Odor Control (ROC) Facility was replaced in March as part of the routine practice to replace spent carbon.

The carbon adsorbers in the Residuals Odor Control (ROC) Facility were bypassed from March 28 to March 31 due to scheduled ductwork maintenance. All process airflows were treated using wet chemical scrubbers during this period. Stack emissions limits were met at all times and no resident odor complaints were received during this project.

### Energy and Thermal Power Plant:

At 11:02 on Tuesday, March 22, 2016, a failure occurred on a control board at the Eversource (formerly NStar) Substation 385 in South Boston. This resulted in an unanticipated complete loss of power to the DITP. At the time of the power disruption, the DITP flow rate, typical of dry weather at this time of year, was 379 MGD. DITP staff powered up its backup generator, CTG-2B, and power was made available eight (8) minutes after the outage. The DITP power grid on Bus-B was cleared of all faults and pumping operation began restoration within 19 minutes, with all sewer levels in the MWRA system restored to normal, pre-event conditions within 1.75 hours from the main loss of power. All flows were contained within the MWRA collection system. No untreated wastewater was released, and there were no NPDES permit violations as a result of this outage. MWRA staff continued to recover its systems on internal backup power until staff were certain that Eversource power had indeed been returned to stable operation and treatment plant flows and levels had returned to pre-event conditions. The facility was then fully reconnected to Eversource power by 3:05 pm. CTG-2B was shut down at 3:25 pm (4 hours and 23 minutes after the event) once the power from Eversource was restored and stabilized on both the A- and B-buses.

Solar power generation accounted for 1.52% (156.7 MWh) and Wind Turbine generation accounted for 7.67% (789.7 MWh) of the total power generated on-site in the 3rd Quarter. Overall, total power generated on-site accounted for 28.7% of Deer Island's total power use for the quarter. Renewable power generated on-site (by Solar, Wind, STGs, and Hydro Turbines) accounted for 28.1% of Deer Island's total electrical power use for the quarter.

CTG-1A was taken out of service from January 11 to January 15 to allow DITP Thermal Plant staff working with the contractors to complete Major Audit preventative maintenance tasks. DITP electricians were also able to replace the station service transformer for this CTG at the same time while the CTG was out of service for the Major Audit activities. CTG-2B was available for operation during this time as emergency backup to utility power but was not needed. CTG-2B was taken out of service from January 26 to January 28 (during dry weather) to allow DITP electricians to replace the station service transformer for this CTG. CTG-1A was available for operation during this time as emergency backup to utility power but was not needed.

Annual opacity stack testing of both CTG units was successfully completed on March 9 as part of a regulatory emissions requirement. Additionally, the quarterly Continuous Emissions Monitoring System (CEMS) cylinder gas audits, along with the annual and quarterly Continuous Opacity Monitoring System (COMS) audits for the two (2) boilers in the Thermal Power Plant were successfully completed by contractors on March 10.

### Clinton AWWTP:

The rehabilitation of the primary clarifiers and anaerobic digesters are nearly complete.

#### Instrumentation:

PLC wiring and instrumentation was installed to connect to existing SCADA. A total of 29 process alarms for digester building were installed.

#### Primary Clarifiers 1&2:

Contractor finished installing gear drives, flights and scum collectors. Modified handrails to accommodate operating tip tubes. Installed new isolation valves in primary clarifiers 1,2,3 and 4. Installed new primary pump #3.

#### Primary Digester:

New rubber roof was installed. Installed the new Ovivo Linear Motion mixer and Varec Relief Valve with flame arrester. Installed two new flame arresters on waste gas burners. Filled digester with water to check for leaks.

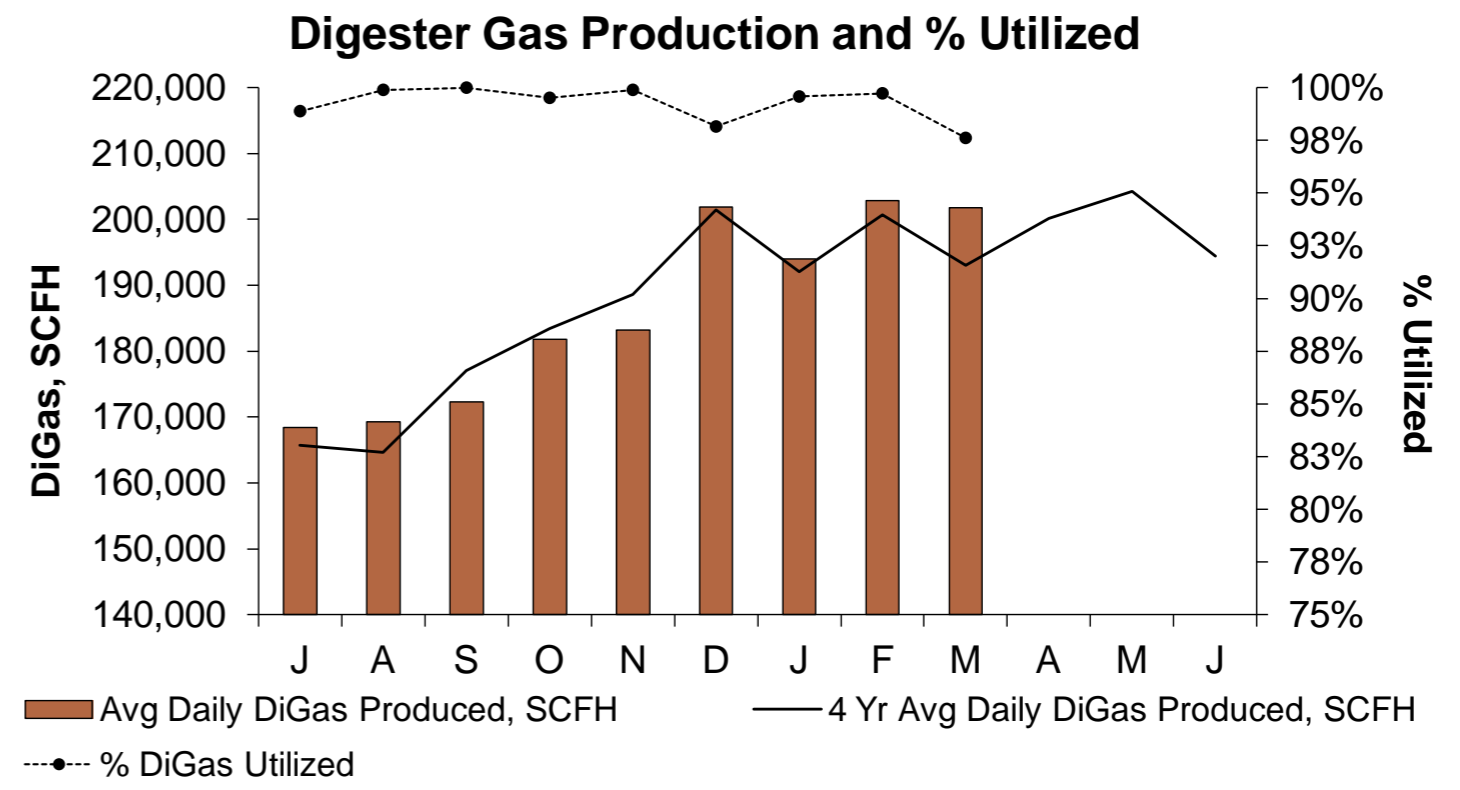
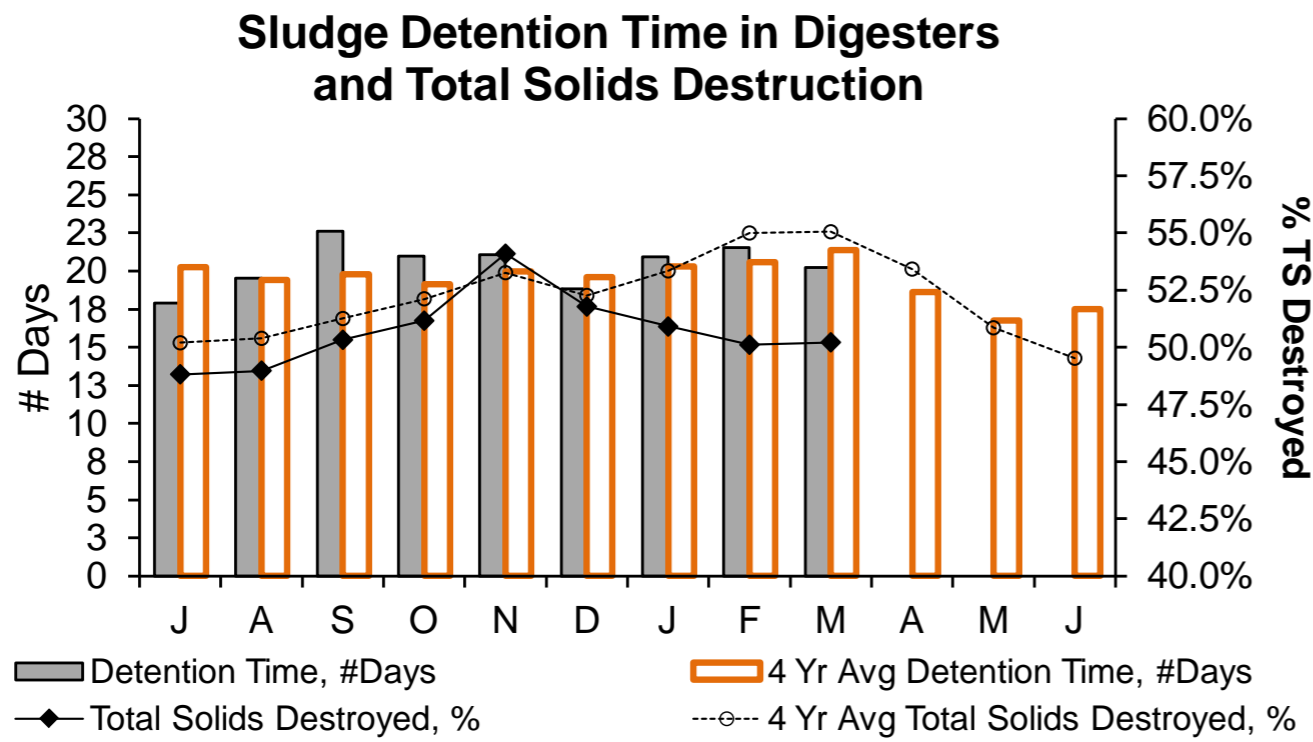
#### Influent gates:

Installed new influent gates on Clinton and Lancaster.

# Deer Island Operations and Residuals

3rd Quarter - FY16

Page 4 of 4



Total solids (TS) destruction following anaerobic sludge digestion averaged 50.4% during the 3rd Quarter, lower than the 4 year average of 54.5% for the same period. The sludge detention time in the digesters of 20.9 days was similar to the 4 year average of 20.9 days as DI operated with an average of 7.8 digesters during the 3rd Quarter. The shifting around of sludge during much of FY16 as a result of various digesters being taken in and out of service for maintenance, impacts overall solids destruction. The sludge digestion process is a biological process which requires a period of time before returning to stable digestion rates following changes in digester operation. Even though TS destruction is much lower than expected, Volatile Solids (VS) reduction (not shown here) has been higher than expected. This higher VS reduction has resulted in higher digester gas production. Therefore, the more reliable parameter to use for evaluating the performance of the digestion process during these last few months has been %VS reduced rather than the %TS destroyed.

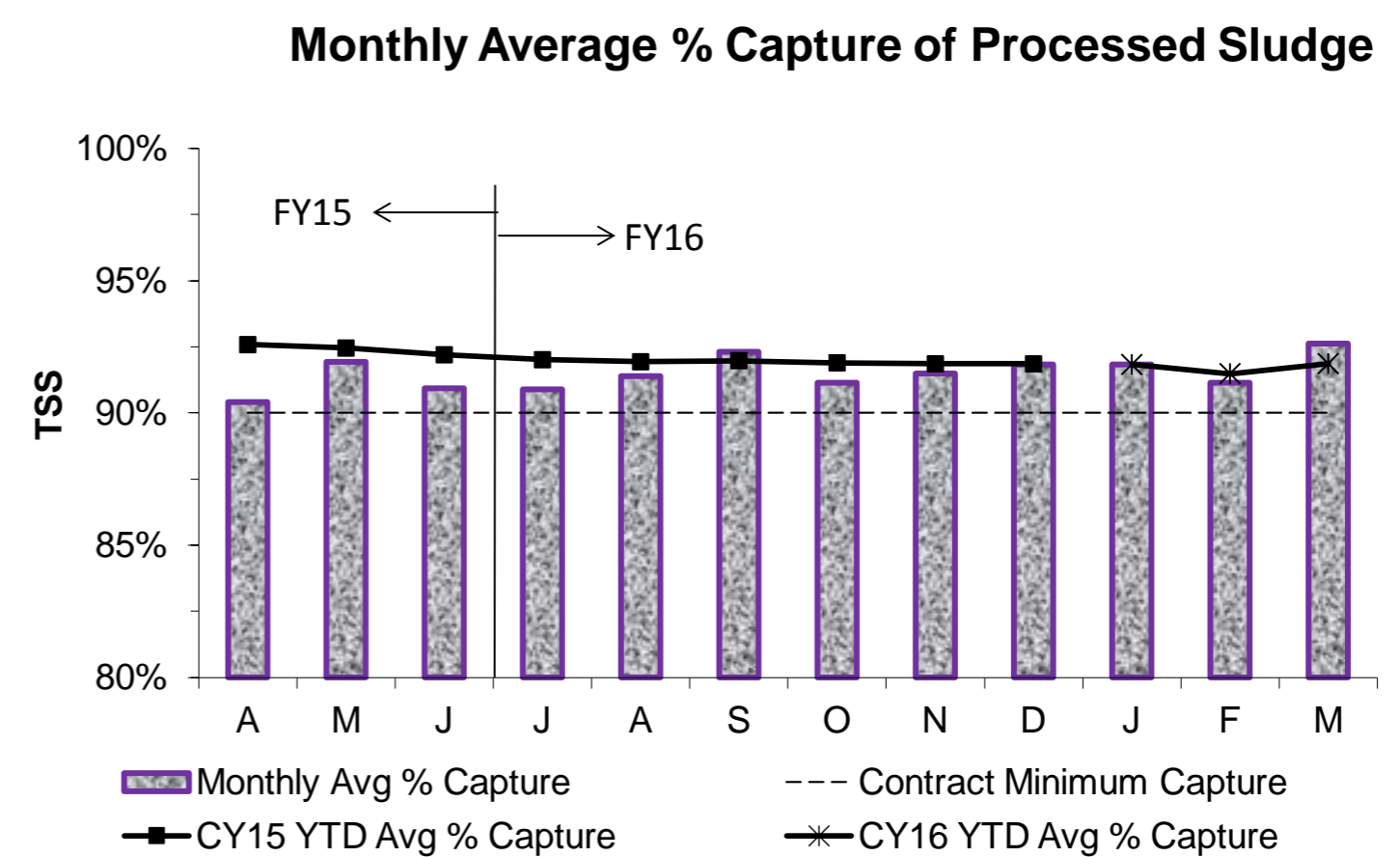
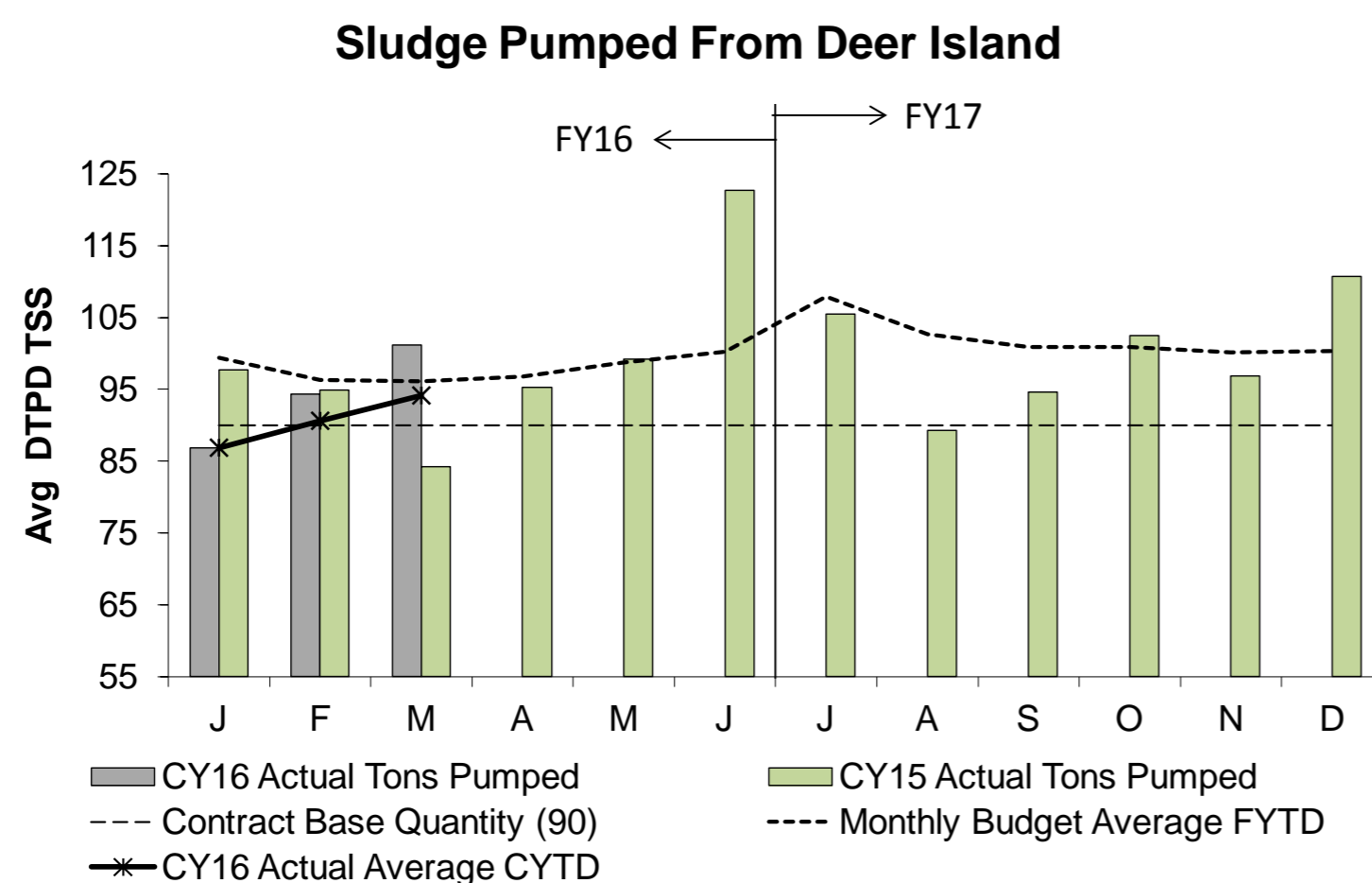
The Avg Daily DiGas Production in the 3rd Quarter was 2.2% higher than the 4 Year Avg Daily DiGas Production for the same period. On average, 99.0% of all the DiGas produced in the quarter was utilized at the Thermal Power Plant.

DiGas production on several days in March exceeded the Thermal Power Plant's capacity. Therefore, excess DiGas that could not be utilized was flared as waste gas during these periods. DiGas production was very high at times this period due to wet weather that resulted in high, readily digestible, primary solids production.

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

## Residuals Pellet Plant

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 (FY15's budget is 102.9 DTPD/TSS and FY16's budget is 100.2 DTPD/TSS).



The average total quantity of sludge pumped in the 3rd Quarter of FY16 was 94.1 DTPD - higher than FY16's average budget of 100.2 DTPD. The slightly higher amount is due mainly to slightly higher sludge production in December as a result of several days of wet weather that resulted in high, readily digestible, primary solids production.

The contract requires NEFCo to capture at least 90% of the solids delivered to the Biosolids Processing Facility in Quincy. The CY16 YTD average capture is 91.73%.

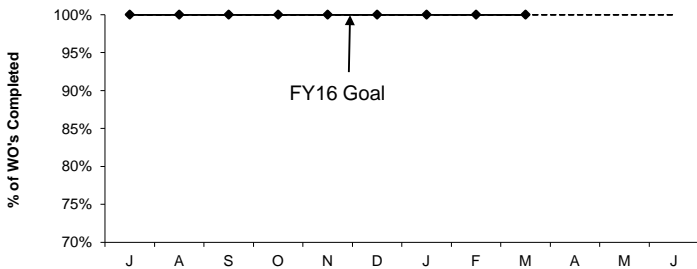
# Deer Island Maintenance

3rd Quarter FY16

## Productivity Initiatives

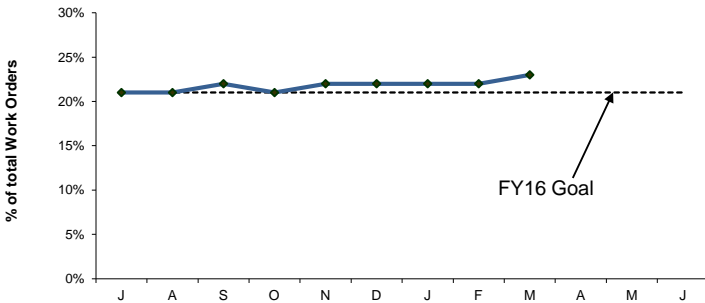
Productivity initiatives include increasing predictive maintenance compliance and increasing PdM work orders. Accomplishing these initiatives should result in a decrease in overall maintenance backlog.

### Predictive Maintenance Compliance



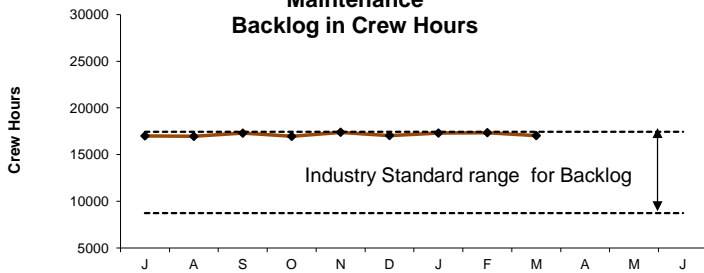
Deer Island's FY16 predictive maintenance goal is 100%. DITP completed 100% of all PdM work orders this quarter. DITP is continuing with an aggressive predictive maintenance program.

### Predictive Maintenance



Deer Island's FY16 predictive maintenance goal is 21% of all work orders to be predictive. 22% of all work orders were predictive maintenance this quarter. The industry is moving toward increasing predictive maintenance work to reduce downtime and better predict when repairs are needed.

### Maintenance Backlog in Crew Hours

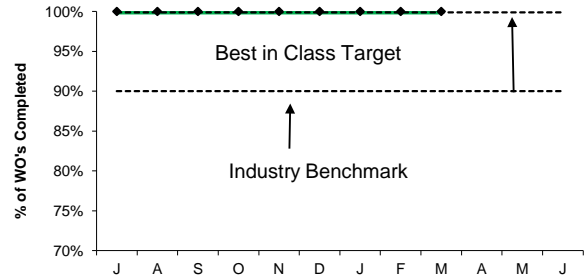


DITP's maintenance backlog at Deer Island is 17,230 hours this quarter. DITP is within the industry average for backlog. The industry Standard for maintenance backlog with 97 staff (currently planned staffing levels) is between 8,730 hours and 17,460 hours. Backlog is affected by four vacancies, a Welder/Fabricator, two Electricians and a Pipe Fitter/Plumber. Management continues to monitor backlog and to ensure all critical systems and equipment are available.

## Proactive Initiatives

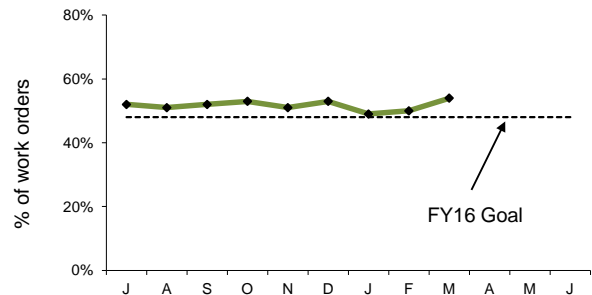
Proactive initiatives include completing 100% of all preventative maintenance tasks and increasing preventative maintenance kitting. These tasks should result in lower maintenance costs.

### Preventive Maintenance Compliance



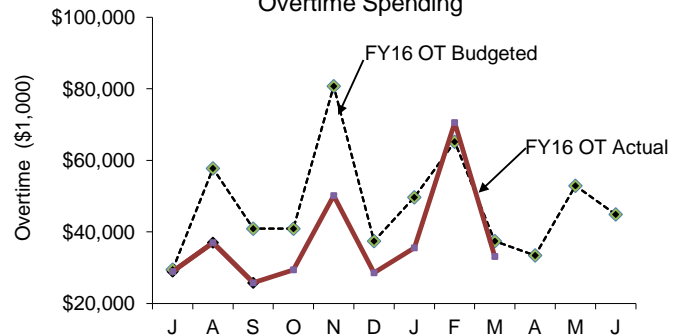
Deer Island's FY16 preventative maintenance goal is 100% completion of all work orders from Operations and Maintenance. DITP completed 100% of all PM work orders this quarter.

### Maintenance Kitting



Deer Island's FY16 maintenance kitting goal is 48% of all work orders to be kitted. 51% of all work orders were kitted this quarter. Kitting is staging of parts or material necessary to complete maintenance work. This has resulted in more wrench time and increased productivity.

### Overtime Spending

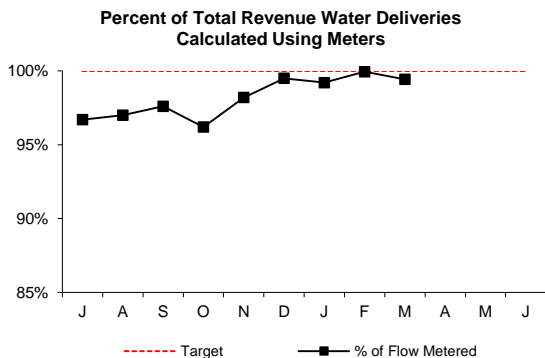


Maintenance overtime was under budget by \$13K this quarter and \$110k under for the FY16. Management continues to monitor backlog and to ensure all critical equipment and systems are available. This quarters overtime was predominately used for Storm Coverage, High Flows, Residuals Caustic Tank, East and West Odor Control Scrubbers, Waste Gas Burner #2, Primary Sludge Pumps, Winthrop Terminal Facility Bar Screen #1, and Boiler 201 Shut-Down/Start-Up for Maintenance.

# Operations Division Metering

3rd Quarter - FY16

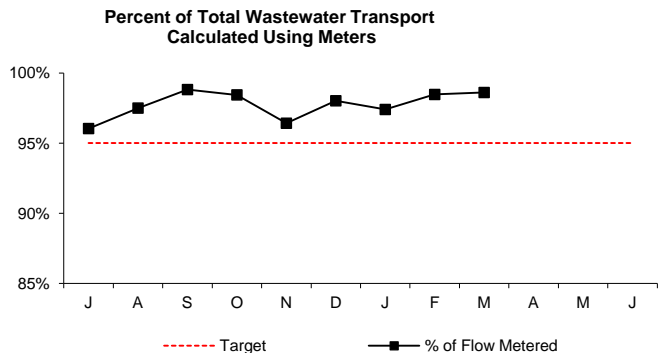
## WATER METERS



The target for revenue water deliveries calculated using meters is 100%. Estimates are generated for meters that are out of service due to instrumentation problems or in-house and capital construction projects. During the 3rd Quarter of FY16, meter actuals accounted for 99.52% of flow; only 0.48% of total revenue water deliveries were estimated. The following is the breakdown of reasons for estimations:

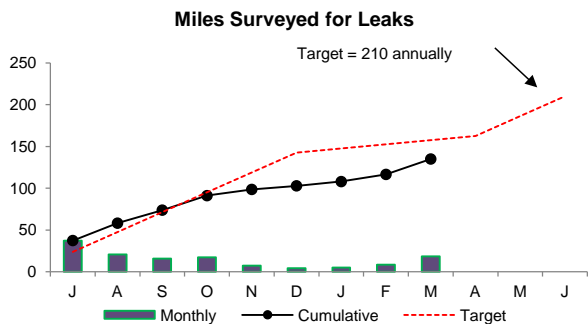
- In-house and Capital Construction Projects - 0.21%
- Instrumentation Failure - 0.27%

## WASTEWATER METERS



The target for revenue wastewater transport calculated using meters is 95%. Estimates are generated for meters missing data due to instrument failure and/or erratic meter behavior. Estimates are produced using data from previous time periods under similar flow conditions. During the 3rd Quarter of FY16, meter actuals accounted for 98.2% of flow, 1.8% of wastewater transport was estimated.

## WATER DISTRIBUTION SYSTEM PIPELINES



During the 3rd Quarter of FY16, 32.1 miles of water mains were inspected. The total inspected for the fiscal year to date is 134.93 miles.

### Leak Backlog Summary

Month	J	A	S	O	N	D	J	F	M	A	M	J
Leaks Detected	3	3	1	4	0	0	7	4	1			
Leaks Repaired	1	4	1	4	3	1	3	4	1			
Backlog	10	9	9	9	6	5	9	9	9			
Avg. Lag Time	25.7	44.1	59.4	61.1	72.4	82.1	68.8	68.6	75.0			

During the 3rd Quarter of FY16, twelve leaks were detected and eight repaired. Nine leaks remain unrepaired, of which, four are carried over from FY15. Refer to FY16 Leak Report below for details. Additionally during Q3 community assistance, ranging from individual leak location work to hydrant surveys were conducted in the following cities:

- \* January - Malden, Belmont, Somerville, Revere and Waltham
- \* February - Somerville, Brookline, Newton, Revere and Waltham
- \* March - Cambridge, Malden, Boston and Somerville

### FY16 Leak Report - 3rd Quarter

Date Detected	Location of Leaks	Repaired
5/9/2014	General Edward Bridge, Revere/Lynn	8/31/2015
5/7/2015	West Street, Hyde Park Boston Proper	7/8/2015
8/7/2015	DCR Foss Park Broadway, Somerville	8/7/2015
8/11/2015	Broadway @ Mt Pleasant, Somerville	8/18/2015
7/21/2015	Broad Street @ Union Street, Lynn	8/20/2015
7/1/2015	Fellsway East Ext @ Pond Street, Stoneham	9/2/2015
6/22/2015	825 University Ave., Norwood	10/5/2015
10/6/2015	General Lawrence Bridge, Medford	10/21/2015
10/6/2015	#49 Lynn Street @ Shute Street, Everett	10/28/2015
10/26/2015	Mystic Valley Parkway @ Rte 16, Medford	10/30/2015
9/28/2015	Winthrop Ave. @ Summer Street, Revere	11/5/2015
5/12/2015	129 West Street, Hyde Park	11/10/2015
10/27/2015	Woodland road @ Pond Street, Stoneham	11/23/2015
8/3/2015	630 Squire Rd., Revere	12/30/2015
1/6/2016	644 Pleasant St., Belmont	1/20/2016
1/19/2016	Columbus Park Sewer Station, S. Boston	1/20/2016
1/7/2016	Common St., at Spring St., Watertown	1/25/2016
2/1/2016	376 Revere Beach Parkway, Revere	2/10/2016
1/5/2016	Forest Street @ Summer Street, Arlington	2/11/2016
1/31/2016	Pleasant Street @ Lake Street, Belmont	2/16/2016
2/10/2016	45 Felton Street @ Water Street, Waltham	2/23/2016

Date Detected	Location of Leaks (cont)	Repaired
2/19/2016	Mount Vernon @ Albion Street, Somerville	3/18/2016

Date Detected	Location of Leaks/Unrepaired
1/6/2015	Washington St. @ Arborway, West Roxbury - Contractor working
1/11/2015	Arborway @ St Joseph St., West Roxbury - Working on Traffic plan
6/8/2015	Allandale Rd. @ Grove St., Brookline - Requires a shutdown
6/17/2015	Washington St @ Lower E. Street, Dedham -Requires Night Shutdown
7/16/2015	Captain Robert Cook Dr., Needham - Difficult to isolate-working to resolve
1/28/2016	Charles St., @ Canal St., Malden - Waiting for Health & Safety Plan*
1/31/2016	215 Pleasant Street, Arlington - Contractor working
2/22/2016	Waverly Oaks Rd., Waltham - Shaft 9 is down can't be repaired till up.
3/23/2016	Charles River - Section 80, Weston - to be repaired in April.

\* contaminated soil

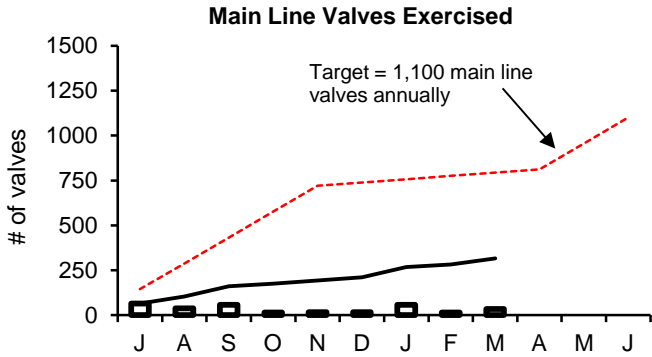
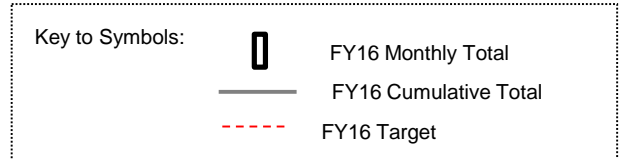
# Water Distribution System Valves

3rd Quarter - FY 16

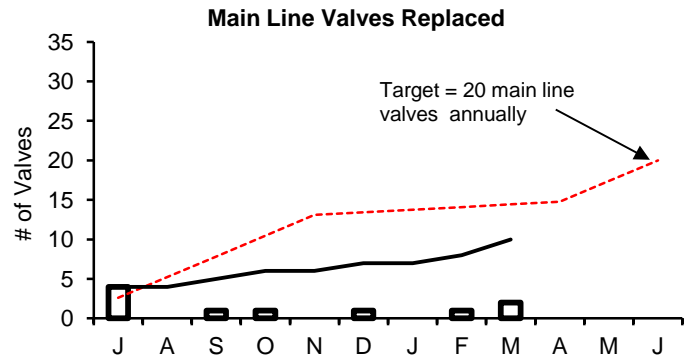
## Background

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

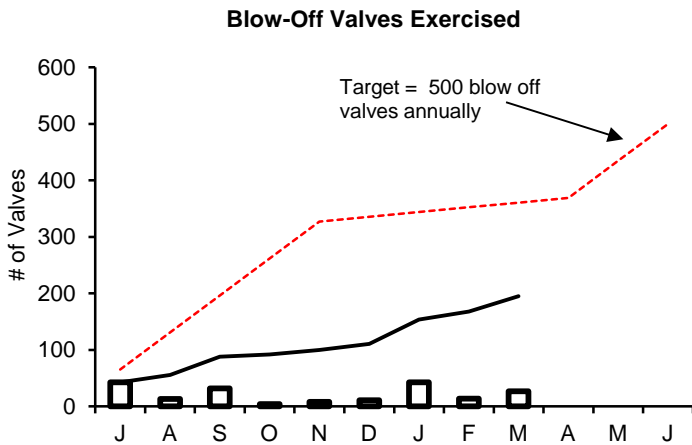
Type of Valve	Inventory #	Operable Percentage	
		FY16 to Date	FY16 Targets
Main Line Valves	2,159	96.3%	95%
Blow-Off Valves	1,317	94.3%	95%
Air Release Valves	1,380	92.8%	95%
Control Valves	49	100.0%	95%



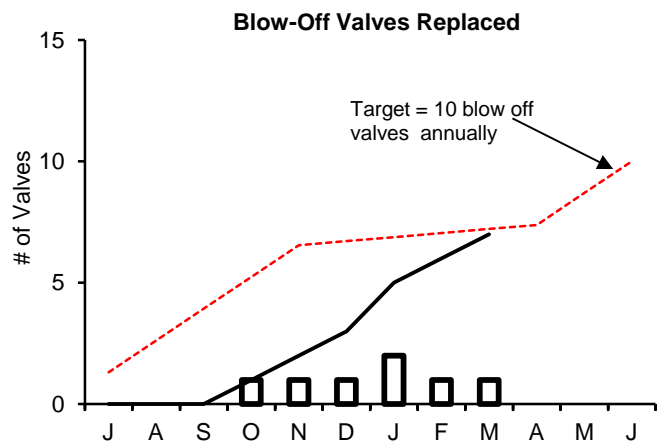
During the 3rd Q of FY16, staff exercised 106 main line valves. The total exercised for the fiscal year is 316. Below target due to high priority CIP projects.



During the 3rd Q of FY16, staff replaced three main line valves. The total replaced for the fiscal year is ten.



During the 3rd Q of FY16, staff exercised 84 blow off valves. The total exercised for the fiscal year is 195. Below target due to high priority CIP projects.



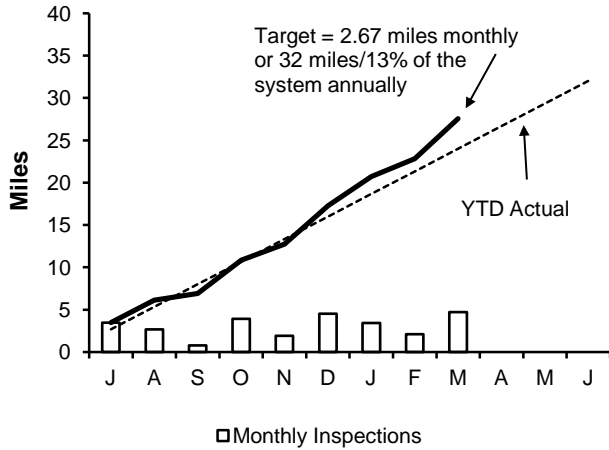
During the 3rd Q of FY16, staff replaced four blow off valves. The total replaced for the fiscal year is seven.

# Wastewater Pipeline and Structure Inspections and Maintenance

3rd Quarter - FY 16

## Inspections

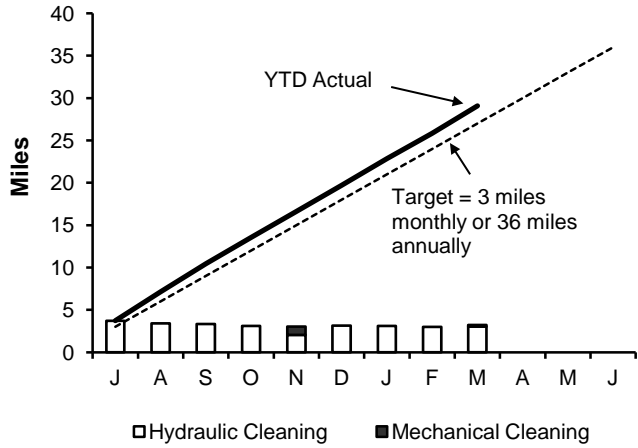
### Pipeline Inspections



Staff internally inspected 10.27 miles of MWRA sewer pipeline during this quarter. The year to date total is 27.54 miles. No Community Assistance was provided this quarter.

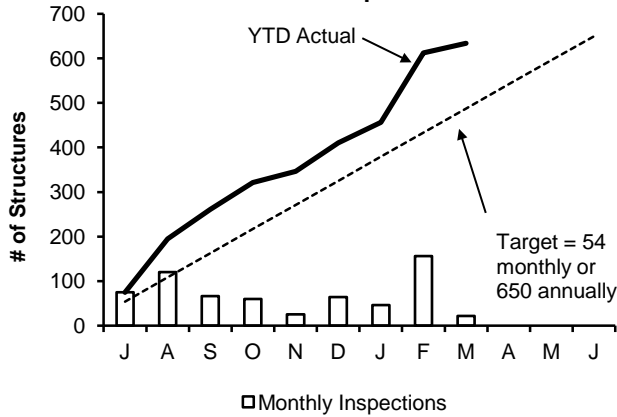
## Maintenance

### Pipeline Cleaning



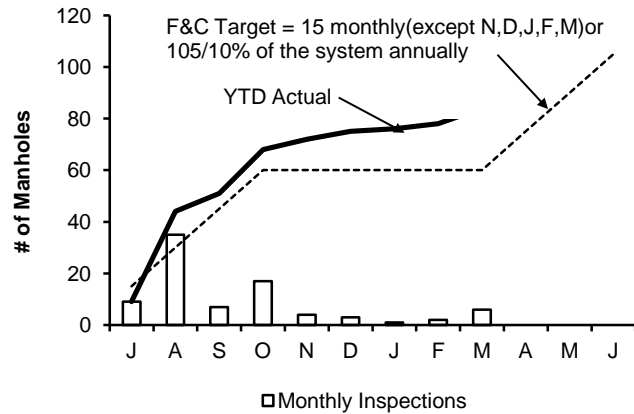
Staff cleaned 9.14 miles of MWRA's sewer system and removed 56 yards of grit and debris during this quarter. The year to date total is 29.07 miles. No Community Assistance was provided this quarter.

### Structure Inspections



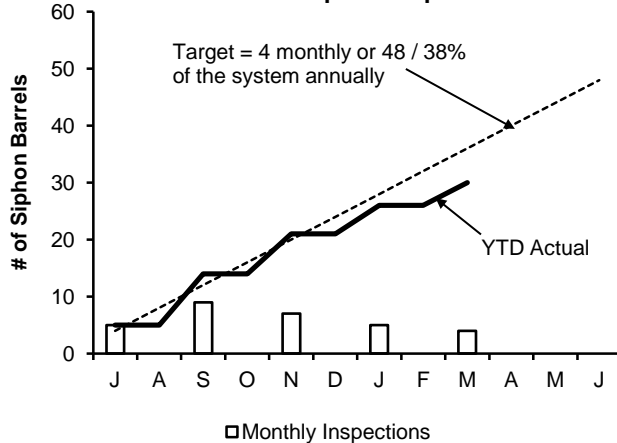
Staff inspected the 36 CSO structures and performed 188 additional manhole/structure inspections during this quarter. The year to date total is 634 inspections.

### Manhole Rehabilitation



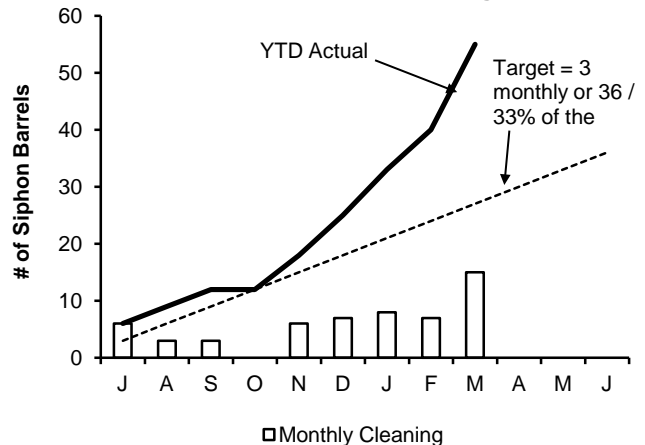
Staff replaced 9 frames & covers during this quarter. The year to date total is 84.

### Inverted Siphon Inspections



Staff inspected 9 siphon barrels this quarter. Year to date total is 30 inspections.

### Inverted Siphon Cleaning



Staff cleaned 30 siphon barrels during this quarter. The year to date total is 55 barrels.

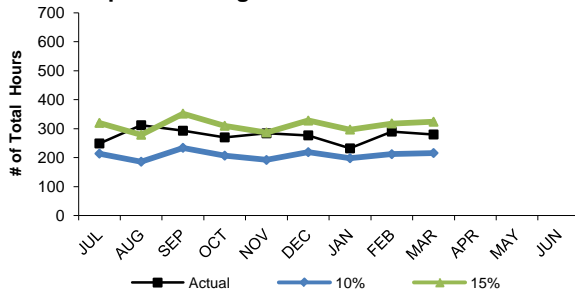


# Field Operations' Metropolitan Equipment & Facility Maintenance

3rd Quarter - FY16

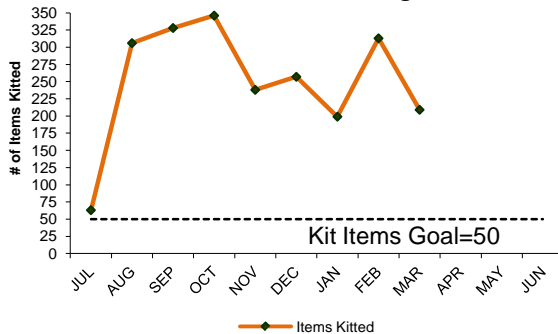
Several maintenance and productivity initiatives are in progress. The goal for the Overall PM completion and the Operator PM completion was raised to 100% for Fiscal Year 2010. The Operator PM and kitting initiatives frees up maintenance staff to perform corrective maintenance and project work, thus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

**Operations Light Maintenance PM Hours**



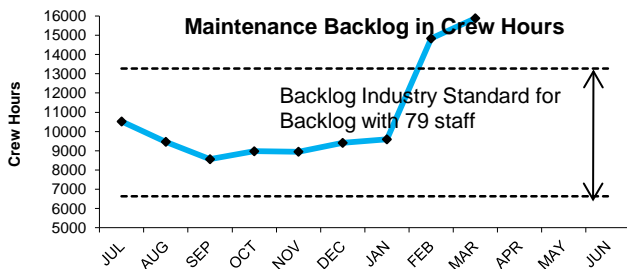
Operations staff averaged 267 hours of preventive maintenance during the 3rd Quarter, an average of 13% of the total PM hours for the 3rd Quarter, which is within the industry benchmark of 10% to 15%.

**Items Kitted Utilizing Maximo**



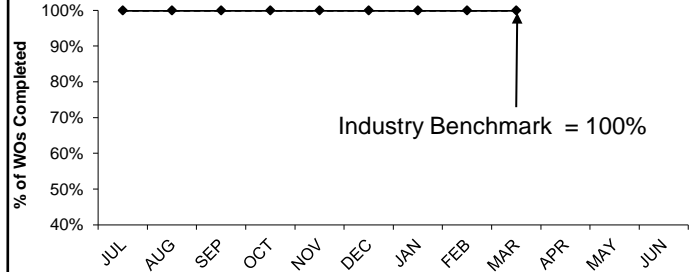
In an effort to more efficiently complete work, maintenance staff and work coordination staff have utilized the Lawson/Maximo interface to better kit stock and non stock material. The goal for FY16 is to "kit" 50 stock and non stock items total per month. An average of 240 items were kitted each month during the 3rd Quarter.

**Maintenance Backlog in Crew Hours**



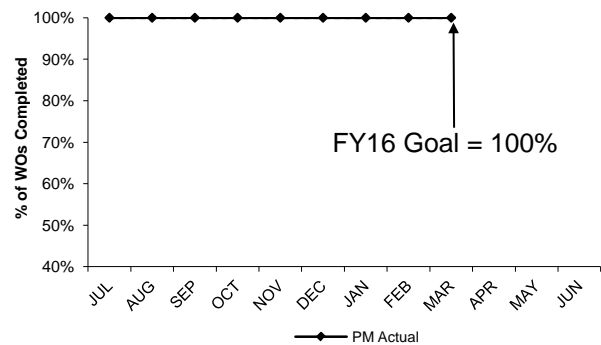
The 3rd Quarter backlog average is 13434 hours. Management's goal is to continue to control overtime and still stay within the industry benchmark of 6450 to 12,940 hours. Backlog hours are above the industry benchmark due to the Nut Island Incident response.

**Overall Preventive Maintenance**



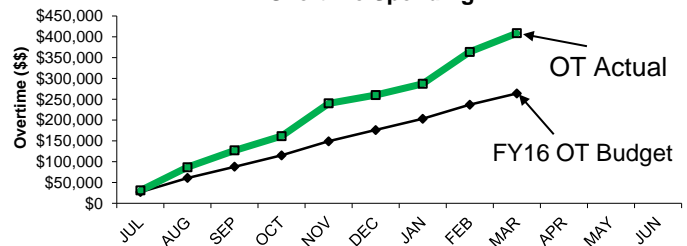
The Field Operations Department (FOD) preventive maintenance goal for FY16 is 100% of all PM work orders. Staff completed an average of 100% of all PM work orders in the 3rd Quarter.

**Operations Light Maintenance % PM Completion**



Wastewater Operators complete light maintenance PM's which frees up maintenance staff to perform corrective maintenance. Operations' FY16 PM goal is completion of 100% of all PM work orders assigned. Operations completed an average of 100% of PM work orders in the 3rd Quarter.

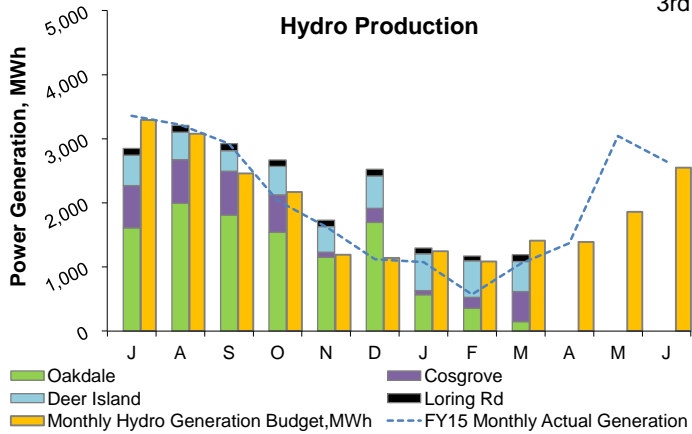
**Overtime Spending**



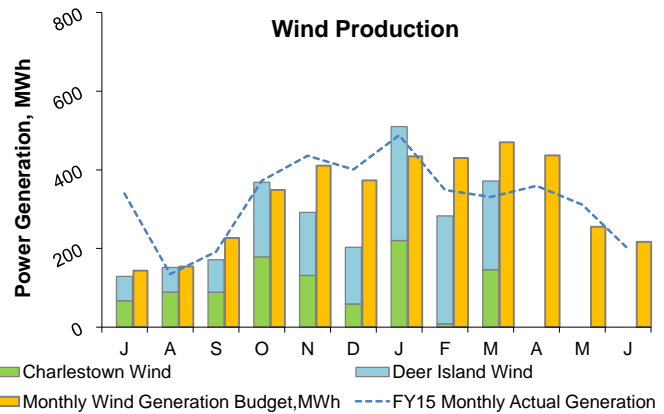
Maintenance overtime was \$149k over budget for the 3rd Quarter. Overtime was used for staging for weather events, critical maintenance repairs, and the Nut Island Incident Response.

# Renewable Electricity Generation: Savings and Revenue

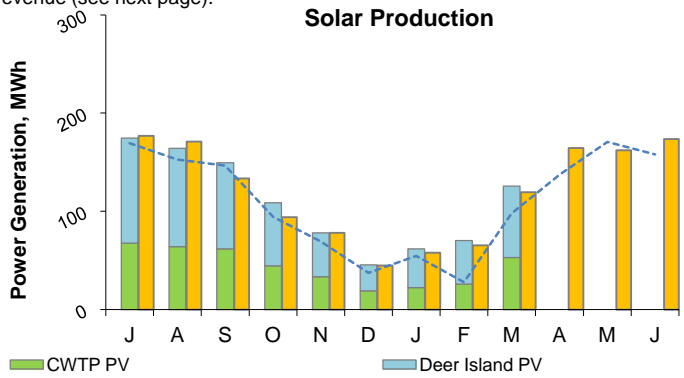
3rd Quarter - FY16



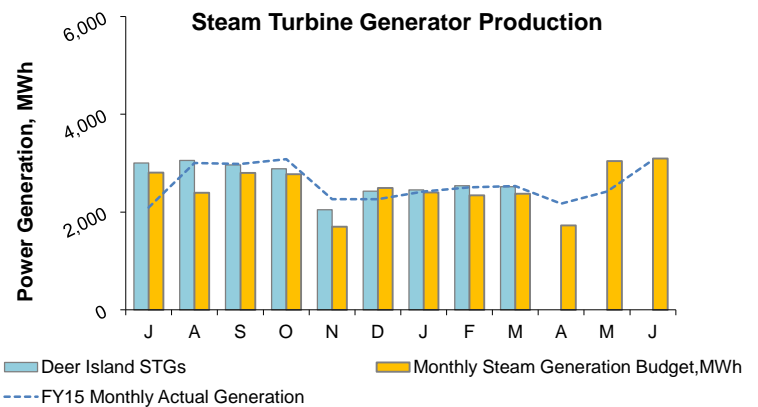
In the 3rd quarter, the renewable energy produced from all hydroelectric facilities totaled 3,652 MWh; 2% below budget<sup>3</sup>. The total energy produced to date in FY16 is 19,555 MWh; 15% above budget<sup>3</sup>; mostly due to Oakdale generating over 100% above budget in November and December. Oakdale generation values are estimated by the utility; this data was much higher than MWRA estimates and is reconciled after a few months. The total savings and revenue<sup>2</sup> to date in FY16 (actuals through January<sup>1</sup>) is \$687,941; 17% below budget<sup>3</sup>, partly due to the fact that the actual electricity unit price for Deer Island has been 15% below the budgeted<sup>3</sup> estimate for the same period, and due to Oakdale receiving a 41% on average lower than budget<sup>3</sup> price/kWh for the same period. Oakdale budget is based on a 3-year revenue average (FY12-FY14). The savings and revenue value does not include RPS REC revenue (see next page).



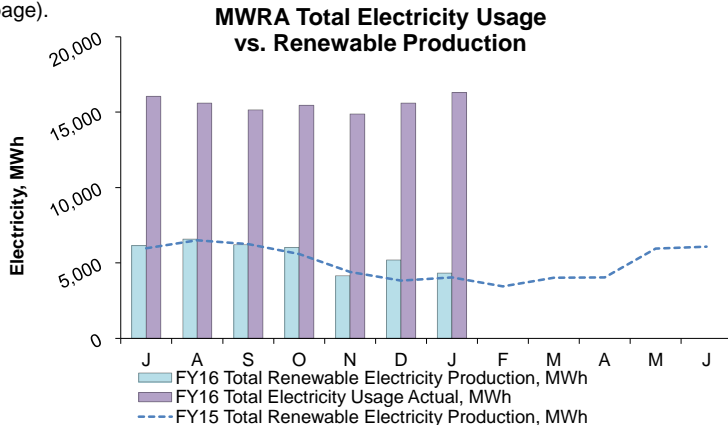
In the 3rd quarter, the renewable energy produced from all wind turbines totaled 1,165 MWh; 13% below budget<sup>3</sup>; mostly due to Charlestown Wind Turbine undergoing repairs of its main power converter. The total energy produced to date in FY16 is 2,479 MWh; 17% below budget<sup>3</sup>. The total savings and revenue<sup>2</sup> to date in FY16 (actuals through January<sup>1</sup>) is \$240,612; 10% below budget<sup>3</sup>. The savings and revenue value does not include RPS REC revenue (see next page).



In the 3rd quarter, the renewable energy produced from all solar PV systems totaled 258 MWh; 6% above budget<sup>3</sup>. The total energy produced to date in FY16 is 979 MWh; 4% above budget<sup>3</sup>. The total savings and revenue<sup>2</sup> to date in FY16 (actuals through January<sup>1</sup>) is \$90,612; 7% above budget<sup>3</sup>. The savings and revenue value does not include RPS REC revenue (see next page).

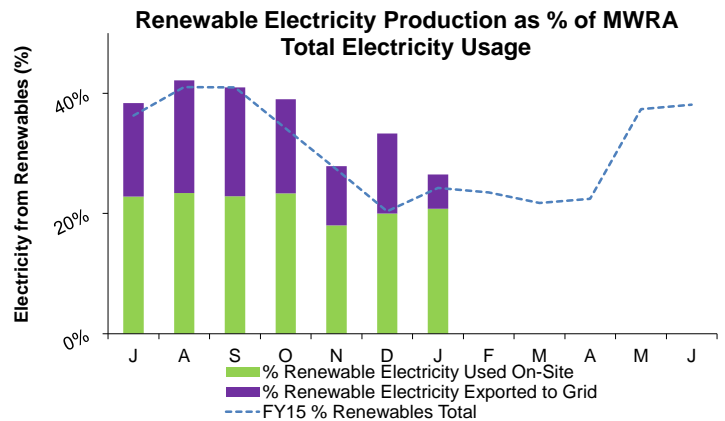


In the 3rd quarter, the renewable energy produced from all steam turbine generators totaled 7,515 MWh; 6% above budget<sup>3</sup>. The total energy produced to date in FY16 is 23,909 MWh; 8% above budget<sup>3</sup>. The total savings and revenue<sup>2</sup> to date in FY16 (actuals through January<sup>1</sup>) is \$1,448,559; 8% below budget<sup>3</sup>. The savings and revenue value does not include RPS REC revenue (see next page).



In the first 7 months of FY16, MWRA's electricity generation by renewable resources totaled 38,651 MWh. MWRA's total electricity usage was approximately 109,071 MWh. The MWRA total electricity usage is the sum of all electricity purchased for Deer Island and FOD plus electricity produced and used on-site at these facilities. Approximately 99% of FOD electrical accounts are accounted for by actual billing statements; minor accounts that are not tracked on a monthly basis such as meters and cathodic protection systems are estimated based on this year's budget.

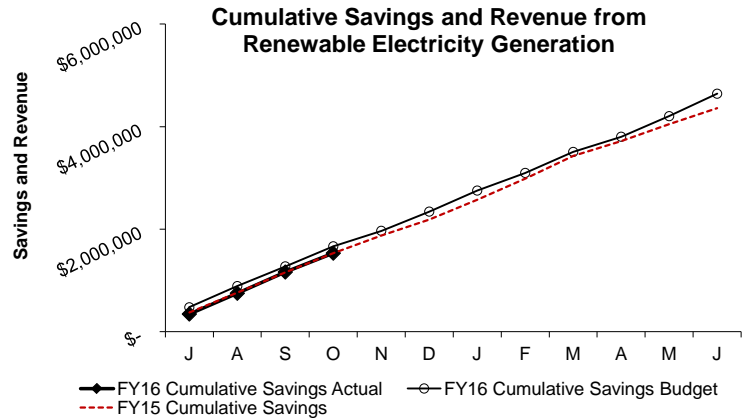
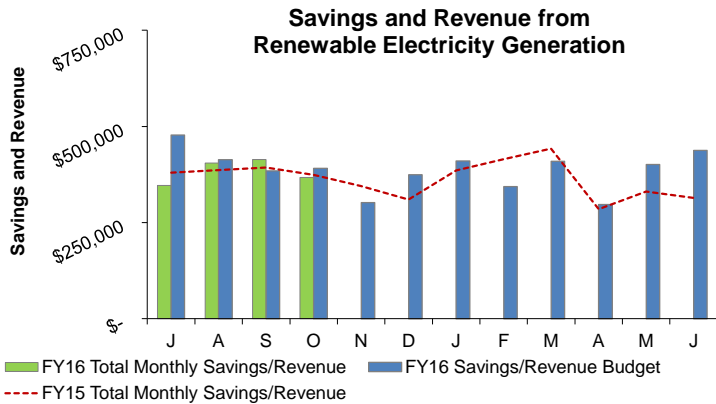
In the first 7 months of FY16, green power generation represented approximately 35% of total electricity usage. All renewable electricity generated on DI is used on-site (this accounts for more than 50% of MWRA renewable generation). Almost all renewable electricity generated off-DI is exported to the grid.



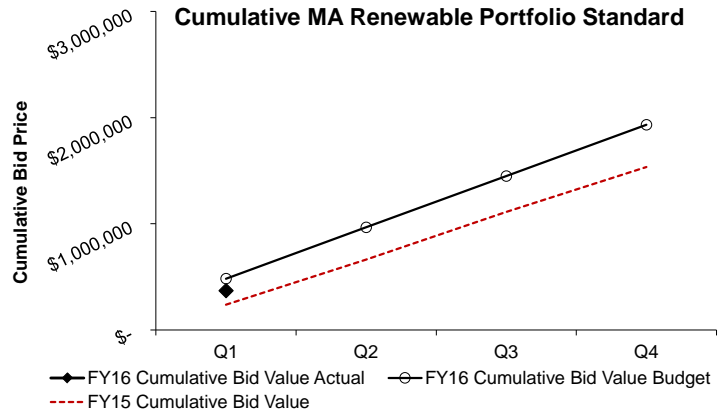
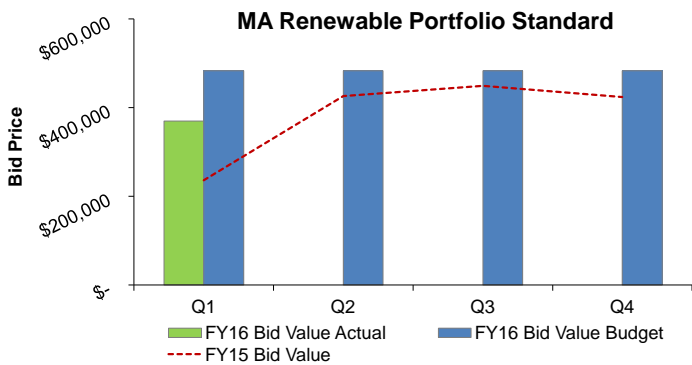
- Notes:
1. Only the actual energy prices are being reported. Therefore, some of the data lags up to 2 months due to timing of invoice receipt.
  2. Savings and Revenue: Savings refers to any/all renewable energy produced that is used on-site therefore saving the cost of purchasing that electricity,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

# Renewable Electricity Generation: Savings and Revenue

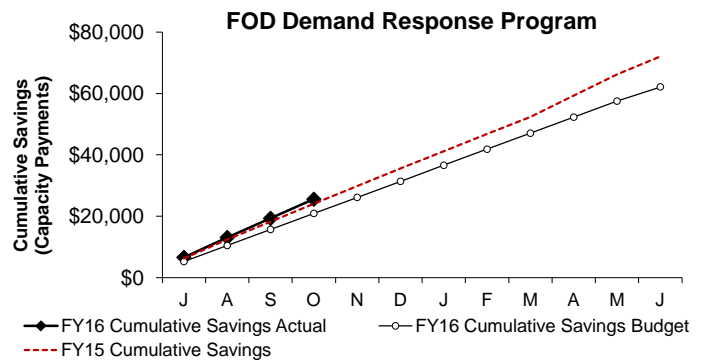
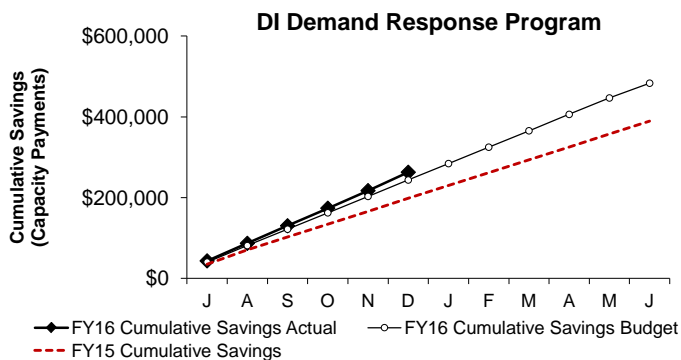
2nd Quarter - FY16



Savings and revenue from MWRA renewable electricity generation in the first 4 months of FY16 (actuals only through October<sup>1</sup>) is \$1,533,206; which is 8% below the budget<sup>3</sup>, partly due to the fact that the actual electricity unit price for Deer Island has been 11% below the budgeted<sup>3</sup> estimate for the same period. Savings and revenue<sup>2</sup> from all renewable energy sources include wind turbines, hydroelectric generators, solar panels, and steam turbines (DI). This includes savings and revenue due to electricity generation (does not include avoided fuel costs and RPS RECs). The use of DITP digester gas as a fuel source provides the benefit of both electricity generation from the steam turbine generators, and provides thermal value for heating the plant, equivalent to approximately 5 million gallons of fuel oil per year (not included in charts above).



Bids were awarded during the 1st Quarter<sup>1</sup> from MWRA's renewable energy assets; 6,715 Q1 CY2015 Class I Renewable Energy Certificates (RECs), 1,297 Q1 CY2015 Class II RECs and 53 Q1 CY2015 Solar RECs were sold for a total value of \$369,753 RPS revenue; which is 23% below the budget<sup>3</sup>. REC values reflect the bid value on the date that bids are accepted, even though the RECs were produced during Q1 of CY2015. Cumulative bid values reflects the total value of bids received to date.

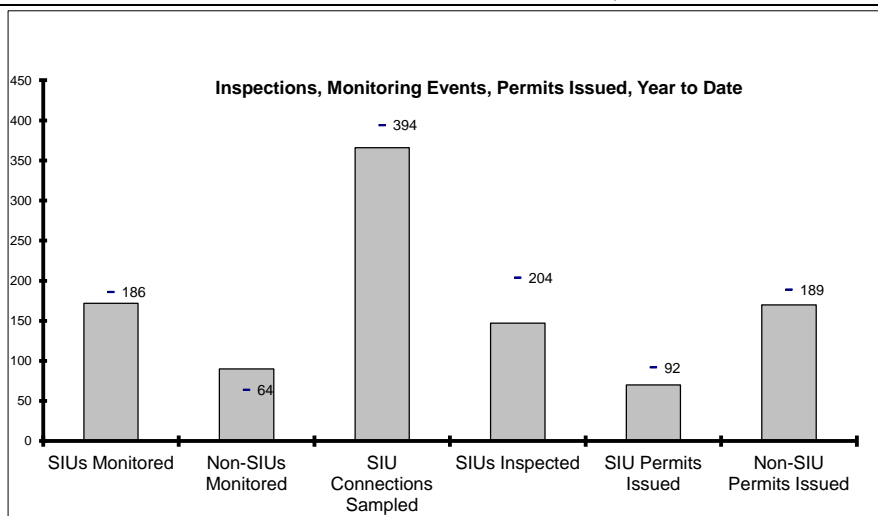


Deer Island, 2 Water, and 4 Wastewater facilities<sup>4</sup> participate in the ISO-New England Demand Response Programs. By agreeing to have its generators available to run and thus relieve the New England energy grid of some of MWRA's load during times of high energy demand, MWRA receives monthly Capacity Payments from ISO-NE. When MWRA operates back-up generators during an ISO-NE called event, MWRA also receives energy payments from ISO-NE. FY16 Cumulative savings (Capacity Payments only) through December<sup>1</sup> total \$262,825 for DI and \$25,546 for FOD through October<sup>1</sup>.

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

# Toxic Reduction and Control

## 3rd Quarter - FY16



EPA Required SIU Monitoring Events for FY16: 186  
YTD: **172**

Required Non-SIU Monitoring Events for FY16: 64  
YTD: **90**

SIU Connections to be Sampled For FY16: 394  
YTD: **366**

EPA Required SIU Inspections for FY16: 204  
YTD: **147**

SIU Permits due to Expire In FY16: 92  
YTD: **70**

Non-SIU Permits due to Expire for FY16: 189  
YTD: **170**

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

TRAC's annual monitoring and inspection goals are set at the beginning of each fiscal year but they can fluctuate due to the actual number of SIUs at any given time. During the course of the year, some SIUs do not discharge and cannot be monitored. TRAC also monitors one-third of the non-SIUs each year.

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. So

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

	Number of Days to Issue a Permit						Total Permits Issue	
	0 to 120		121 to 180		181 or more			
	SIU	Non-SIU	SIU	Non-SIU	SIU	Non-SIU	SIU	Non-SIU
Jul	4	20	1	3	0	0	5	23
Aug	10	11	0	1	0	0	10	12
Sep	7	9	0	0	0	0	7	9
Oct	8	25	0	0	0	1	8	26
Nov	14	20	0	0	0	0	14	20
Dec	6	23	0	1	0	1	6	25
Jan	4	14	0	3	3	0	7	17
Feb	4	17	0	4	0	0	4	21
Mar	9	17	0	0	0	0	9	17
Apr							0	0
May							0	0
Jun							0	0

% YTD	94%	92%	1%	7%	4%	1%	70	170
-------	-----	-----	----	----	----	----	----	-----

In this the 3rd Quarter of FY16, seventy-five permits were issued, twenty of which were SIUs. Seventeen of the SIU permits and forty-eight of the non-SIU permits were issued in the 120-day timeframe. Seven non-SIU permits were issued in the 120-day to 180-day timeframe and three SIU permits were issued beyond the 180-day period.

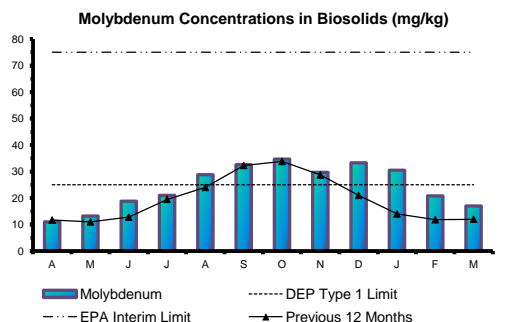
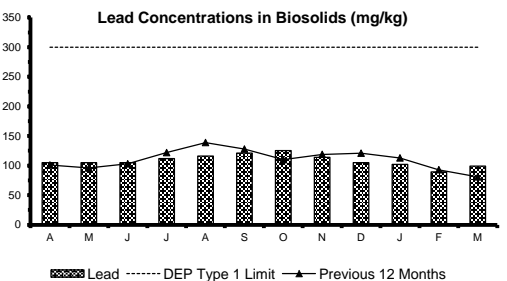
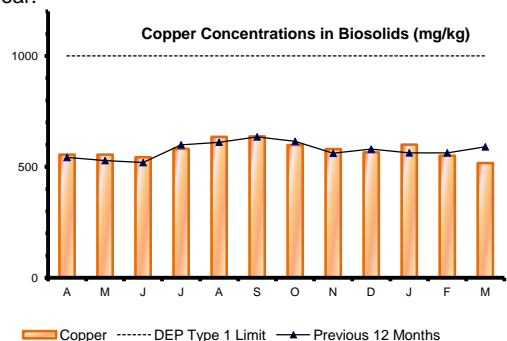
Late payment of permit fees is one of the reasons permits are issued after 120 days - together with delays due to workload, construction issues and information gathering for the determination of the permit category.

Copper, lead, and molybdenum are metals of concern for MWRA as their concentrations in its biosolids have, at times, exceeded regulatory standards for unrestricted use as fertilizer. Cooling tower usage typically causes a seasonal spike in molybdenum concentrations due to the blowdown on large AC systems that use corrosion inhibitors containing molybdenum. Levels drop again following the end of the cooling season, although this is delayed due to biosolids processing time. 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, but the situation may necessitate considering additional regulatory options.

During this 3rd quarter of FY16, the level of molybdenum has been on a downward trend with two of the three months below the DEP type 1 Limit. However the readings have generally been higher than last year's.

MWRA and its contractor (NEFCO) generally do not distribute product in Massachusetts July to January, under its approval of suitability.



# Field Operations Highlights – Orange Notebook Bullets

## 3<sup>rd</sup> Quarter – FY16

### Western Water Operations and Maintenance

- Carroll Water Treatment Plant: Staff completed the annual half-plant shutdown. This involves draining all of the tanks and flushing all systems. The primary contactors and storage tanks are then cleaned and maintenance tasks completed on all offline systems. This included replacing the rupture discs on the primary contactors, replacing back pressure valves on chemical feed systems, replacing UV Lamps that have reached the end of the service life as well many other tasks that can only be completed during the annual shutdown. Prior to the completion of half-plant, staff inspected the connecting piping between the Operations Building and the UV Treatment Facility and found several concrete joints that needed to be repaired. The piping was completely dewatered and staff made internal masonry repairs.
- Southborough Administration Building. There was a sprinkler line freeze in the conference room ceiling on the second floor of the administration building in mid-February, causing significant damage to both floors of the building. In house staff as well as risk management and contractors responded immediately and started the repair and recovery work. The carpet has been replaced in most areas, as well as drop ceiling, dry wall and insulation. Electrical staff are upgrading damaged light fixtures to efficient LED fixtures and replacing damaged outlets. The facility is getting a clean coat of paint. The work is ongoing but the facility has remained staffed and operational the entire time.
- Quabbin DCR Headquarters: Electrical Maintenance Staff provided troubleshooting assistance at the Headquarters Building. There were damaged wires connecting the main building to the hanger/maintenance facility. Staff removed the old cloth insulated wires from the connecting conduit and installed modern wiring, providing a safe reliable connection between the locations.

### Metro Water Operations and Maintenance

- Work was completed for the season on Section 40 on Hyde Park Avenue and will continue in the spring. Four blow-off retrofits were completed (two in Revere on Sections 72 and 85 and two in Boston on Sections 20 and 58). Leaks were repaired on WASM 11 in Belmont on Section 25 in Watertown, the 4" water service line to the Columbus Park Headworks on Section 62 in Arlington, Section 69 in Revere, WASM 10 on Felton Street in Waltham, and at Shaft 9 in Somerville. The repair of the WASM 11 leak required isolation of a portion of the pipeline in Belmont, isolation of the suction line to the Belmont Pump Station, and activation of a Pressure Reducing Valve (PRV) within the Belmont Water System to replicate service from Meter 88. The existing Pressure Reducing Valve (PRV) at the Arlington Covered Reservoir from the Northern Extra High (NEH) Service Area provided supply to the Intermediate High (IH) Service Area with the Belmont Pump Station isolated.
- Excavation began on a leak on Section 49 adjacent to NGrid property on Charles Street, which requires the development of a health and safety plan due to soil conditions. The plan has been developed via task order, and the repair will begin next quarter. Section 49 remains isolated, and service remains normal in the Northern High Service (NHS) Area. The leak on Section 62 was on a joint on a tee that also connected to Section 63 at Forest Street. Both pipeline sections needed to be isolated to deal with the leaking tee. Isolation of Section 63 also required the isolation of the Turkey Hill Tank and Meter 130 to Winchester. The Meter 130 service area was temporarily supplied through an emergency connection from Arlington. The leak was successfully repaired by replacement of the tee and adjacent valve, and both pipelines were reactivated. There were no service issues in the area of Winchester normally supplied by Meter 130 during the operation.
- A leak on the piping at Shaft 9 was on the joint of a valve, requiring the valve to be replaced. Staff excavated and exposed the Hultman Aqueduct at Shaft 5A for inspection of the top of the leaking joint. Staff mobilized equipment and erosion protection barriers for a leak on Section 80 near Recreation Road in Weston. The repair is anticipated to be completed in early April. The need for the potential isolation of the main has been coordinated with Needham and Wellesley.
- Two staff members were part of the MEMA Snow Removal Response Team to Washington, D.C. with one of the sections front-end loaders. Our staff traveled in convoy with Mass DOT, DCR, and Massachusetts State Police down and back from Washington, D.C.
- Cambridge began taking water on February 2, as they have bid a contract to replace approximately 1500 feet of 40" transmission water main in their system. Supply to Cambridge is through Meter 145. The city plans on being capable of supplying the majority of their water needs utilizing their water treatment plant. Our connection will supply water generally through the higher demand periods during the day. This is expected to be primarily during the morning demand periods. Cambridge expects they will need 1 to 2 million gallons of water per day through the spring.

## Wastewater Operations & Maintenance

- North Main Pump Station Shutdowns: Operations Staff continued to assist with the North Main Pump Station Contract Equipment Upgrades and Modifications which were onsite to ensure the proper operation of all wastewater facilities during the shutdowns. Staff previously provided wastewater system operating conditions and developed operational control strategies. Nine shutdowns were conducted of the Winthrop Terminal during the quarter.
- Union Park Annual Operating Report: Wastewater Operations Staff met with Woodard & Curran Staff onsite at Union Park to review the 2015 Annual Operating Report and to perform a joint yearly inspection of the facility. Operations Staff also conducted a tour of Union Park for a new staff member of the Advisory Board.

## TRAC

- Compliance Staff issued 57 Notices of Violations, 1 Demand Letter for stipulated penalties, 7 Notices of Noncompliance and 1 Return to Permit Letter; collected permit fees totaled \$1,724,373.69; issued 4 Notices of Noncompliance and continued to negotiate resolutions to several high-level enforcement matters.
- Inspections and Permitting Staff monitored the Septage Receiving Sites a total of 69 times; conducted 3 septage hauler inspections necessary to renew and update a Septage Hauler Permit; conducted 213 inspections of existing gasoline/oil separators and inspected 47 new construction gasoline/oil separators; and conducted 63 Annual SIU Inspections and 195 other inspections.
- On March 25, 2016, TRAC was asked to respond to Chestnut Hill Reservoir to collect samples because of a concerned college student had observed strange yellow outlines around the rocks at the edge of the reservoir and a dead fish. Samples were brought to Deer Island for analysis where it was determined to be very similar to Scots Pine Pollen in the water.

## Environmental Quality-Water

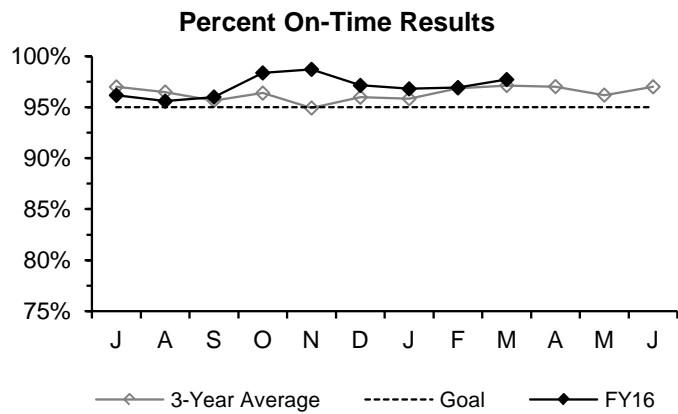
- The 2016 plan for algal toxin, taste and odor compound sampling was reviewed at the monthly Water Quality Team Meeting. The sampling approach will be consistent with that of EPA's proposed Unregulated Contaminant Monitoring Rule 4 (UCMR4).
- Worked with Planning and Laboratory staff to develop DEP's proposed revisions state Drinking Water Regulations, and to EPA's draft Unregulated Contaminant Monitoring Rule 4 (UCMR4).
- Staff provided presentations to community staff as part of MWRA's annual Emergency Response Training Program. Presentations focused on the importance of and logistics involved with water quality complaints.

## Environmental Quality-Wastewater

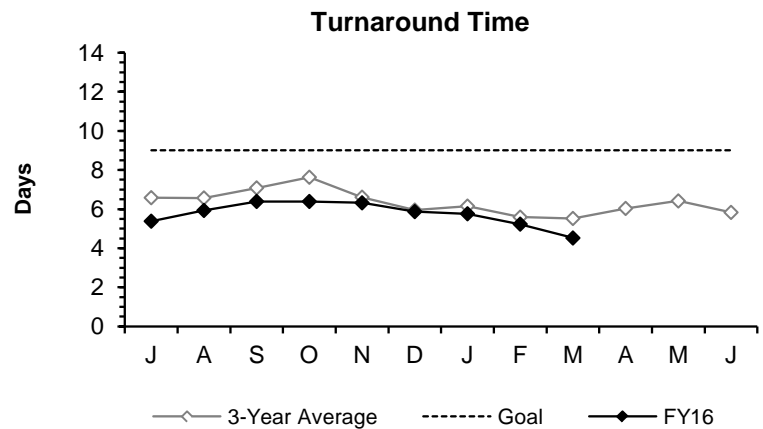
- Ambient Monitoring: Contingency Plan Threshold Tests were carried out on nuisance algae abundances in September and October surveys (there were no exceedances). Contingency Plan Threshold Tests on the mussel study and on the lobster results also showed no exceedances. The 2016 field season commenced with two Water Column Monitoring Surveys in the first quarter of CY2016.
- Harbor/Beach Monitoring: Harbor Monitoring Plans for 2016 have been finalized to emphasize water quality recovery time following wet weather. New harbor field data review and loading procedures for the 2016 monitoring year were introduced in January. Data from the 2015 field season was posted on the web.
- NPDES Reporting: The SSO real-time reporting web page was posted in the NPDES Section of the MWRA web site, with its first public notification on January 17. A real-time reporting page for CSO treatment facilities is currently under development and will be published next quarter.

## Laboratory Services

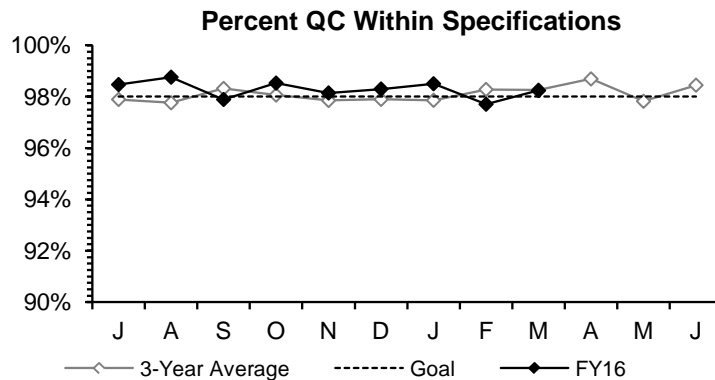
3rd Quarter - FY16



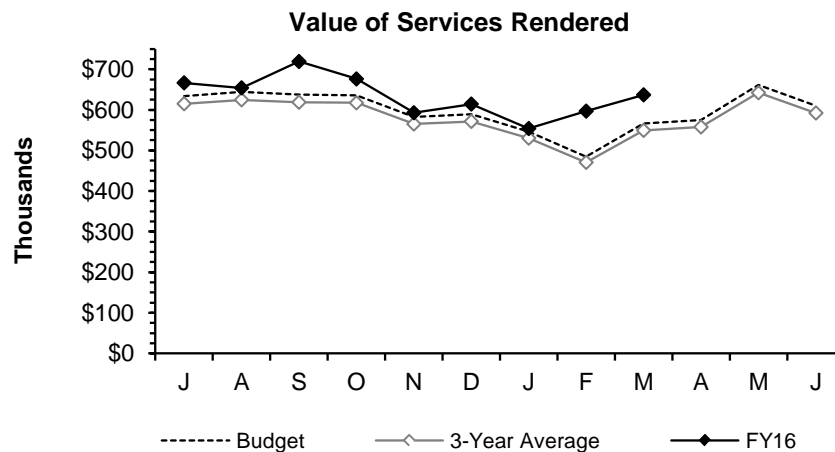
The Percent On-Time measurement was above the 95% goal each month of the quarter.



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



Percent of QC tests meeting specifications met the 98% in-house goal for two months of the quarter.



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

### Highlights:

Lab Services has met or exceeded its on-time results and turnaround time goals each month for the past 27 months.

### Quality Assurance:

Got acceptable results on 370 of 380 annual proficiency test results on the first try at all Lab locations for a passing rate of 97.4% for drinking water and wastewater. We have until the end of the calendar year to pass the remaining 10 parameters.

### Drinking Water:

Performed rush tests for glycol to assist Norwood where a building was having backflow preventer problems.

### Residuals:

Performed phosphorus leachability tests on fertilizer pellets to support discussions on agricultural regulations.

“Reliable Determination of Cyanide in Treated Water” by Michael F. Delaney and Charles Blodget was published in the February issue of JAWWA. Lab staff Nancy McSweeney, Ed Caruso Jr., Tamara Smirnova, and Kevin Constantino all made significant contributions to the paper.

# CONSTRUCTION PROGRAMS

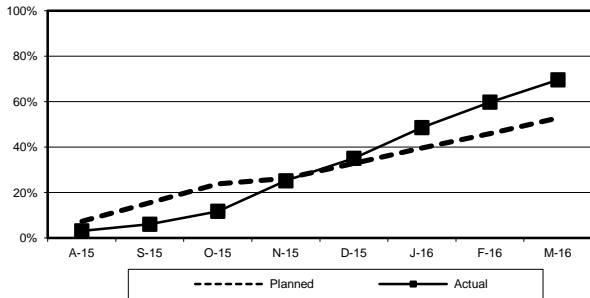


# Projects In Construction

3<sup>rd</sup> Quarter FY16

(Progress Percentages based on Construction Expenditures)

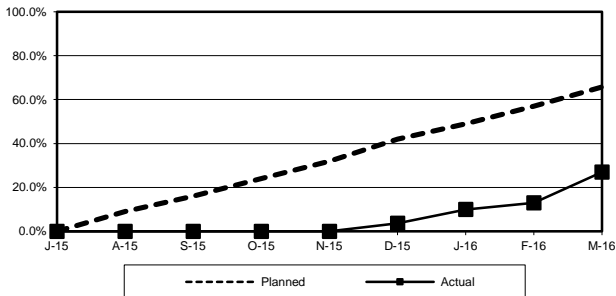
## Southborough Water Quality Lab Progress – March 2016



**Project Summary:** This project involves the rehabilitation of the Southborough Water Quality Laboratory. The work includes replacement of the roof, windows, doors and flooring, as well as modifications to the electrical, HVAC and fire protection systems.

**Status and Issues:** As of March, the Contractor completed the roof installation, lighting fixtures, fire alarm, acoustical ceiling tile, HVAC and lightning protection.

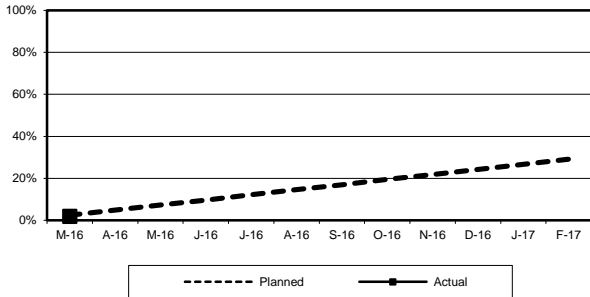
## Upgrades to Chelsea Screen House Progress – March 2016



**Project Summary:** This project involves the replacement of two dry side screens, seven gates and the rehabilitation of two wet side screens and the addition of two new gates. Also, a SCADA system will be added to the wet side to allow for remote wet weather operation.

**Status and Issues:** As of March, the Contractor installed stop logs upstream and downstream in Channel #1 on the Wet Side to perform work on Screen #1. They also removed the existing pin rack assembly on Screen #1 and installed the north side frame. A 72" diameter inflatable plug at the Gate 9 location was successfully installed.

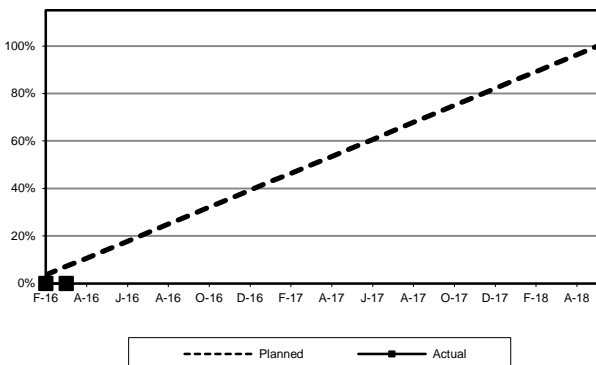
## Wachusett Aqueduct Pumping Station Progress – March 2016



**Project Summary:** This project involves the construction of a 240 MGD pump station to supply water from the Wachusett Aqueduct to the Carroll Water Treatment Plant.

**Status and Issues:** As of March, the Contractor began lowering the water level in the Forebay, conducted the pump station site pre-cut excavation, installed erosion controls and began submitting shop drawings.

## Alewife Brook Pump Station Rehabilitation Progress – March 2016



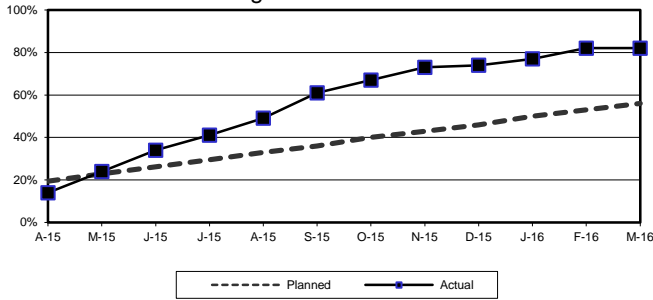
**Project Summary:** This project involves the replacement of wet-weather pumps, motors, gear drives, VFD's, MCC, screens, sluice gates, standby generator, roof, PLC's and HVAC. Also, the remediation of PCB's and asbestos and the installation of a flow meter on the 66-inch downstream Alewife Brook Conduit.

**Status and Issues:** As of March, the Contractor continued submitting shop drawings for Milestone 1, flood protection. Vendors and subcontractors have also been visiting the facility.

# Projects In Construction 3<sup>rd</sup> Quarter FY16

(Progress Percentages based on Construction Expenditures)

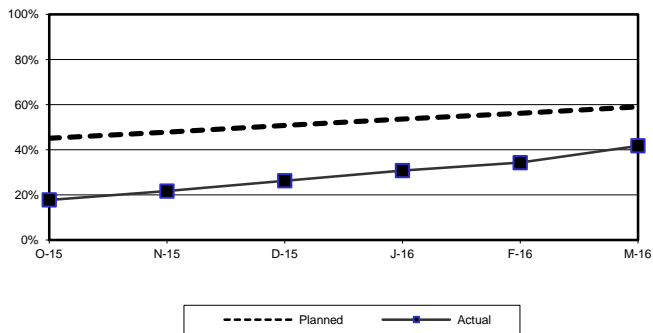
**Water Mains: Section 36, W11C and S9-A  
Progress – March 2016**



*Project Summary:* This project includes the replacement of Section 36 in Arlington; the installation of a new water main (Section W11C); and the replacement of an inoperable 48-inch butterfly valve on Shaft 9-A pipeline in Medford.

*Status and Issues:* As of March, Section W11C was disinfected and activated. Crew mobilized to S9-A in Medford, removed fencing and staged on the Jiffylube/Metro Roofing Materials properties. The 48" water main was excavated and exposed, the pipe was cut and the existing butterfly valve was removed.

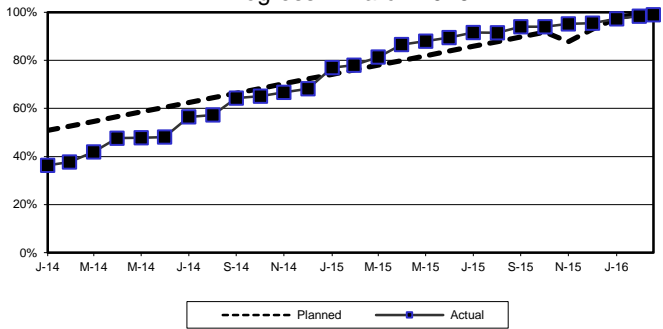
**Valves and Piping Replacements  
Progress - March 2016**



*Project Summary:* This project involves the replacement of the twenty 60" butterfly valves and ten 60" flow meters in the NMPS; three 48", twelve 36" plug/check valves, six 30" flow meters and six 30-36" gate valves in the WTF.

*Status and Issues:* The Contractor completed the installation of the new 36" plug valve, knife gate and flow meter for WTF Pump Train #5 and #6. The work in the WTF has been declared substantially complete. In addition, they began replacement of the remaining Battery A PSL piping.

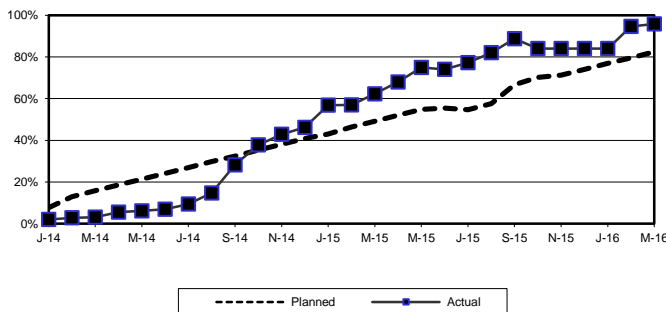
**North Main Pump Station VFDs & Motors  
Progress - March 2016**



*Project Summary:* This project involves the replacement of the existing 3500 HP variable frequency drives and synchronous motors for the RWW pumps at the North Main Pump Station.

*Status and Issues:* During March, VFD #10 completed the second 10 day OAD. On-site systems training with MWRA, subcontractors and the vendor took place. Also, the Contractor worked on miscellaneous punchlist items.

**Primary and Secondary Clarifier Scum Tip Tubes  
Progress - March 2016**



*Project Summary:* This project involves the replacement of the existing carbon steel tip tubes with 316 stainless steel in 48 primary and 54 secondary clarifiers to improve reliability and increase longevity.

*Status and Issues:* The scum skimmer installation is 99% complete in the Secondary Area and the instrumentation work is 94% complete. The functional testing on the Primary Batteries continues.

## CSO CONTROL PROGRAM

3rd Quarter - FY16

All 35 projects in the Long-Term CSO Control Plan are complete, in compliance with Schedule Seven. Remaining CSO related capital spending totaling \$15 million is scheduled through December 2020. Remaining work includes completion of surface restoration work associated with the Cambridge CAM004 sewer separation contracts, BWSC's removal of additional inflow from its sewers in the South Dorchester Bay sewer separation areas of Dorchester, and the federal court mandated CSO post-construction monitoring and performance assessment.

Project	Status as of March 31, 2016
Reserved Channel Sewer Separation	BWSC attained substantial completion on December 11, 2015, in compliance with Schedule Seven. BWSC is preparing as-built plans and is closing out its engineering and construction contracts. MWRA staff are performing final eligibility reviews of the BWSC construction contracts.
South Dorchester Bay Sewer Separation Post-Construction Inflow Removal	As previously reported, BWSC has completed its investigation of alternatives for removing additional stormwater inflow from its Dorchester Interceptor, following the closing of CSOs several years ago. MWRA's CIP includes \$5.4 million for the inflow removal effort, of which approximately \$2.7 million has already funded BWSC design and construction contracts. Additional funding will follow decisions by BWSC on its recommendations and schedule for removing additional inflow.
Cambridge/Alewife Brook Sewer Separation	The City of Cambridge attained substantial completion on December 23, 2015, in compliance with Schedule Seven. Stormwater removed from the Cambridge and MWRA sewer systems now drains to the Alewife Wetland, and Cambridge has permanently closed Outfall CAM004 to CSO discharges. Extensive surface restoration work eligible for MWRA funding at a remaining cost of approximately \$9 million is scheduled to continue through June 2017.
MWRA CSO Performance Assessment	Staff are reviewing the requirements of the EPA National CSO Control Policy, including EPA Guidance on CSO Post-Construction Monitoring, to support the development of an approach and scope for the three-year performance assessment Schedule Seven requires MWRA to conduct in the period 2018-2020. MWRA's FY16 CIP includes approximately \$2 million for the performance assessment.

## CIP Expenditures 3<sup>rd</sup> Quarter – FY16

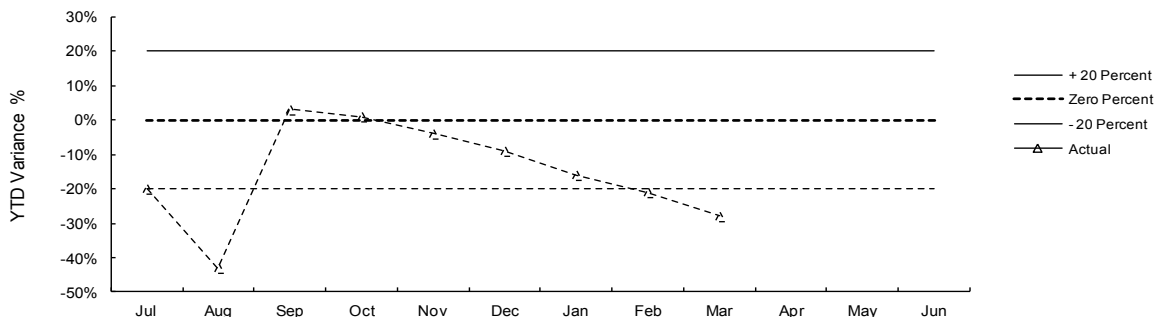
The Year-To-Date variances are highlighted below:

FY16 Capital Improvement Program Expenditure Variances through March by Program (\$000)				
Program	FY16 Budget Through March	FY16 Actual Through March	Variance Amount	Variance Percent
Wastewater	58,364	45,722	(12,642)	-22%
Waterworks	27,815	17,640	(10,176)	-37%
Business and Operations Support	4,975	2,425	(2,550)	-51%
<b>Total</b>	<b>\$91,154</b>	<b>\$65,786</b>	<b>(25,368)</b>	<b>-28%</b>

Underspending within Wastewater is primarily due to less than anticipated community requests for grants and loans, updated schedules for Chelsea Creek Upgrades, Alewife Brook Pump Station Rehabilitation and Caruso Pump Station Improvements, timing of work for Electrical Equipment Upgrades, North Main Pump Stations VFD Replacements, Chelsea Screenhouse Upgrades, Thermal Power Plant Boiler Control Replacement, Scum Skimmer Replacement, and updated cost estimates for the Reserved Channel Sewer Separation project. This was partially offset by water use charges and updated cost estimates due to unforeseen conditions for Cambridge Sewer Separation and contractor progress on the North Main Pump Station and Winthrop Terminal Facility Butterfly Valve contracts. Underspending in Waterworks is primarily due to award less than budget and updated schedules for the Wachusett Aqueduct Pump Station and Section 89/29 Redundancy Phase 1B contracts, timing of Watershed Land purchases, legal settlement for Carroll Treatment Plant Ultraviolet Design, and lower than anticipated requests for Local Water System loans. This was partially offset by contractor progress on Section 36/C/S9-A11 Valve and Carroll Water Treatment Plant Existing Facilities Modifications CP-7 contracts.

### CIP Expenditure Variance

*Total FY16 CIP Budget of \$140,498,000.*



### Construction Fund Management

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

Cash Balance 3/26/2016	\$77.9 million
Unused capacity under the debt cap:	\$1.043 billion
Estimated date for exhausting construction fund without new borrowing:	MAR-17
Estimated date for debt cap increase to support new borrowing:	Not anticipated at this time
Commercial paper/Revolving loan outstanding:	\$149 million
Commercial paper capacity:	\$350 million
Budgeted FY16 capital spending*:	\$116 million

\* Cash based spending is discounted for construction retainage.

# DRINKING WATER QUALITY AND SUPPLY

## Source Water – Microbial Results and UV Absorbance

3rd Quarter – FY16

### Source Water – Microbial Results

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

#### Sample Site: Quabbin Reservoir

Quabbin Reservoir water is sampled at the William A. Brusch Water Treatment Facility (formerly Ware Disinfection Facility) raw water tap before being treated and entering the CVA system.

On January 4, one of the samples exceeded a count of 20 cfu/100mL. The other samples collected during the 3rd Quarter were below 20 cfu/100ml. **For the current six-month period, 0.06% of the samples have exceeded a count of 20 cfu/100mL.**

#### Sample Site: Wachusett Reservoir

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

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

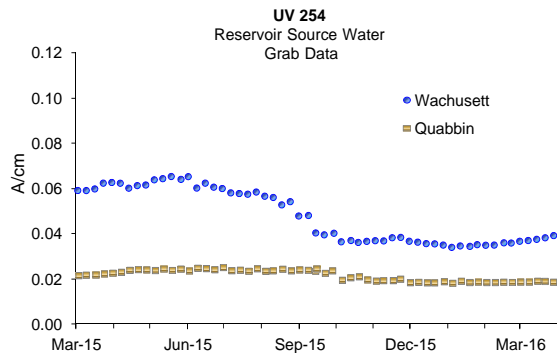
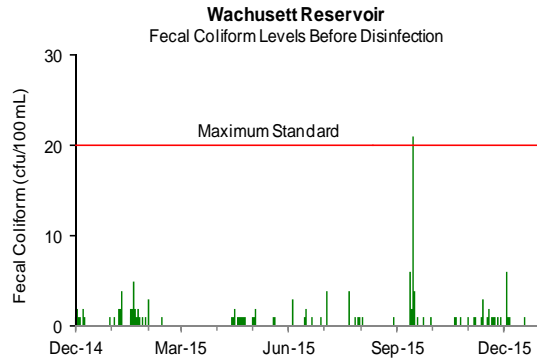
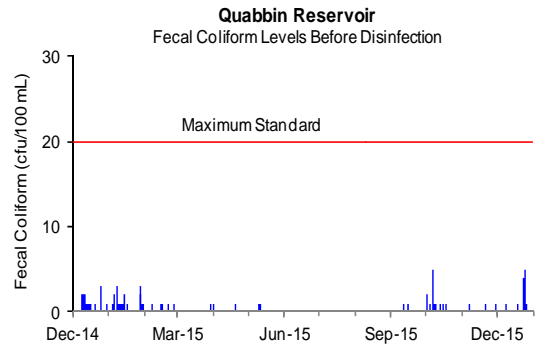
All samples collected during the 3rd Quarter were below 20 cfu/100ml. **For the current six-month period, 0.0% of the samples exceeded a count of 20 cfu/100mL, compared to allowable 10%.**

### Source Water – UV Absorbance

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

Quabbin Reservoir UV-254 levels are currently around 0.019 A/cm.

Wachusett Reservoir UV-254 levels are currently around 0.039 A/cm.



## Source Water – Turbidity

3rd Quarter – FY16

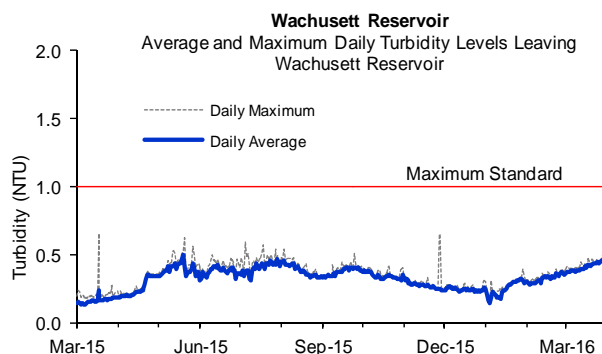
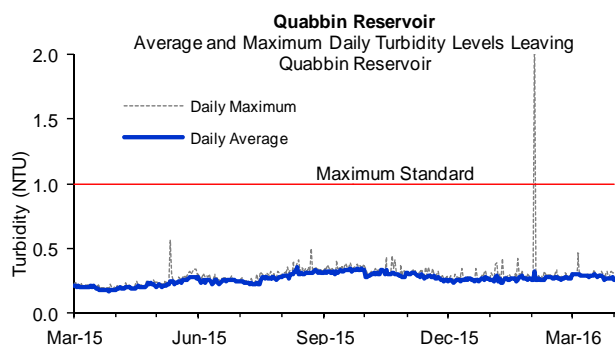
Turbidity is a measure of suspended and colloidal particles including clay, silt, organic and inorganic matter, algae and microorganisms. The effects of turbidity depend on the nature of the matter that causes the turbidity. High levels of particulate matter may have a higher disinfectant demand or may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

There are two standards for turbidity: all water must be below 5 NTU (Nephelometric Turbidity Units), and water only can be above 1 NTU if it does not interfere with effective disinfection.

Turbidity of Quabbin Reservoir water is monitored continuously at the William A. Brutsch Water Treatment Facility (WABWTF) before UV and chlorine disinfection. Turbidity of Wachusett Reservoir is monitored continuously at the Carroll Water Treatment Plant (CWTP) before ozonation and UV disinfection.

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

On February 2, a CVA Intake valve operation created a short term turbidity spike at WABWTF. The online turbidity exceeded 1 NTU for 30 minutes and grab samples confirmed elevated turbidity. Disinfection effectiveness was not affected; CT was maintained at all times, downstream disinfectant residuals were maintained, and no coliform were detected in downstream samples.

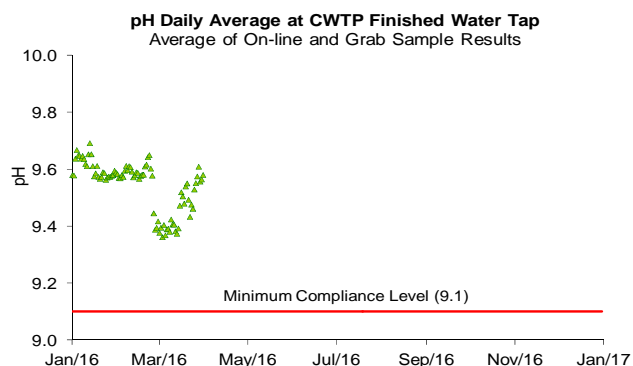
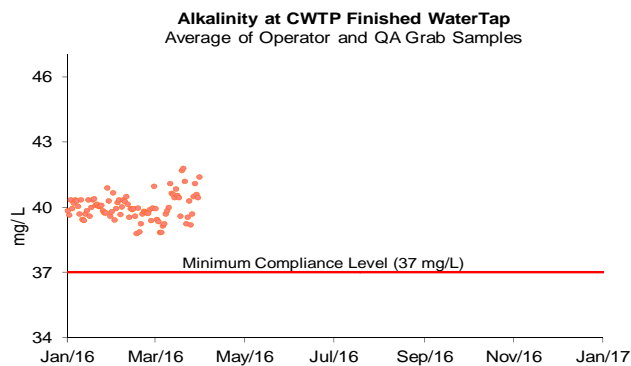


## Treated Water – pH and Alkalinity Compliance

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

Each CVA community provides its own corrosion control treatment. See the CVA report: [www.mwra.com/water/html/awqr.htm](http://www.mwra.com/water/html/awqr.htm).

Distribution system samples were collected on March 9 and 10, 2016. Distribution system sample pH ranged from 9.5 to 9.7 and alkalinity ranged from 39 to 41 mg/L. No sample results were below DEP limits for this quarter.



## Treated Water – Disinfection Effectiveness

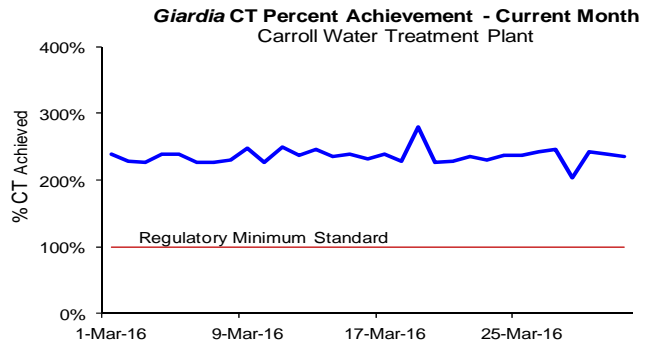
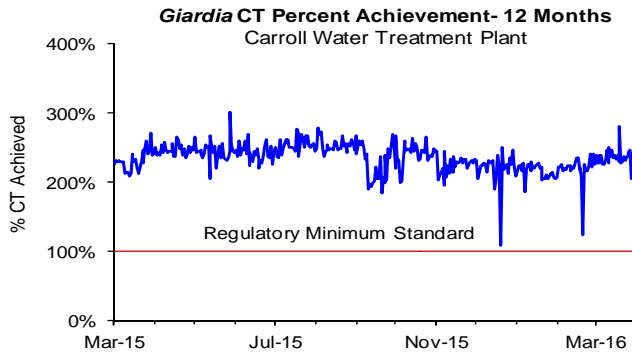
3rd Quarter – FY16

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

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

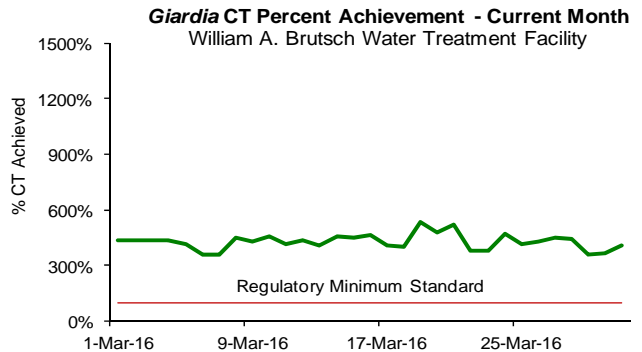
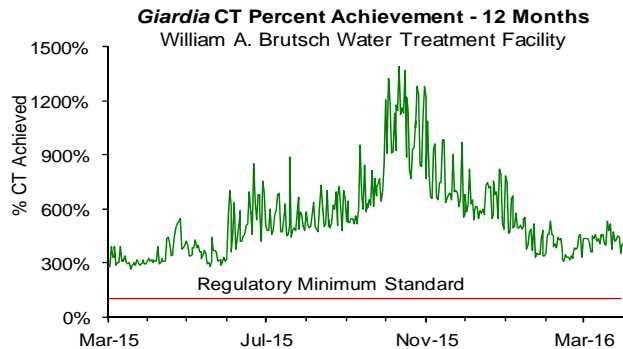
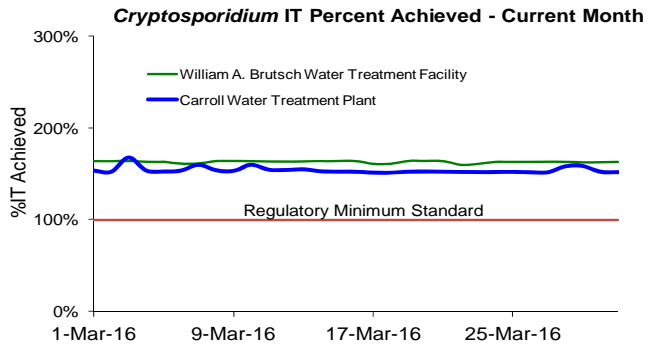
### Wachusett Reservoir – MetroWest/Metro Boston Supply:

- Ozone dose at the CWTP varied between 1.0 to 1.3 mg/L for the quarter.
- Giardia* CT was maintained above 100% at all times the plant was providing water into the distribution system this quarter, as well as every day for the last fiscal year.
- Cryptosporidium* IT was maintained above 100% during the month. Off-spec water was less than 5%.
- A dip to 122% CT Achieved occurred on February 20 at 12:15pm, when Train B was activated upon completion of its winter maintenance. There was no regulatory impact.



### Quabbin Reservoir (CVA Supply) at: William A. Brutsch Water Treatment Facility

- The chlorine dose at WABWTF is adjusted in order to achieve MWRA's seasonal (June 1 – October 31) target of  $\geq 1.0$  mg/L at Ludlow Monitoring Station.
- The chlorine dose at WABWTF ranged from 1.3 to 1.4 mg/L for the quarter.
- Giardia* CT was maintained above 100% at all times the plant was providing water into the distribution system for the quarter.
- Cryptosporidium* IT was maintained above 100% during the month. Off-spec water was less than 5%.





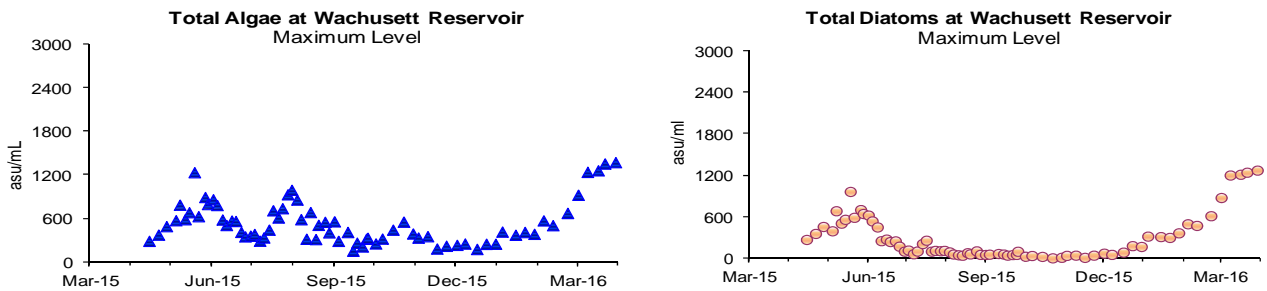
## Source Water - Algae

### 3rd Quarter – FY16

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

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

In the 3rd Quarter, six complaints which may be related to algae were reported from local water departments.



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

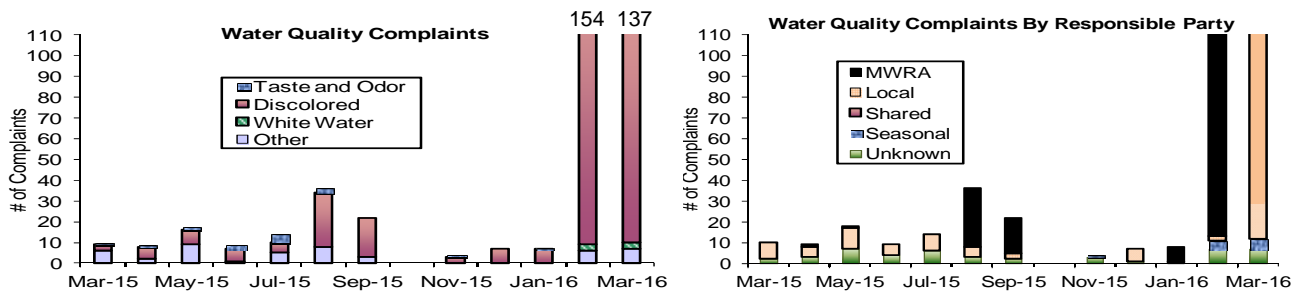
MWRA collects information on water quality complaints that typically fall into four categories: 1.) discoloration due to MWRA or local pipeline work; 2.) taste and odor due to algae blooms in reservoirs or chlorine in the water; 3.) white water caused by changes in pressure or temperature that traps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

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

Communities reported 299 complaints during the quarter compared to 124 complaints for 3rd Quarter of FY15. Of these complaints, 268 were for “discolored water” and 12 were for “taste and odor”, 6 were for “white water”, and 13 were for “other”. Of these complaints, 124 were local community issues, 152 were MWRA related, 9 were seasonal in nature, and 14 were unknown in origin.

- On February 29, one hundred and forty discolored water complaints were reported from Medford when MWRA staff isolated Shaft 9a for a leak repair.

- On March 25, Medford received one hundred discolored water complaints due to a water main break.



## Bacteria & Chlorine Residual Results for Communities in MWRA Testing Program

3<sup>rd</sup> Quarter – FY16

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

The MWRA TCR program has 142 sampling locations. These locations include sites along MWRA's transmission system, water storage tanks and pumping stations, as well as a subset of the community TCR locations.

The TCR requires that no more than 5% of all samples in a month may be total coliform positive (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 whose presence likely indicates potential contamination of fecal origin. If *E. coli* are detected in a drinking water sample, this is considered evidence of a potential public health concern. Public notification is required if 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 3<sup>rd</sup> Quarter, five of the 6,216 community samples (0.08% system-wide) submitted to MWRA labs for analysis tested positive for coliform (Brookline - March). One of the 1,943 MWRA samples (0.05%) tested positive for total coliform. No sample tested positive for *E. coli*. Only 1.1% of the samples had any chlorine residuals lower than 0.2 mg/L for the quarter.

		# Coliform Samples (a)	Total Coliform # (%) Positive	E.coli # Positive	Public Notification Required?	Minimum Chlorine Residual (mg/L)	Average Chlorine Residual (mg/L)	
MWRA	d	MWRA Locations	335	0 (0%)	0		2.02	2.37
		Shared Community/MWRA sites	1608	1 (0.06%)	0	No	0.09	2.13
		<b>Total: MWRA</b>	<b>1943</b>	<b>1 (0.05%)</b>	<b>0</b>	<b>No</b>	<b>0.09</b>	<b>2.18</b>
Fully Served		ARLINGTON	169	0 (0%)	0		0.08	1.92
		BELMONT	104	0 (0%)	0		0.59	2.19
		BOSTON	780	0 (0%)	0		1.50	2.40
		BROOKLINE	237	5 (2.11%)	0	No	0.80	2.07
		CHELSEA	169	0 (0%)	0		1.58	2.08
		DEER ISLAND	52	0 (0%)	0		1.90	2.19
		EVERETT	169	0 (0%)	0		0.17	1.28
		FRAMINGHAM	234	0 (0%)	0		0.60	2.22
		LEXINGTON	117	0 (0%)	0		0.67	2.50
		LYNNFIELD	18	0 (0%)	0		0.13	1.34
		MALDEN	234	0 (0%)	0		0.09	2.13
		MARBLEHEAD	72	0 (0%)	0		0.44	2.07
		MEDFORD	221	0 (0%)	0		1.22	1.94
		MELROSE	117	0 (0%)	0		0.62	1.87
		MILTON	99	0 (0%)	0		0.50	1.93
		NAHANT	30	0 (0%)	0		1.38	2.01
		NEWTON	276	0 (0%)	0		0.38	2.08
		NORTHBOROUGH	48	0 (0%)	0		0.34	2.02
		NORWOOD	99	0 (0%)	0		0.06	1.99
		QUINCY	299	0 (0%)	0		0.14	2.19
		READING	130	0 (0%)	0		0.29	1.87
		REVERE	180	0 (0%)	0		1.41	2.13
		SAUGUS	104	0 (0%)	0		1.32	1.86
		SOMERVILLE	273	0 (0%)	0		1.28	2.32
		SOUTHBOROUGH	30	0 (0%)	0		0.05	1.95
		STONEHAM	91	0 (0%)	0		1.63	2.11
		SWAMPSCOTT	53	0 (0%)	0		0.54	1.83
		WALTHAM	216	0 (0%)	0		0.67	2.09
		WATERTOWN	130	0 (0%)	0		1.55	2.16
		WESTBORO HOSPITAL	15	0 (0%)	0		0.05	0.51
		WESTON	48	0 (0%)	0		1.93	2.32
		WINTHROP	72	0 (0%)	0		1.15	2.37
	<b>Total: Fully Served</b>	<b>4886</b>	<b>5 (0.10%)</b>					
CVA & Partially Served		BEDFORD	54	0 (0%)	0		0.34	1.79
		CANTON	87	0 (0%)	0		0.01	1.15
		HANSCOM AFB	27	0 (0%)	0		0.36	1.65
		MARLBOROUGH	126	0 (0%)	0		0.26	2.14
		NEEDHAM	123	0 (0%)	0		0.13	0.81
		PEABODY	234	0 (0%)	0		1.23	2.07
		WAKEFIELD	143	0 (0%)	0		0.49	1.49
		WELLESLEY	114	0 (0%)	0		0.04	0.80
		WILMINGTON	85	0 (0%)	0		0.92	1.92
		WINCHESTER	91	0 (0%)	0		0.16	1.48
		WOBURN	198	0 (0%)	0		0.15	0.92
		SOUTH HADLEY FD1	48	0 (0%)	0		0.14	0.52
		<b>Total: CVA &amp; Partially Served</b>	<b>1330</b>	<b>0 (0%)</b>				
	<b>Total: Community Samples</b>	<b>6216</b>	<b>5 (0.08%)</b>					

(a) The number of samples collected depends on the population served and the number of repeat samples required.

(b) These communities are partially supplied, and may mix their chlorinated supply with MWRA chloraminated supply.

(c) Part of the Chicopee Valley Aqueduct System. Free chlorine system.

(d) MWRA total coliform and chlorine residual results include data from 125 community pipe locations as described above. In most cases these community results are accurately indicative of MWRA water as it enters the community system; however, some are clearly strongly influenced by local pipe conditions. Residuals in the MWRA system are typically between 1.0 and 2.8 mg/L.

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

### 3rd Quarter – FY16

Total Trihalomethanes (TTHMs) and Haloacetic Acids (HAA5s) are by-products of disinfection treatment with chlorine. TTHMs and HAA5s are of concern due to their potential adverse health effects at high levels. EPA's running annual average (RAA) standard is 80 µg/L for TTHMs and 60 µg/L for HAA5s. For the MetroBoston system, effective Q2 2013, under the Stage 2 DBP Rule, compliance is based on locational running annual averages (LRAA). Sampling locations have increased from 16 to 32 each quarter.

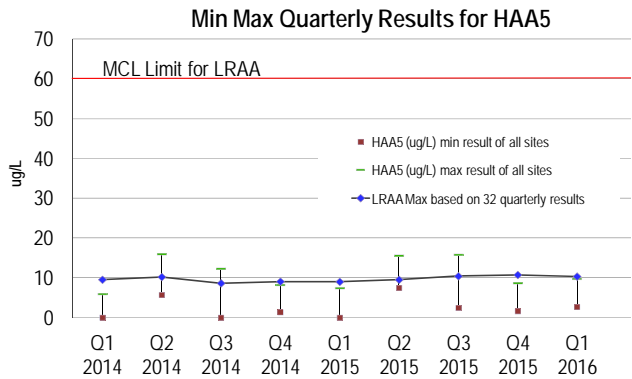
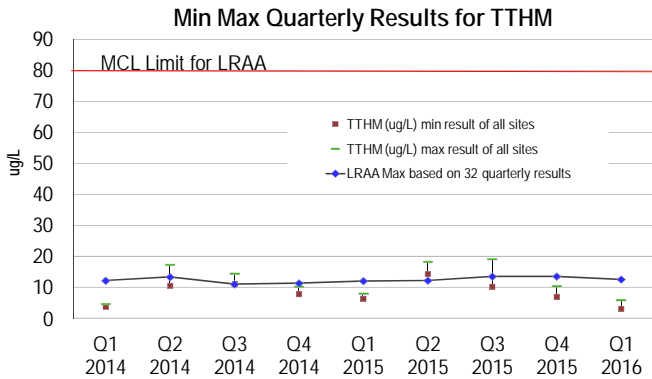
For the CVA communities, effective Q3 2013, under the Stage 2 DBP Rule, compliance is based on a LRAA for each community. Sampling locations have increased from 12 to 14 each quarter. The chart below combines all three CVA communities data.

Partially served and CVA communities are responsible for their own compliance monitoring and reporting, and must be contacted directly for their individual results.

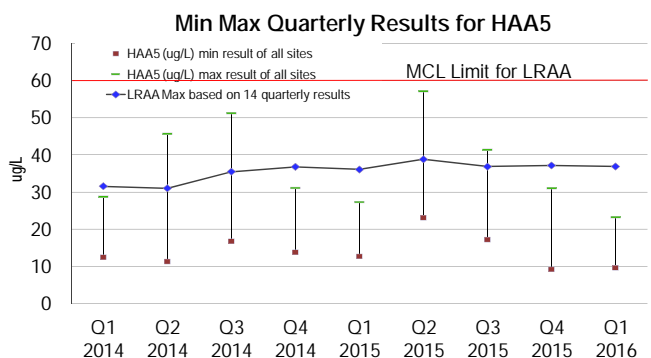
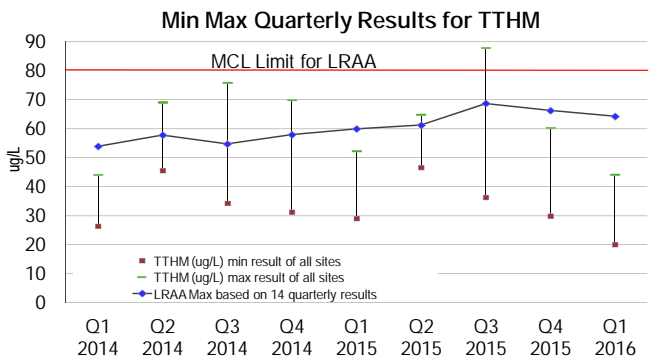
Bromate is tested monthly per DEP requirements for water systems that treat with ozone. Bromide in the raw water may be converted into bromate following ozonation. EPA's RAA MCL standard for bromate is 10 µg/L.

The LRAA for TTHMs and HAA5s for MWRA's Compliance Program (represented as the line in the top two graphs below) remain below current standards. The LRAA for TTHMs = 12.6 µg/L; HAA5s = 10.3 µg/L. The current RAA for Bromate = 0.0 µg/L. CVA's DBP levels continue to be below current standards.

### MetroBoston Disinfection By-Products



### CVA Disinfection By-Products (Combined Results)



# Water Supply and Source Water Management

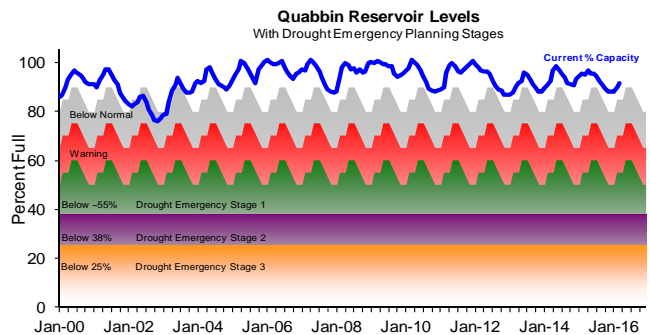
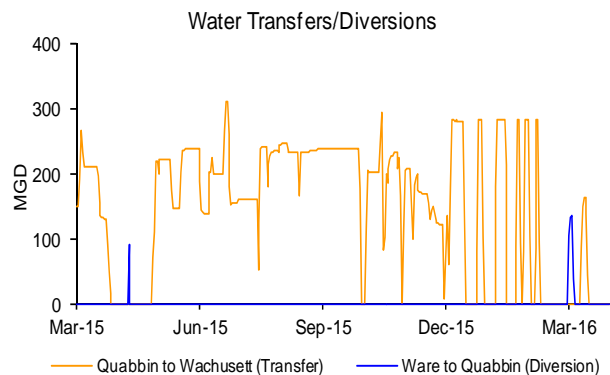
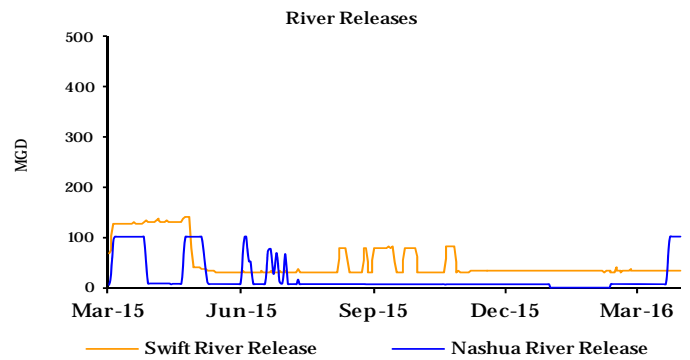
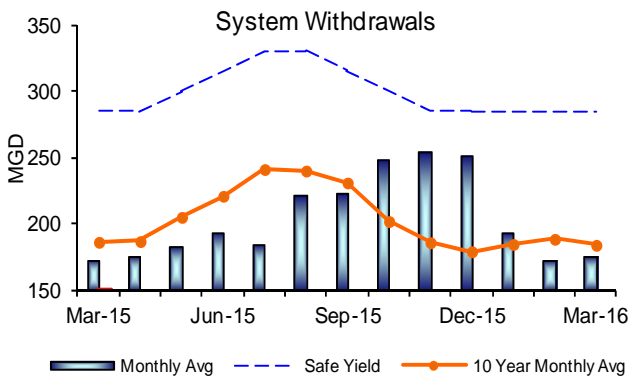
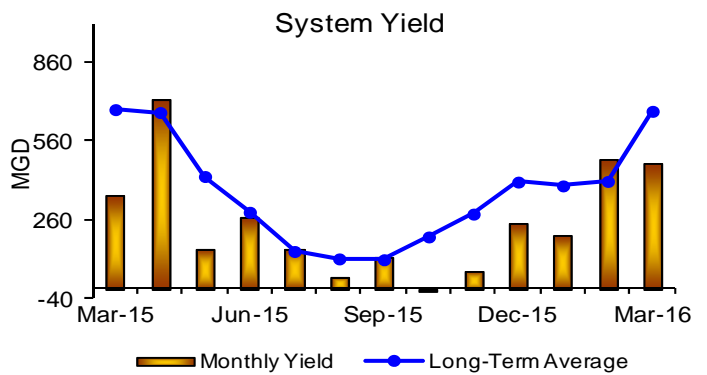
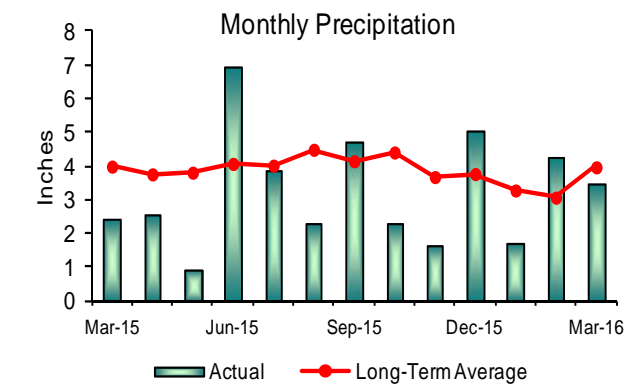
3rd Quarter – FY16

## Background

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

## Outcome

Quabbin Reservoir level remains within the normal operating range for this period of the year. The volume of the Quabbin Reservoir was at 91.6% as of March 31, 2016; a 3.3% increase for the quarter, which represents an increase of more than 13.7 billion gallons of storage. Yield and precipitation for the quarter were below their respective quarterly long term averages. System withdrawal continues to be below its long-term average.



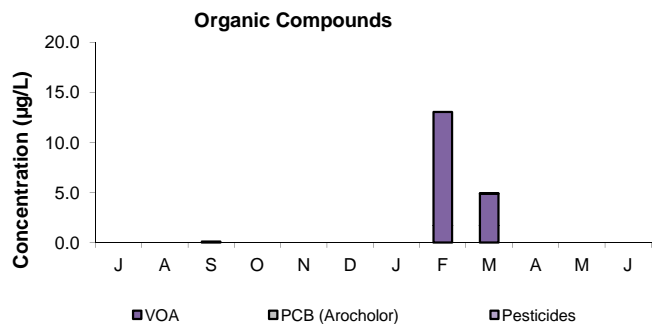
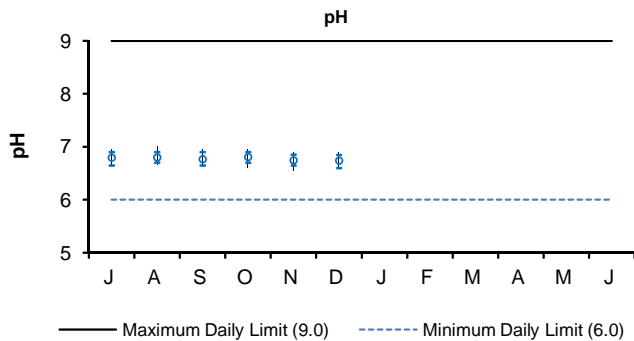
# WASTEWATER QUALITY

## NPDES Permit Compliance: Deer Island Treatment Plant 3rd Quarter - FY16

### NPDES Permit Limits

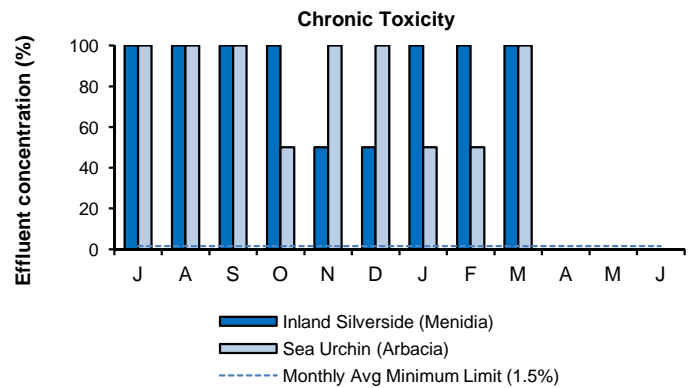
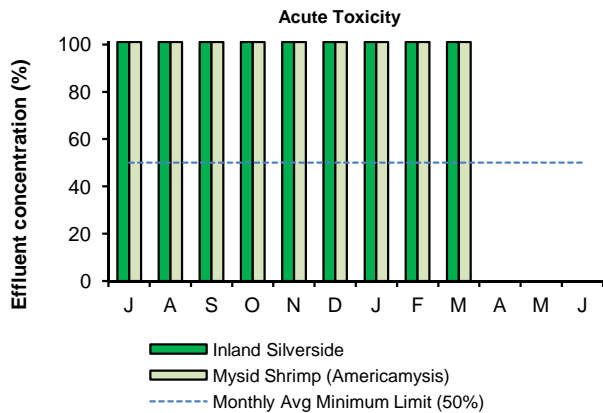
Effluent Characteristics		Units	Limits	January	February	March	3rd Quarter Violations	FY16 YTD Violations
Dry Day Flow:		mgd	436	255.1	258.2	262.2	0	0
cBOD:	Monthly Average	mg/L	25	6.1	6.9	6.9	0	0
	Weekly Average	mg/L	40	7.7	8.1	8.0	0	0
TSS:	Monthly Average	mg/L	30	7.8	11.6	11.5	0	0
	Weekly Average	mg/L	45	11.1	14.5	12.5	0	0
TCR:	Monthly Average	ug/L	456	<40	<40	2	0	0
	Daily Maximum	ug/L	631	<40	<40	67	0	0
Fecal Coliform:	Daily Geometric Mean	col/100mL	14000	7	7	7	0	0
	Weekly Geometric Mean	col/100mL	14000	12	13	16	0	0
	% of Samples >14000	%	10	0	0	0	0	0
	Consecutive Samples >14000	#	3	0	0	0	0	0
pH:		SU	6.0-9.0	6.5-7.1	6.6-7.0	6.6-7.0	0	0
PCB, Aroclors: Monthly Average		ug/L	0.000045	UNDETECTED			0	0
Acute Toxicity:	Mysid Shrimp	%	≥50	>100	>100	>100	0	0
	Inland Silverside	%	≥50	>100	>100	>100	0	0
Chronic Toxicity:	Sea Urchin	%	≥1.5	50	50	100	0	0
	Inland Silverside	%	≥1.5	100	100	100	0	0

There have been no permit violations in FY16 to date at the Deer Island Treatment Plant.



pH is a measure of alkalinity or acidity. Fluctuations in effluent pH are unlikely to impact on marine environments, which have significant buffering capacity. Because of the pure oxygen used in the activated sludge process, effluent pH tends to be at the lower end of the permit-required range. All pH measurements for the 3rd Quarter were within the daily permit limits.

An important wastewater component monitored in the effluent is organic compounds, such as volatile organic acids, pesticides, and polychlorinated biphenyls, which are all sampled monthly. The secondary treatment process significantly reduces organic compounds in the effluent stream. In the 3rd Quarter, some volatile organic compounds were detected in the effluent in February and March. All other organic compounds were below the detection limit for the quarter.



The acute toxicity test simulates the short-term toxic effects of chemicals in wastewater effluent on marine animals. The test measures the concentration (percent) of effluent that kills half the test organisms within four days. The higher the concentration of effluent required, the less toxic the effluent. For permit compliance, the effluent concentration that causes mortality to mysid shrimp and inland silverside must be at least 50%. Acute toxicity permit limits were met for the 3rd Quarter for both the inland silverside and mysid shrimp.

Typically, effects of chronic exposures differ from those of acute exposures. Because of this, chronic toxicity responses are not necessarily related to acute toxicity. The chronic toxicity test simulates the long-term toxic effects of chemicals in wastewater effluent on marine animals. To meet permit limits, a solution of 1.5% effluent and 98.5% dilution water must show no observed effect on the growth and reproduction of the test species. Chronic toxicity permit limits were met for the 3rd Quarter for both the inland silverside and sea urchin.

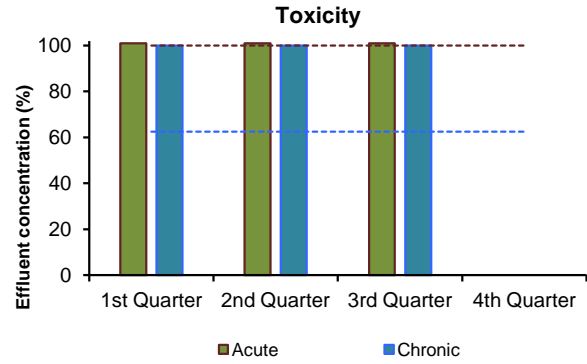
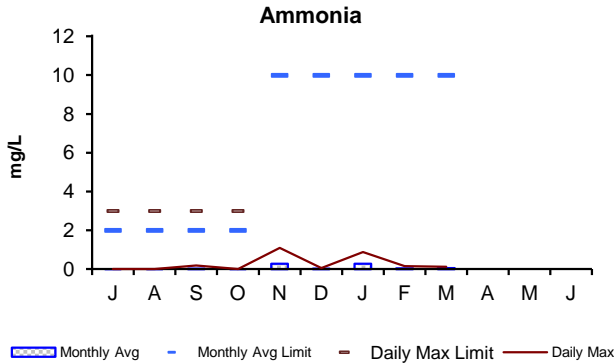
# NPDES Permit Compliance: Clinton Wastewater Treatment Plant

## 3rd Quarter - FY16

### NPDES Permit Limits

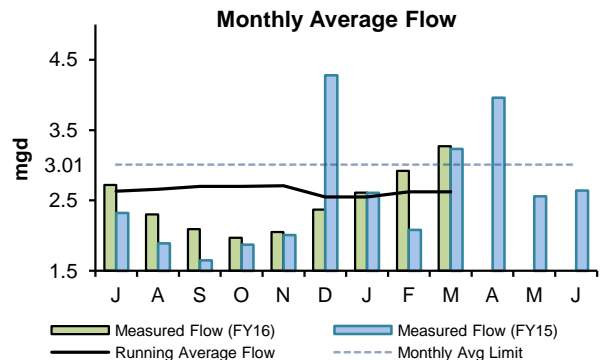
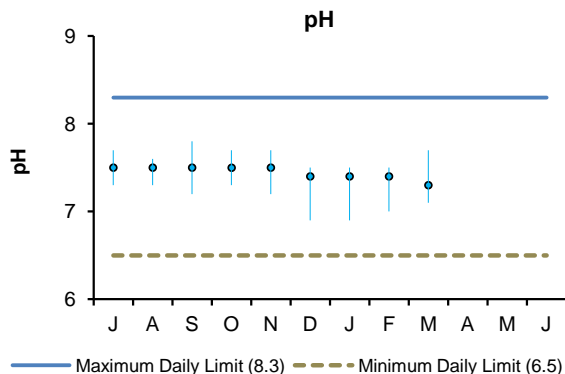
Effluent Characteristics	Units	Limits	January	February	March	3rd Quarter	FY16 YTD
			Violations	Violations	Violations	Violations	Violations
Flow:	mgd	3.01	2.55	2.62	2.62	0	0
BOD:	Monthly Average:	mg/L	4.1	3.0	3.1	0	0
	Weekly Average:	mg/L	5.3	3.3	3.7	0	0
TSS:	Monthly Average:	mg/L	5.0	4.0	5.3	0	0
	Weekly Average:	mg/L	6.3	4.3	7.9	0	0
pH:	SU	6.5-8.3	6.9-7.5	7.0-7.5	7.1-7.7	0	0
Dissolved Oxygen: Daily Minimum:	mg/L	6	8.0	9.8	9.6	0	0
Fecal Coliform: Daily Geometric Mean:	col/100mL	400	4	5	4	0	0
	Monthly Geometric Mean:	col/100mL	200	7	3	3	0
TCR: Monthly Average:	ug/L	50	0	0.0	0.1	0	0
	Daily Maximum:	ug/L	50	0.0	0.0	2.5	0
Total Ammonia Nitrogen: November 1 - March 31							
Monthly Average:	mg/L	10.0	0.28	0.04	0.05	0	0
Daily Maximum:	mg/L	35.2	0.89	0.16	0.13	0	0
Copper: Monthly Average:	ug/L	20	5.4	7.4	6.0	0	0
Phosphorus: May 1 - Oct 31							
Monthly Average:	mg/L	1.0	--	--	--	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	0

There have been no permit violations in FY16 at the Clinton Treatment Plant.  
**3rd Quarter:** There have been no permit violations in the second quarter.  
 \*Toxicity testing at the Clinton Treatment Plant is conducted on a quarterly basis.



The 3rd Quarter's monthly average and daily maximum concentrations were below the permit limits. The monthly average and daily maximum limits for the 3rd Quarter 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 toxicity testing simulates the short- and long-term toxic effects of chemicals in wastewater effluent on aquatic animals. For permit compliance, the effluent concentration that causes mortality to the daphnid in acute and chronic testing must be at least >100% and 62.5%, respectively. Toxicity limits were met during the 3rd Quarter.



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

The graph depicts the running annual average monthly flow, measured in million gallons per day, exiting the plant. February and March high flows did not cause the running annual average to exceed permit limits.

# COMMUNITY FLOWS AND PROGRAMS



# Total Water Use

## 3rd Quarter - FY16

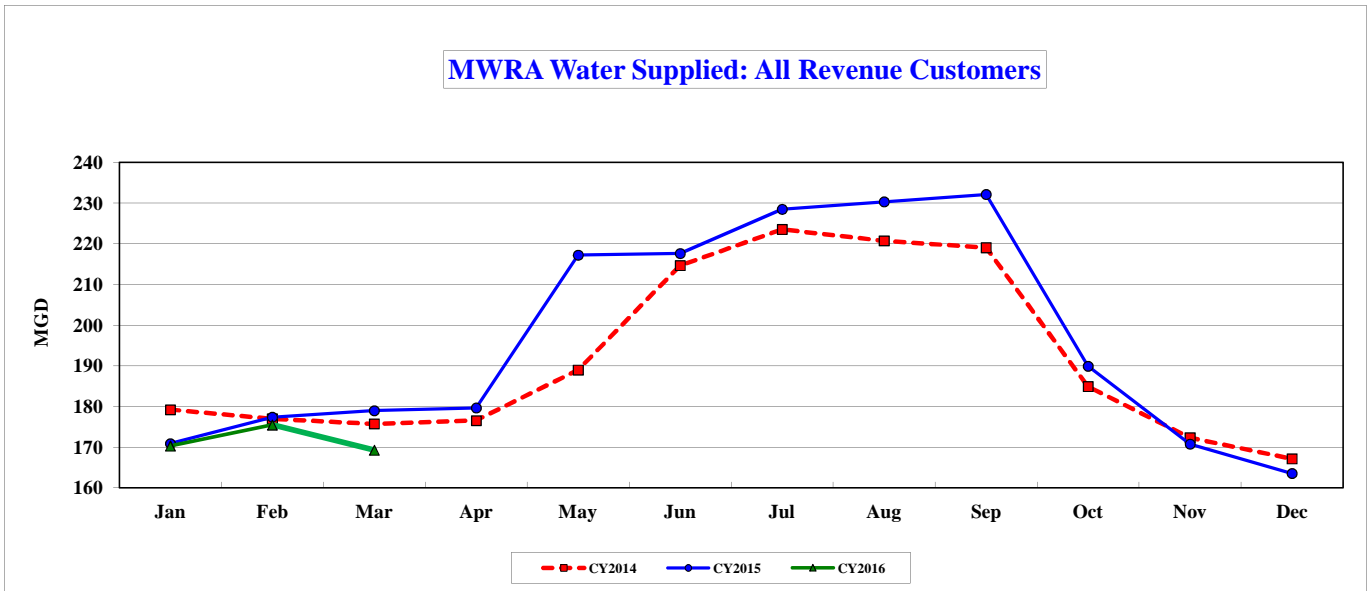
### MWRA

Water Supplied: All Revenue Customers

YTD CHANGES (CY16 vs. CY15)
Water Supplied
-1.2%

MGD	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD Average	Annual Average
CY2014	179.212	176.987	175.736	176.536	188.974	214.660	223.544	220.734	219.049	184.918	172.333	167.145	177.322	191.729
CY2015	170.874	177.386	178.975	179.653	217.221	217.619	228.484	230.316	232.125	189.905	170.763	163.550	175.690	196.522
CY2016	170.294	175.470	169.273	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	171.596	171.596

MG	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD Total	Annual Total
CY2014	5,555.575	4,955.629	5,447.807	5,296.068	5,858.182	6,439.790	6,929.849	6,842.752	6,571.479	5,732.472	5,169.979	5,181.506	15,959.011	69,981.088
CY2015	5,297.089	4,966.801	5,548.216	5,389.596	6,733.842	6,528.559	7,082.997	7,139.787	6,963.760	5,887.062	5,122.884	5,070.040	15,812.106	71,730.633
CY2016	5,279.121	5,088.631	5,247.463	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15,615.215	15,615.215



The March 2016 Community Water Use Report recently distributed to communities served by the MWRA waterworks systems. Each community's annual water use relative to the system as a whole is the primary factor in allocating the annual water rate revenue requirement to MWRA water communities. Calendar year 2016 water use will be used to allocate the FY18 water utility rate revenue requirement.

March 2016 water supplied of 169.3 mgd (for revenue generating users) is down 9.7 mgd or 5.4% compared to March 2015. System-wide year to date consumption for CY16 is also lower than CY15 with 171.6 mgd being supplied to MWRA customers **through March**.

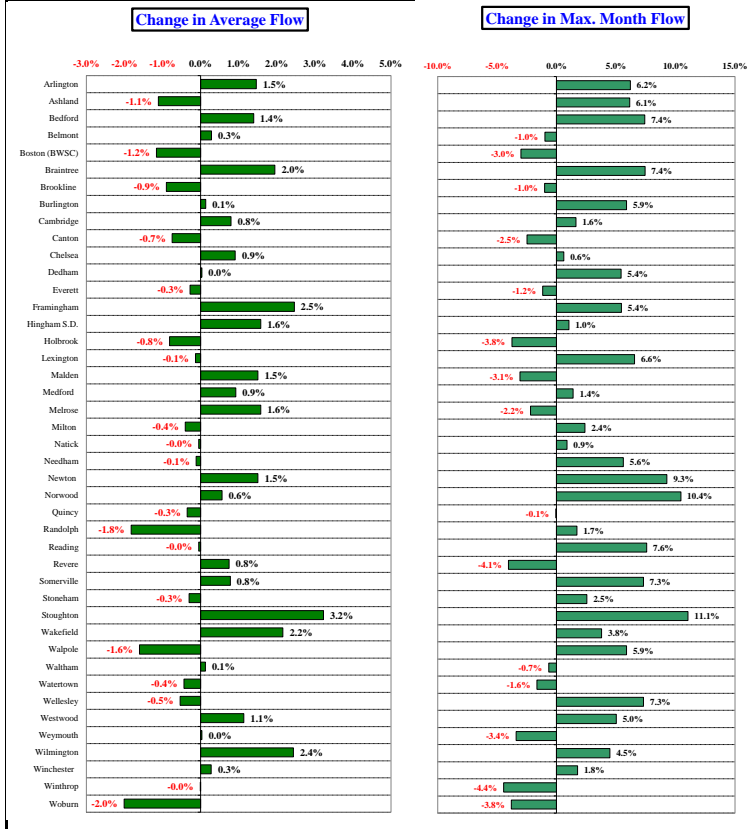
This is 4.1 mgd lower than CY15, and is a decrease of 2.3%.

# Community Wastewater Flows

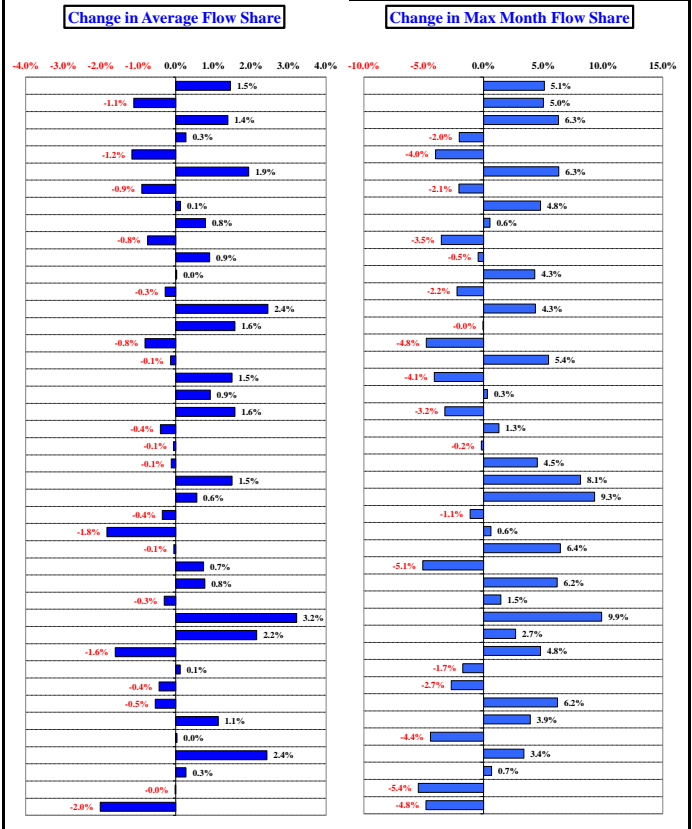
## 3rd Quarter - FY16

### How Projected CY2016 Community Wastewater Flows Could Effect FY2018 Sewer Assessments <sup>1,2,3</sup>

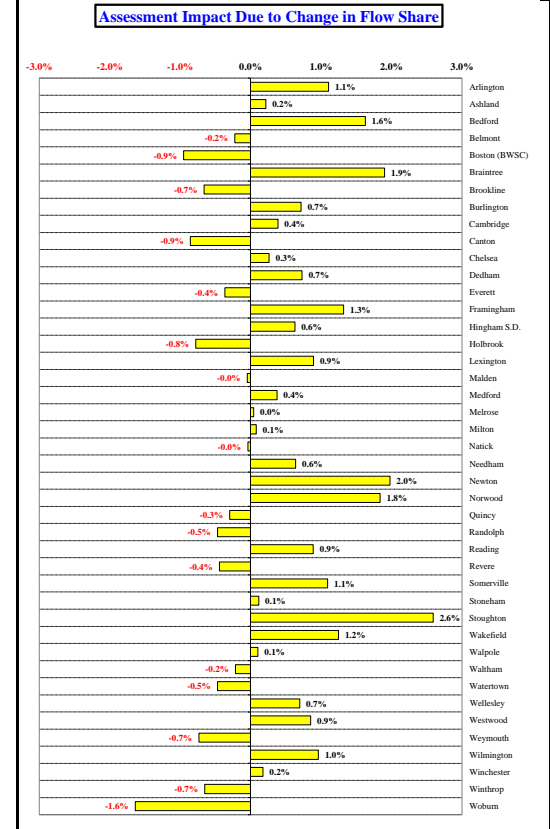
The flow components of FY2018 sewer assessments will be calculated using a 3-year average of CY2014 to CY2016 wastewater flows compared to FY2017 assessments that will use a 3-year average of CY2013 to CY2015 wastewater flows.



But as MWRA's sewer assessments are a ZERO-SUM calculation, a community's assessment is strongly influenced by the **RELATIVE** change in CY2014 to CY2016 flow share compared to CY2013 to CY2015 flow share, compared to all other communities in the system.



The chart below illustrates the change in the **TOTAL BASE** assessment due to **FLOW SHARE CHANGES**. <sup>4</sup>



Notes:  
<sup>1</sup> MWRA uses a 3-year flow average to calculate sewer assessments. Three-year averaging smoothes the impact of year-to-year changes in community flow share, but does not eliminate the long-term impact of changes in each community's relative contribution to the total flow.  
<sup>2</sup> Based on CY2013 to CY2016 average wastewater flows as of 03/18/16. Flow data is preliminary and subject to change pending additional MWRA and community review.  
<sup>3</sup> CY2013 to February CY2016 wastewater flows based on actual meter data. March to December 2016 flows based on the average of the prior three years.  
<sup>4</sup> Represents **ONLY** the impact on the total BASE assessment resulting from the changes in average and maximum wastewater **FLOW SHARES**.

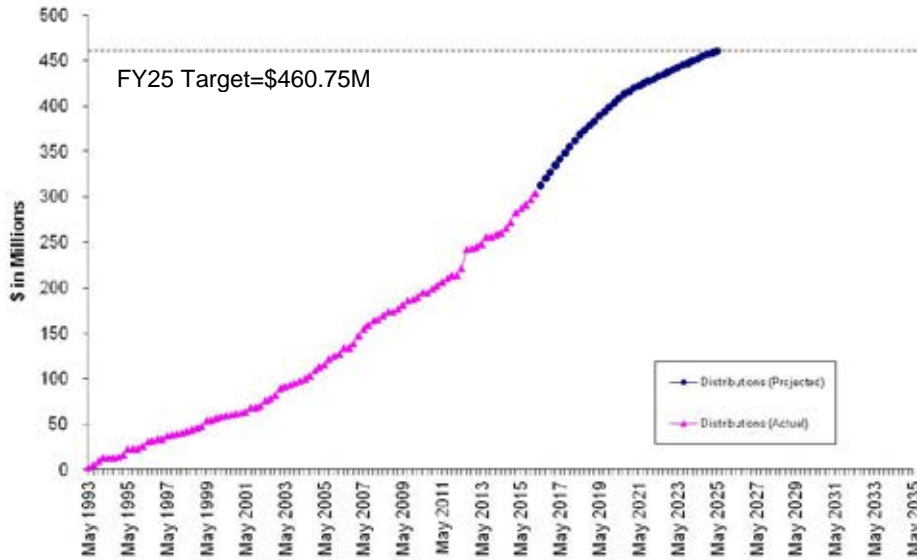
# Community Support Programs

3<sup>rd</sup> Quarter – FY16

## Infiltration/Inflow Local Financial Assistance Program

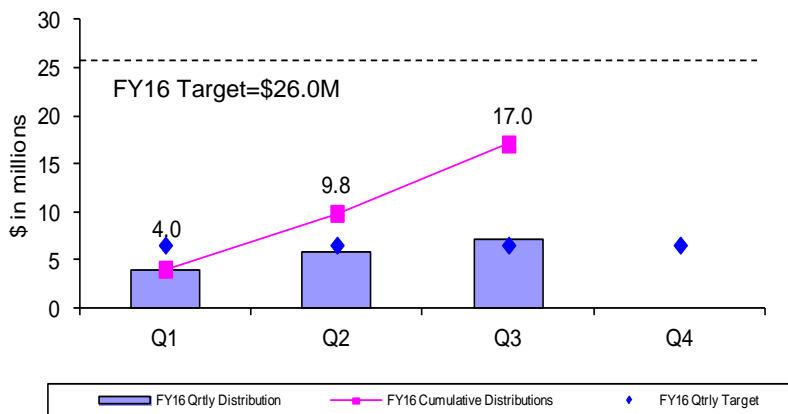
MWRA's Infiltration/Inflow (I/I) Local Financial Assistance Program provides \$460.75 million in grants and interest-free loans (average of about \$14 million per year from FY93 through FY25) to member sewer communities to perform I/I reduction and sewer system rehabilitation projects within their locally-owned collection systems. Eligible project costs include: sewer rehabilitation construction, pipeline replacement, removal of public and private inflow sources, I/I reduction planning, engineering design, engineering services during construction, etc. I/I Local Financial Assistance Program funds are allocated to member sewer communities based on their percent share of MWRA's wholesale sewer charge. Phase 1-8 funds (total \$300.75 million) were distributed as 45% grants/55% loans with interest-free loans repaid to MWRA over a five-year period. Phase 9 and 10 funds (total \$160 million) are distributed as 75% grants and 25% loans with interest-free loans repaid to MWRA over a ten-year period.

### I/I Local Financial Assistance Program Distribution FY93-FY25



During the 3rd Quarter of FY16, \$7.2 million in financial assistance (grants and interest-free loans) was distributed to fund local sewer rehabilitation projects in Arlington, Braintree, Everett, Hingham, Lexington, Stoughton, Wellesley, Weymouth, Wakefield and Woburn. Total grant/loan distribution for FY16 is \$17.0 million. From FY93 through the 3<sup>rd</sup> Quarter of FY16, all 43 member sewer communities have participated in the program and more than \$304 million has been distributed to fund 501 local I/I reduction and sewer system rehabilitation projects. Distribution of the remaining funds has been approved through FY25 and community loan repayments will be made through FY36. All scheduled community loan repayments have been made.

### FY16 Quarterly Distributions of Sewer Grant/Loans

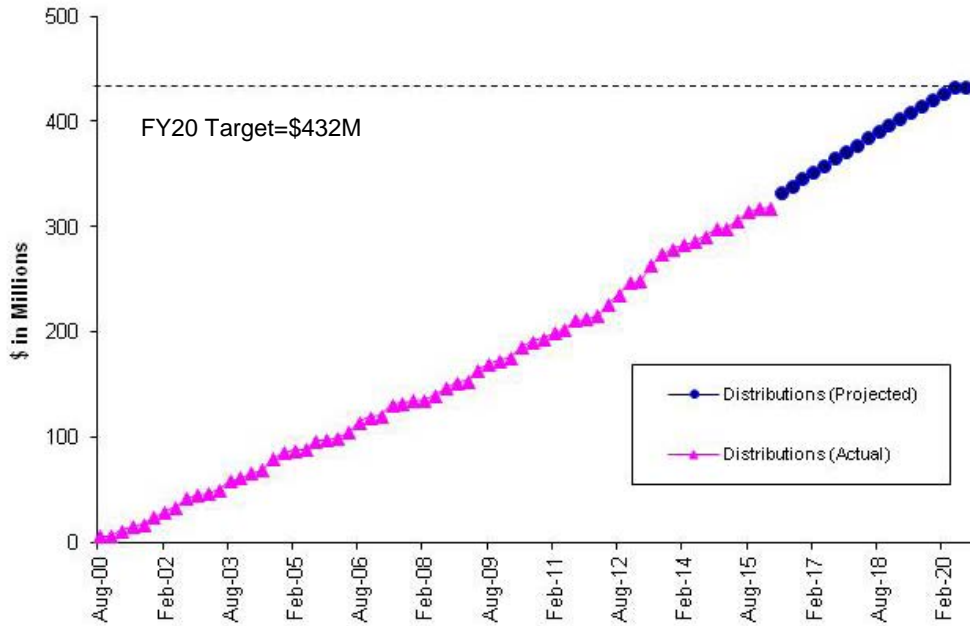


# Community Support Programs 3<sup>rd</sup> Quarter – FY16

## Water Local Pipeline and Water System Assistance Programs

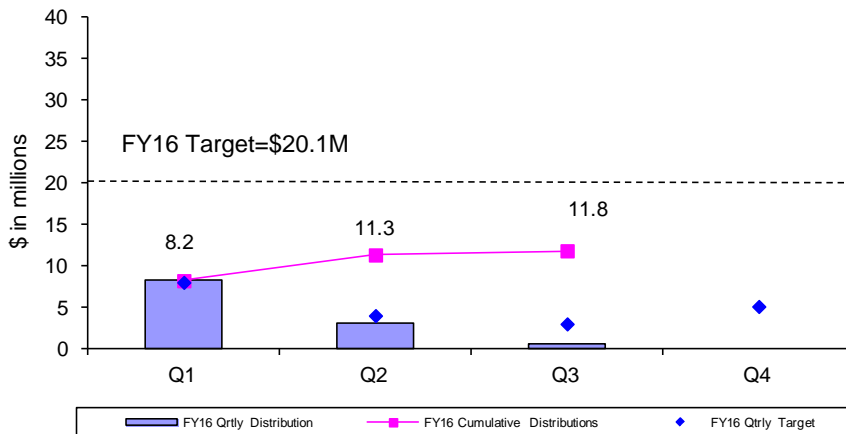
MWRA's Local Pipeline and Water System Assistance Programs (LPAP and LWSAP) provide \$432 million in interest-free loans (an average of about \$22 million per year from FY01 through FY20) to member water communities to perform water main rehabilitation projects within their locally-owned water distribution systems. Eligible project costs include: water main cleaning/lining, replacement of unlined water mains, lead service replacements, valve, hydrant, water meter, tank work, engineering design, engineering services during construction, etc. MWRA partially-supplied communities receive pro-rated funding allocations based on their percentage use of MWRA water. Interest-free loans are repaid to MWRA over a ten-year period beginning one year after distribution of the funds. The Phase 1 - LPAP concluded in FY13 with \$222 million in loan distributions. The Phase 2 - LWSAP continues through FY20.

### Local Pipeline and Water System Assistance Programs Distribution FY01-FY20



During the 3<sup>rd</sup> Quarter of FY16, \$0.5 million in interest-free loans was distributed to fund a local water project in Belmont. Total loan distribution for FY16 is \$11.8 million. From FY01 through the 3<sup>rd</sup> Quarter of FY16, more than \$317 million has been distributed to fund 360 local water system rehabilitation projects in 38 MWRA member water communities. Distribution of the remaining funds has been approved through FY20 and community loan repayments will be made through FY30. All scheduled community loan repayments have been made.

### FY16 Quarterly Distributions of Water Loans

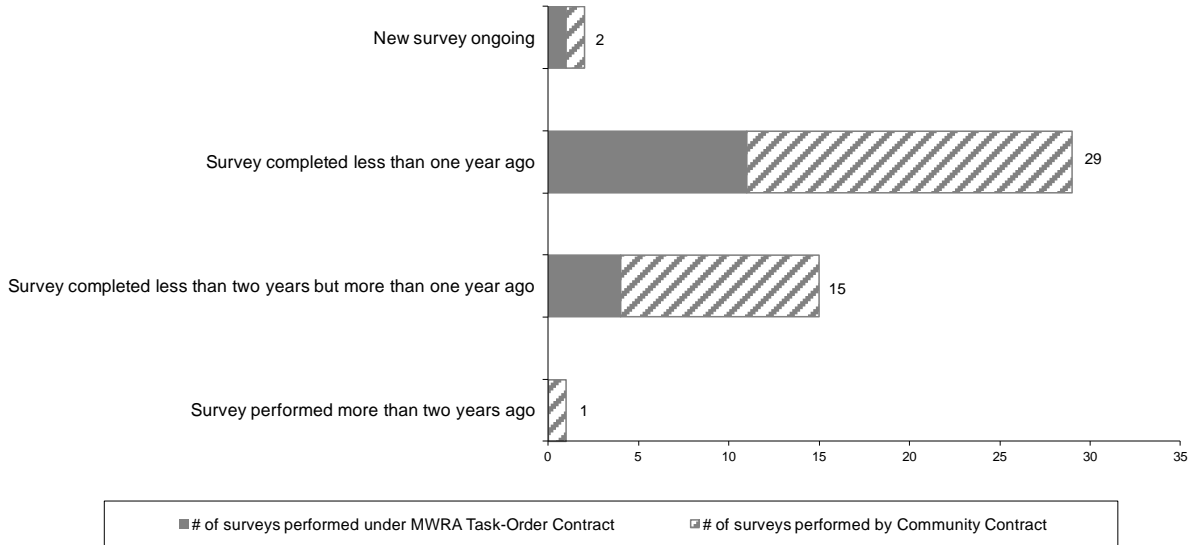


## Community Support Programs

3<sup>rd</sup> Quarter – FY16

### Community Water System Leak Detection

To ensure member water communities identify and repair leaks in locally-owned distribution systems, MWRA developed leak detection regulations that went into effect in July 1991. Communities purchasing water from MWRA are required to complete a leak detection survey of their entire distribution system at least once every two years. Communities can accomplish the survey using their own contractors or municipal crews; or alternatively, using MWRA’s task order leak detection contract. MWRA’s task order contract provides leak detection services at a reasonable cost that has been competitively procured (3-year, low-bid contract) taking advantage of the large volume of work anticipated throughout the regional system. Leak detection services performed under the task order contract are paid for by MWRA and the costs are billed to the community the following year. During the 3<sup>rd</sup> Quarter of FY16, only one member water community, Milton, was not in compliance with MWRA’s Leak Detection Regulation.



### Community Water Conservation Outreach

MWRA’s Community Water Conservation Program helps to maintain average water demand below the regional water system’s safe yield of 300 mgd. Current 5-year average water demand is less than 210 mgd. The local Water Conservation Program includes distribution of water conservation education brochures (indoor and outdoor bill-stuffers) and low-flow water fixtures and related materials (shower heads, faucet aerators, toilet leak detection dye tabs, and instructions), all at no cost to member communities or individual customers. The Program’s annual budget is \$25,000 for printing and purchase of materials. Annual distribution targets and totals are provided in the table below. Distributions of water conservation materials are made based on requests from member communities and individual customers.

	Annual Target	Q1	Q2	Q3	Q4	Annual Total
Educational Brochures	100,000	1,066	19,283	104,102		124,451
Low-Flow Fixtures (showerheads and faucet aerators)	10,000	2,924	2,210	3,158		8,292
Toilet Leak Detection Dye Tablets	-----	1,688	2,446	1,553		5,687

## BUSINESS SERVICES

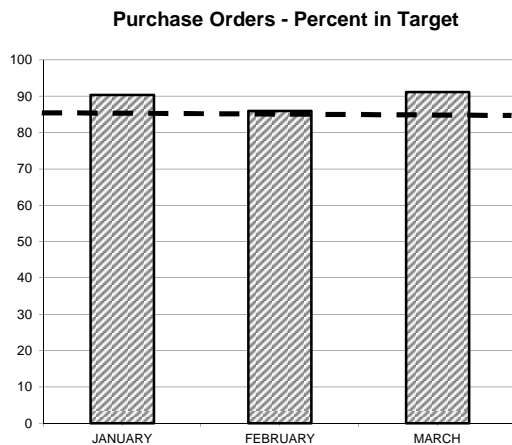
# Procurement: Purchasing and Contracts

## 3rd Quarter FY16

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

**Outcome:** Processed 89.0% of purchase orders within target; Average Processing Time was 5.02 days vs. 6.00 days in Qtr 3 of FY15. Processed 83% (25 of 30) of contracts within target timeframes; Average Processing Time was 110 days vs. 154 days in Qtr 3 of FY15.

### Purchasing



	No.	TARGET	PERCENT IN TARGET
\$0 - \$500	1011	3 DAYS	87.9%
\$500 - \$2K	841	7 DAYS	96.6%
\$2K - \$5K	368	10 DAYS	92.7%
\$5K - \$10K	70	25 DAYS	90.9%
\$10K - \$25K	78	30 DAYS	75.8%
\$25K - \$50K	14	60 DAYS	66.6%
Over \$50K	37	90 DAYS	87.5%

The Purchasing Unit processed 2419 purchase orders, 14 more than the 2405 processed in Qtr 3 FY16 for a total value of \$13,156,591 versus a dollar value of \$8,150,857 in Qtr 3 FY15.

The purchase order processing target was not met for the \$10K - \$25K due to decision to delay outside work until more favorable weather conditions existed and another due to decisions regarding the type of contract for the procurement; the \$25k - \$50K was due to staff summary requirements.

### Contracts, Change Orders and Amendments

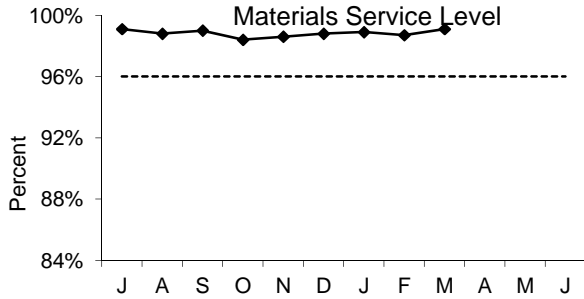
Five contracts were not processed within the target timeframes. One was due to a significant amount of contractor questions, resulting in additional addenda and extensions of the bid opening. Further, the notice to proceed was delayed due to the contractor's delay in responding to the award letter. The second contract was delayed due to changes in contract language necessitated by the Dodd-Frank Wall Street Reform and Consumer Protection Act. For the third contract, certain terms were renegotiated. For the fourth contract, further hazmat testing was required prior to the award of the contract. The final contract was delayed because of a determination of responsibility for the installation of a gasline to the project site.

Procurement processed thirty contracts with a value of \$5,727,352 and seven amendments with a value of \$145,750. Twenty five change orders were executed during the period. The dollar value of all non-credit change orders during Q3 FY16 was \$532,266 and the value of credit change orders was (\$642,332).

Staff reviewed 40 proposed change orders and 27 draft change orders.

# Materials Management

3rd Quarter, FY16



The service level is the percentage of stock requests filled. The goal is to maintain a service level of 96%. Staff issued 8,376 (98.9%) of the 8,471 items requested in Q3 from the inventory locations for a total dollar value of \$1,187,878.

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 FY16 goal is to reduce consumable inventory from the July '15 base level (\$7.6 million) by 2.0% (approximately \$154,371), to \$7.5 million by June 30, 2016 (see chart below).

Items added to inventory this quarter include:

- Deer Island – fan motor, air filters, and butterfly valve for HVAC; pulley bushings, electronic module, stainless steel couplings and ballasts for Residuals; pressure switch and actuators for I&C; hex and allen head screws for Liquid Train; washers, nuts and level switches for Power & Pump.
- Chelsea – pressure switches, batteries, filters, tie rods, and inverter connectors for Fleet Services; marine antifreeze, 3 Volt battery, couplings, enclosure cabinet, emergency lighting bracket and sump pump for Work Order Coordination Group; latex gloves for Engineering and Construction; manhole and covers, diamond blades and test stations for Pipeline; switches, meters, light fixtures, security keys and fire extinguishers for Wastewater Operations; spirals seals for Maintenance.
- Southboro – boot studs, boot trekkers and propane tank for Facilities Maintenance; UPS replacement battery for Quality Assurance.

Property Pass Program:

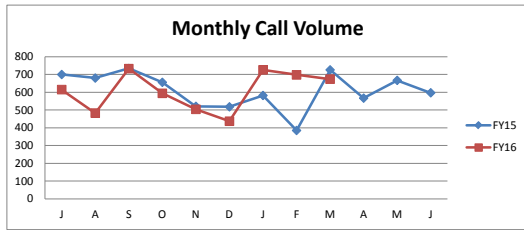
- Seventeen audits were conducted during Q3.
- Numerous obsolete projectors, laptops, keyboards, printers and monitors have been received into Property Pass as surplus. Disposition is being handled as part of our ongoing recycling efforts.
- Scrap revenue received for Q3 amounted to \$11,904. Year to date revenue received amounted to \$25,097.
- Revenue received from online auctions held during Q3 amounted to \$25,680. Year to date revenue received amounted to \$196,131.

Items	Base Value July-15	Current Value w/o Cumulative New Adds	Reduction / Increase To Base
Consumable Inventory Value	7,663,973	7,860,900	-50,531
Spare Parts Inventory Value	8,263,059	8,393,542	-218,012
<b>Total Inventory Value</b>	<b>15,927,032</b>	<b>16,254,442</b>	<b>-268,543</b>

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



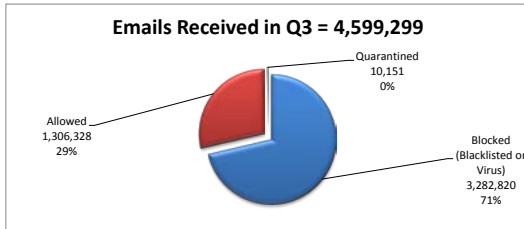
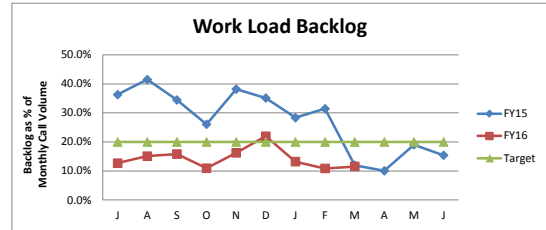
## MIS Program 3rd Quarter FY16



### Performance and Backlog

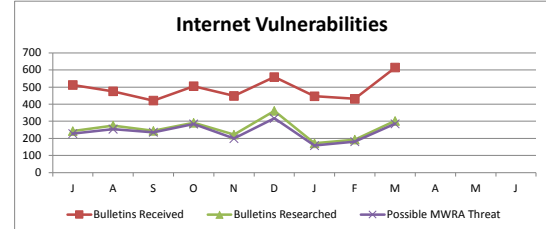
**Call Volume:** Peaked in January. FY16-Q3 call volume increased by 24% from FY15-Q2 last year.

**Call Backlog:** Peaked in January. FY16-Q3 backlog average is 8% below the targeted benchmark of 20%.



### Information Security

During Q3, pushed security fixes/updates to desktops/servers to protect against 101 vulnerabilities. LANDesk Antivirus quarantined 11 distinct viruses from 13 PCs. PCs are current with anti-virus providers' signatures for all known malware.



### Infrastructure:

**Citrix Mobile Application Design and Development:** Device Migration to XenMobile10 is 80% complete. 21 applications are being delivered through Citrix Receiver. Sharefile pilot started and initial feedback is positive. Creating support documentation and Brown Bag session scripts for Citrix Receiver and Sharefile. Sharefile job aid is complete and quick reference card is being developed. Exchange has been migrated to new Netscalers.

### Applications/Training/Records Center:

**Lawson/Maximo:** Reviewed the Maximo/Lawson interface design document developed by the Maximo upgrade consultant; reviewed the reporting requirements and then developed and posted a Statement of Work for the Infor/Lawson development effort. Infor Process Automation (IPA) application will be used for automating the Lawson side of the Maximo interface and software installation, and configuration activities are complete, and staff training is underway to support the upcoming development efforts.

**Lawson Support:** Processed and printed the W2s and 1099s. Reformatted and loaded annual health insurance buy-out file for Payroll. Because of the change in the bank used for the Purchase Card program, staff ran numerous tests to pass data between the MWRA and the Bank of America (BOA). Staff manually downloaded new BOA-posted files from their Business-to-Business (B2B) portal and validated data. Automation of this process is now underway.

**Everbridge Mass Communication and Notification Subscription System:** Ran Employee Notifications training classes and went live with this module in January. Worked with a designated user to set up the EOC Everbridge account. The Community Contacts module went live in February – no training was required; job aids were sufficient. Updated all the user profiles and sent out final instructions to staff.

**Amicus Attorney Upgrade:** Successfully upgraded the Legal Case Management application to the 2015 version. The upgrade included installation of software on a new virtual server and on staff PCs.

**Talent Acquisition Application (LTA):** Attended several webex sessions with HR department for both the Job Application and Onboarding/Hiring processes. Staff continued to make template and configuration changes based on business decisions. Held dedicated meetings with staff from HR and AACU that focused on reports, including gap analysis and custom reporting needs, and began initial programming of them. Conducted workshops with members of HR concentrating on requisition approval through applicant selection workflow, identification of the most common job openings, and establishing the library of job templates (hands on). Successfully tested a process allowing Senior Management to approve job requisitions by email rather than logging into ApplicantPro.

**Portia:** Began implementation of the Portia application upgrade used by Treasury to manage investments. Met with the Portia consultant and key users to review implementation requirements for the Cash Management and Automated Import Modules to ensure requirements are complete; the modules are activated. Q4 focus will be on the Cash Management and AIIM Modules which replace the AdvanteGard's Treasury WorkStation (TWS), formerly XRT Cash and Debt Management application.

**Telog:** Downloaded daily flow data to SQL database from Oracle. Compiled monthly and yearly water consumption totals by community. Uploaded the new community mailing list to SQL database and uploaded the user verified maximum flow week spreadsheet. After user approval, used the web application to create and send the 2015 annual water consumption reports in PDF format for 47 communities.

**Records Management System Replacement Project:** Staff reviewed consolidation requirements from twelve Access databases into a new system with E&C staff. The following items were identified: (1) Reserve a set of consecutive numbers for accession numbers, on a project basis, to identify the physical locations of the drawings. (2) Implement the Infostar replacement in three phases: a) Marlboro Boxed Records Phase (MWRA, DI, Walnut Hill, and MetroWest); b) DI TIC Active Physical Records Management Phase; and c) Physical Drawings phase. Use cases to be developed including two for Phase 1 (box level, folder level) and one for each part of Phase 2. Because different departments use InfoStar for different purposes, a single solution may not be appropriate to meet all users' requirements.

**Library Systems Consolidation Project:** Data migration efforts continue. The focus has been on identifying and downloading official Library of Congress catalog records for our books and artifacts using automated processes as much as possible. Water Research Foundation (WRF) provided abstracts and links to enhance retrieval of the 700+ or their reports that we include in our new catalog. Continued refining Periodicals, Reports, and Subscriptions data for the final import. Completed the physical move of the MWRA reports and the relocation of legal reference materials.

**Maximo Upgrade Project:** Approved Maximo Calibration Solution, PI Interface, Asset/Work Management, Maximo/Lawson Interface design documents. Created data migration environment which allows contractor (TRM) to start data consolidation. Started work on Maximo data migration.

**Library & Records Center:** The Library fulfilled 49 (130 YTD) research requests, cataloged 42 (249 YTD) books and Reports, provided 282 (693 YTD) periodicals, standards, books & reports, supported 69 (553 YTD) staff online searches [i.e. Gale, ASCE]. Research topics included the Sudbury 'Black Lagoon', methane from anaerobic digestion, articles on ozonation and cyanobacteria. The Records Center added 24 (201 YTD) boxes, and attended 2 Records Conservation Board Meetings. Over the last 6 months, our Metropolitan Water Works collection on the Digital Commonwealth had 3 photos in the top 10 of contributor's items visited.

**IT Training:** For the quarter, 191 staff attended 35 classes. 32% of the workforce has attended at least one class year-to-date. Training classes were held for IBM SmartCloud Control Desk, Requirements Development, Documentation and Management, Lawson Time Entry, and Everbridge Dispatcher training. Additionally, Timesheet Adjustment training was held in Chelsea, Charlestown, Deer Island, and Southborough to support the rollout of the new MIS Timesheet Adjustments application. Job aids were developed for Requisitioning Non-Stock Items, Using ShareFile on the PC (including a Quick Reference Card), and the new Bank of America Works Account.

## Legal Matters 3rd Quarter - FY16

### PROJECT ASSISTANCE

#### COURT AND ADMINISTRATIVE ORDER

- **Boston Harbor Litigation and CSO:** Presented MWRA's final CSO Annual Progress Report to Judge Stearns in a formal court appearance attended by most of the court parties.
- **NPDES:** Reviewed EPA's draft guidelines for the General MS4 NPDES Permit.

#### REAL ESTATE, CONTRACT AND OTHER SUPPORT

- **Chelsea Headworks:** Recorded Deed at Suffolk County Registry of Deeds conveying Congress Avenue Extension in Chelsea from the City of Chelsea to MWRA for build out of MWRA's Chelsea Headwork's facility.
- **Public Access:** Finalized an Amendment to the 8(m) permit for Wellesley Country Club. Drafted 8(m) permits for Pine Brook Country Club in Weston for use of land taken for the Weston Aqueduct, and 8(m) permits for Babson College and Franklin W. Olin College of Engineering for use of portions of the Sudbury Aqueduct in Needham, MA.
- **Contract 7471 – Northern Intermediate High Pipeline Section 110 Reading/Woburn:** Finalized license from the Town of Reading to MWRA for the use of Leach Park as a lay down area.
- **NGRID:** Reviewed and provided comments on the contract terms for NGRID to provide gas service for the Clinton Treatment plant.
- **Watershed Acquisition:** Reviewed the documents for the acquisition of a watershed parcel in Sterling MA, No. W-000493 and two (2) watershed parcels in West Boylston, MA, Nos. W-1160 and W-1164.
- **Order of Conditions:** Recorded Order of Conditions (MADEP File 297-0380) for MWRA Contract 7478 – Northern Intermediate High Pipeline, Order of Conditions (MADEP File 212-1132) for MWRA Contract 7157 - Wachusett Aqueduct Pump Station in Marlborough, MA., Order of Conditions for DEP File Nos. 006-1453 for Contract No. 6453 - Southern Extra High Pipeline Section 111; Recorded Certificates of Compliance for Orders of Conditions DEP File No. 337-0961 for Contract No. 6975 - Hultman Aqueduct Interconnections and for Orders of Conditions DEP File No. 337 1068 for Contract No. 6975 - Shaft 5 Water Main Break Restoration at Middlesex South Registry of Deeds.
- **NSTAR/HEEC:** Drafted and filed Pre-Filed Direct Testimony in the Harbor Electric Energy Company Rate Tariff proceeding at the Department of Public Utilities, D.P.U. 15-157.
- **Cross Harbor Cable:** Reviewed a draft Stipulation and Order from the U.S. Attorney's Office regarding the potential resolution of NSTAR/HEEC's failure to site the cable at the proper Permit depth.
- **Contractor Claims:** Reviewed and provided a recommendation on one (1) construction contractor claim, under Contract No. 7398, "Cryogenic Chillers Replacement DITP".

#### MISCELLANEOUS

- Reviewed and approved fifty-seven (57) Section 8(m) Permits and one (1) Direct Connect Permit; investigated past purchases by MWRA of liquid aluminum sulfate re: class action suits asserting price fixing, bid rigging and monopolization.

## LABOR, EMPLOYMENT AND ADMINISTRATIVE

### New Matters

Four demands for arbitration were filed.

A Charge was filed at the Massachusetts Commission Against Discrimination alleging that the MWRA retaliated against an employee.

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

A Charge was filed at the Equal Employment Opportunity Commission alleging that the MWRA discriminated against an employee on the basis of age.

### Matters Concluded

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

Received an arbitrator's decision in favor of MWRA finding that the MWRA did not violate a collective bargaining agreement when it suspended an employee for two days.

Received an arbitrator's decision in favor of a Union finding that the MWRA did violate a collective bargaining agreement when it denied grievants first refusal for overtime opportunities.

Settled a charge of discrimination filed against the MWRA at the MCAD.

## LITIGATION/TRAC

### New Matters

**TG v. (Current Employee)**: This is a Wage Garnishment matter that was received on March 18, 2016 regarding an Order of Withholding From Earnings from Texas Guaranteed Student Loan Corporation for payment of defaulted student loans in the amount of \$299,012.31 for current MWRA employee.

### Significant Claim Not in Court

**HEEC Tariff Petition to Mass Dept of Public Utilities**: Harbor Electric Energy Company (HEEC) filed a request for a tariff approval with the MA Department of Public Utilities concerning the costs of service payable by MWRA associated with the cross-harbor cable. The tariff proposed by HEEC could include the costs to protect the cable from Massport's upcoming harbor dredging project. (Petition of Harbor Electric Energy Co.; DPU 15-157)

### Significant Developments

**Daniel O'Connell's Sons v. MWRA v. Allied-Locke**: Deposed key witness Mike Humcke and completed designation of five expert witnesses for MWRA's case. Completed supplemental expert disclosure

**MWRA v. HEEC and NSTAR**: Completed opposition to defendants' motion to dismiss Complaint; Discussion with Army Corps. legal counsel re: no permittee role for MWRA in next permit for dredging project and cable protection. Completed pre-filed testimony of John Navoy and Robert Mudge.

**Antonio Rosa Claim**: Prepared settlement proposal.

### Matters Concluded

No matters have been concluded.

### Subpoenas

During the Third Quarter of FY 2016, no new subpoenas were received and no subpoenas were pending at the end of the Third Quarter FY 2016.

### Public Records

During the Third Quarter of FY 2016, thirteen public records requests were received and six public records requests were closed.

**SUMMARY OF PENDING LITIGATION MATTERS**

<b>TYPE OF CASE/MATTER</b>	<b>As of April 2016</b>	<b>As of Dec 2015</b>	<b>As of Sept 2015</b>
Construction/Contract/Bid Protest (other than BHP)	5	5	5
Tort/Labor/Employment	2	2	3
Environmental/Regulatory/Other	2	1	1
Eminent Domain/Real Estate	0	0	0
<b>total – all defensive cases</b>	<b>9</b>	<b>8</b>	<b>9</b>
Affirmative cases not in suit:	0	0	0
Other Litigation matters (restraining orders, etc.) <u>MWRA v. Thomas Mercer</u> <u>MWRA v. NSTAR and HEEC</u>	2	2	1
<b>total – all pending lawsuits</b>	<b>11</b>	<b>10</b>	<b>10</b>
Significant claims not in suit: <u>Rosa, Antonio</u> <u>Poli, Mark</u>	2	2	4
Bankruptcy	2	2	1
Wage Garnishment	14	13	13
TRAC/Adjudicatory Appeals	3	3	2
Subpoenas	0	0	0
<b>TOTAL – ALL LITIGATION MATTERS</b>	<b>32</b>	<b>30</b>	<b>30</b>

**TRAC/MISC.**

**New Appeals**                    There was one new TRAC appeal received in the 3rd Quarter FY 2016.

Nova Biomedical Corp.; MWRA Docket No. 16-01

**Settlement by Agreement of Parties**                    No cases were settled by Agreement of Parties in the 3rd Quarter FY 2016.

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

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

**Tentative Decisions**                    One Tentative Decisions was issued in the 3rd Quarter FY 2016.

School of the Museum of Fine Arts; MWRA Docket No. 15-01

**Final Decisions**                    No Final Decisions were issued during the 3rd Quarter FY 2016.

## INTERNAL AUDIT AND CONTRACT AUDIT ACTIVITIES 3rd Quarter - FY16

### Highlights

During the 3rd quarter, Internal Audit (IA) prepared analyses and issued reports on overtime and sick time. In conjunction with the Office of Emergency Preparedness, IA conducted a review of the security system alarms resulting in 3 recommendations which have been implemented or are in the process of being implemented. Management advisory services included a financial review, contract pricing and an analysis of the Chelsea facility real estate taxes over the years.

IA completed two incurred cost audits including CDM, where the refund has already been received.

At the request of the Law Division, IA audited a construction litigation claim and recommended substantial reductions to the costs claimed. IA also performed three construction labor burden reviews resulting in large reductions to the rates.

### Status of Recommendations

There were 46 recommendations made in FY16. A total of 42 recommendations were closed from prior and current fiscal years.

IA follows-up on open recommendations on a continuous basis. All open recommendations have target dates for implementation. When a recommendation has not been acted on within 48 months, the appropriateness of the recommendation is re-evaluated during a subsequent audit. On closed assignments 98% of recommendations have been implemented.

Report Title (date)	Audit Recommendations		
	Total	Closed	Open
Physical Security at the Chelsea Facility (12/31/12)	32	30	2
Hardware Equipment Management (5/22/13)	36	27	9
Follow-Up Report on Fleet Services Activities (12/31/13)	17	13	4
Expanded Affirmative Action Requirements (9/30/14)	16	15	1
8(m) Permit Fee (11/17/14)	6	4	2
Records Management (12/5/14)	8	6	2
AVL Tracking System, Contract A586 (4/22/15)	5	1	4
Unmatched Receipts and Accruals (6/30/15)	10	5	5
Halon Inspections at DITP (9/30/15) & Caruso and DeLauri (12/31/15)	18	13	5
Warehouse Cycle Counts: DITP (11/5/15), Southborough (11/6/15), and Chelsea (12/4/15)	25	16	9
Security System Alarms (3/3/16)	3	1	2
<b>Total Recommendations</b>	<b>176</b>	<b>131</b>	<b>45</b>

### Cost Savings

IA'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.

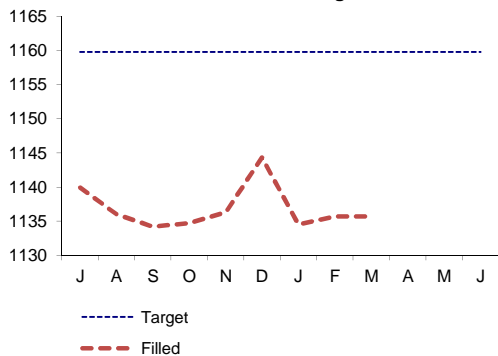
Cost Savings	FY12	FY13	FY14	FY15	FY16, Q3	TOTAL
Consultants	\$259,245	\$587,314	\$294,225	\$87,605	\$86,120	\$1,314,509
Contractors & Vendors	\$435,760	\$2,153,688	\$415,931	\$1,146,742	\$1,523,064	\$5,675,185
Internal Audits	\$407,350	\$391,083	\$923,370	\$543,471	\$37,500	\$2,302,774
<b>Total</b>	<b>\$1,102,355</b>	<b>\$3,132,085</b>	<b>\$1,633,526</b>	<b>\$1,777,818</b>	<b>\$1,646,684</b>	<b>\$9,292,468</b>

## OTHER MANAGEMENT

# Workforce Management

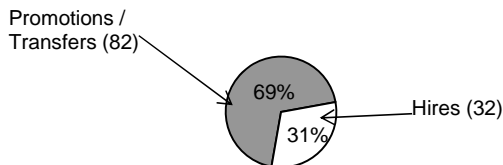
## 3rd Quarter FY16

**FTE Tracking**



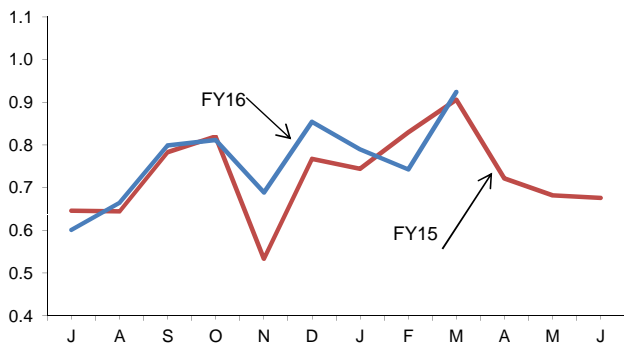
FY16 Target for FTE's = 1159.8  
 FTE's as of March 2016 = 1135.7

**Positions Filled by Hires/Promotions**  
 FY16-YTD



	Pr/Trns	Hires	Total
FY13	82 (64%)	47 (36%)	129
FY14	111 (69%)	51 (31%)	162
FY15	133 (67%)	65 (33%)	198
FY16	82 (69%)	32 (31%)	118

**Average Monthly Sick Leave Usage**  
 Per Employee



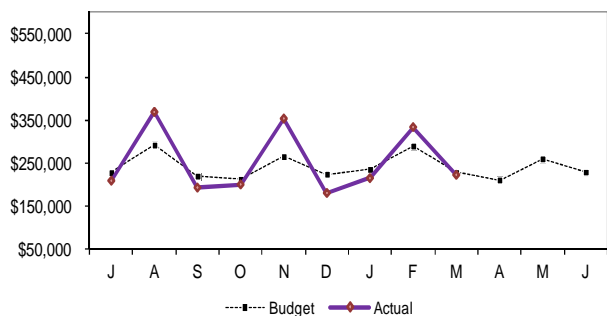
Average monthly sick leave for the 3rd Quarter of FY16 decreased as compared to the 3rd Quarter of FY15 (9.92 to 9.83 days).

In Q3 of FY16, the average quarterly sick leave usage has decreased 0.91% from the same time last year.

	Number of Employees	YTD	Annualized Total	Annual FMLA %	FY15
Admin	137	6.55	8.73	18.9%	9.61
Aff. Action	6	6.09	8.12	0.0%	16.89
Executive	5	11.17	14.90	82.5%	7.20
Finance	35	7.70	3.78	34.2%	5.56
Int. Audit	7	2.84	3.78	18.7%	5.56
Law	15	8.90	11.87	29.3%	11.30
OEP	5	4.41	5.88	0.0%	13.28
Operations	932	6.89	9.19	18.0%	8.53
Pub. Affs.	14	6.70	8.93	30.1%	7.26
<b>MWRA Avg</b>	<b>1156</b>	<b>6.88</b>	<b>9.17</b>	<b>19.2%</b>	<b>8.75</b>

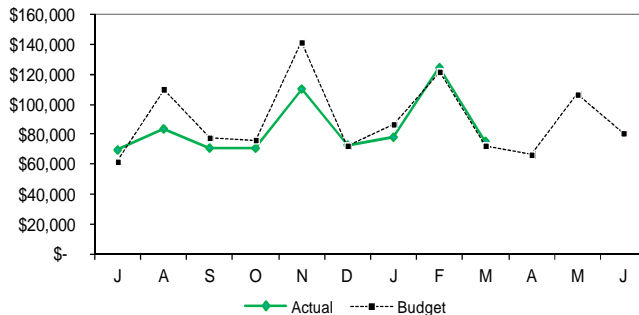
Percent of sick leave usage for FY16, attributable to Family and Medical Leave Act (FMLA) is 19.2% .

**Field Operations**  
 Current Month Overtime \$



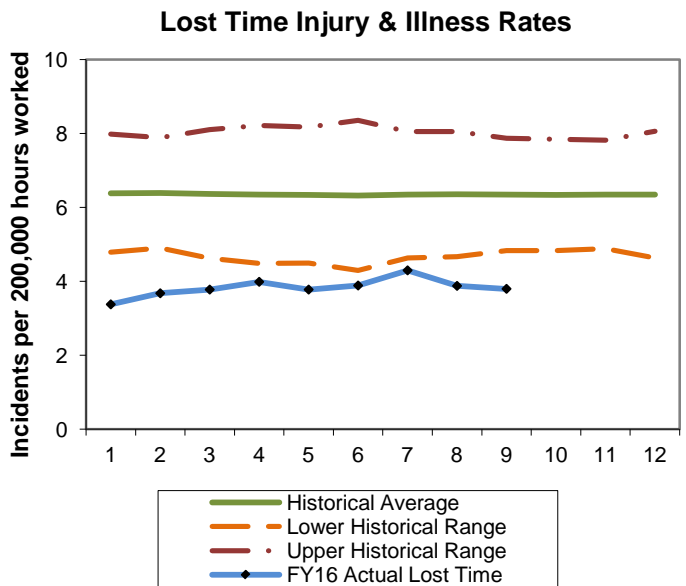
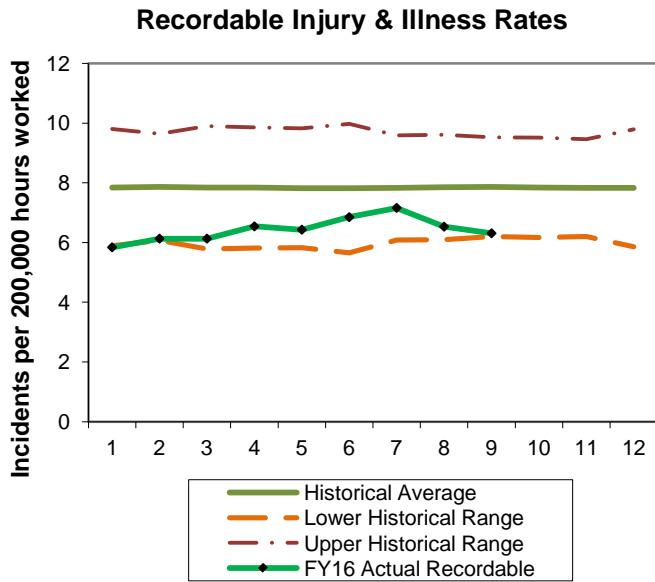
Total Overtime for Field Operations for the third quarter was \$770,646 which is \$17k over budget. Emergency overtime was \$329k, which was (\$4k) under budget, mainly due to relatively dry weather. Emergency maintenance totaled \$111k for the month, \$77k of which was for response to the Nut Island Fire. Coverage overtime was \$141k, which was \$4k over budget, reflecting the month's shift coverage requirements. Planned overtime was \$301k or \$16k over budget, mainly for maintenance off-hours work at \$85k, maintenance work completion at \$50k, and half plant operations at Carroll at \$48k. YTD, Field Operations has spent \$2,274,689 on overtime which is \$80k over budget.

**Deer Island Treatment Plant**  
 Current Month Overtime \$



Deer Island's total overtime expenditure for the third quarter was \$75k, which is \$3k over budget. Higher than anticipated combination of planned/unplanned overtime, \$18k combined with greater than budgeted shift coverage requirements, \$5k, are offset in part by less than anticipated storm coverage requirements, (\$20k). YTD Deer Island has spent \$755,500 on overtime, which is (\$66k) under budget.

## Workplace Safety Third Quarter - FY16



- 1 "Recordable" incidents are all work-related injuries and illnesses which result in death, loss of consciousness, restriction of work or motion, transfer to another job, or require medical treatment beyond first aid.
- 2 "Lost-time" incidents, a subset of the recordable incidents, are only those incidents resulting in any days away from work, days of restricted work activity or both - beyond the first day of injury or onset of illness.
- 3 The "Historical Average" is computed using the actual MWRA monthly incident rates for FY99 through FY14. The "Upper" and "Lower Historical Ranges" are computed using these same data – adding and subtracting two standard deviations respectively. FY15 actual incident rates can be expected to fall within this historical range.

### Workers Compensation Claims Highlights - 3rd Quarter FY16

	New	Closed	Open Claims
Lost Time	13	13	62
Medical Only	20	25	16
Report Only	28	28	
	New		YTD Light Duty Returns
Light Duty Returns	5		1

### Highlights/Comments:

#### Light Duty Returns

- January One employee returned to light duty from workers comp
- February Two employees returned to light duty from workers comp
- March Two employees returned to light duty from workers comp

#### Regular Duty returns

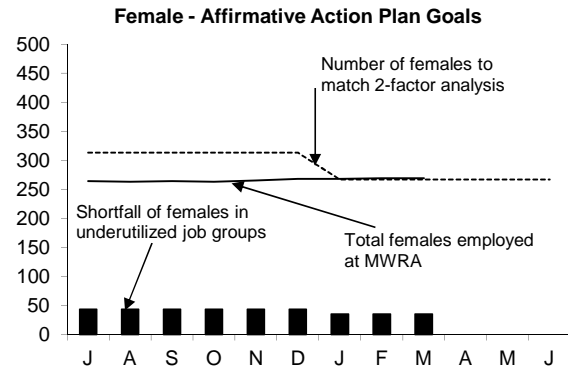
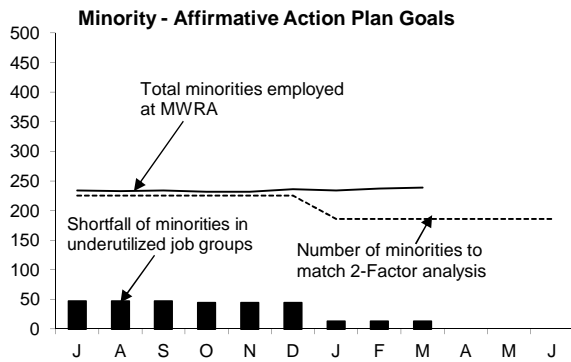
- January One employee returned to full duty from workers comp
- February Four employees returned to full duty from workers comp
- March Two employees returned to full duty from workers comp

Note: Claims may initially be counted in one category and changed to another category at a later date. Examples include a medical treatment only claim (no lost time from work) but the employee may require surgery at a later date resulting in the claim becoming a lost time claim. At that time we would only count the claim as opened but not as a new claim.

\*Report only claims are closed the month they are filed.



**MWRA Job Group Representation**  
3rd Quarter - FY16



**Highlights:**

At the end of Q3 FY16, 5 job groups or a total of 13 positions are underutilized by minorities as compared to 11 job groups or a total of 54 positions at the end of Q3 FY15; for females 11 job groups or a total of 36 positions are underutilized by females as compared to 10 job groups or a total of 43 positions at the end of Q3 FY15. During Q3, 4 minority and 2 female were hired. During this same period 2 minorities and 1 female terminated.

**Underutilized Job Groups - Workforce Representation**

Job Group	Employees	Minorities	Achievement	Minority	Females	Achievement	Female
	as of 3/31/2016	as of 3/31/2016	Level	Over or Under Underutilized	As of 3/31/2016	Level	Over or Under Underutilized
Administrator A	21	2	2	0	7	6	1
Administrator B	21	0	3	-3	2	5	-3
Clerical A	38	14	5	9	33	34	-1
Clerical B	33	8	8	0	12	17	-5
Engineer A	83	19	14	5	13	12	1
Engineer B	56	17	11	6	11	7	4
Craft A	113	17	15	2	0	7	-7
Craft B	145	29	17	12	3	4	-1
Laborer	67	20	15	5	3	3	0
Management A	96	13	15	-2	36	24	12
Management B	40	6	3	3	9	10	-1
Operator A	66	5	10	-5	1	9	-8
Operator B	67	11	2	9	4	1	3
Professional A	35	4	6	-2	22	14	8
Professional B	163	45	35	10	81	67	14
Para Professional	55	14	11	3	26	29	-3
Technical A	51	14	10	4	5	10	-5
Technical B	7	1	2	-1	1	2	-1
<b>Total</b>	<b>1157</b>	<b>239</b>	<b>184</b>	<b>68/-13</b>	<b>269</b>	<b>261</b>	<b>43/-35</b>

**AACU Candidate Referrals for Underutilized Positions**

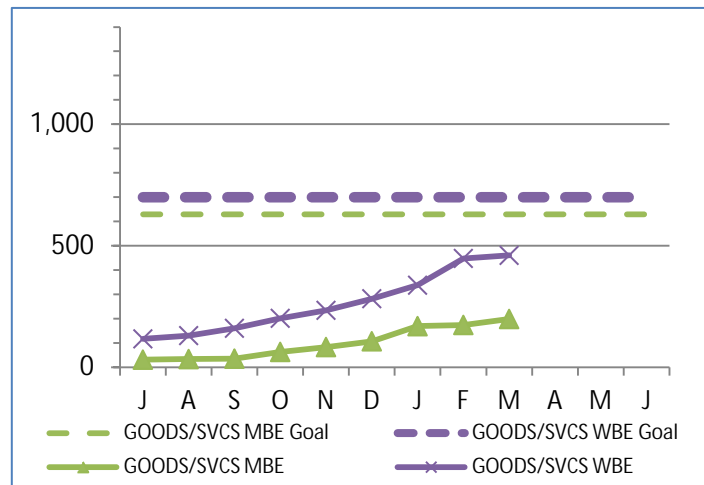
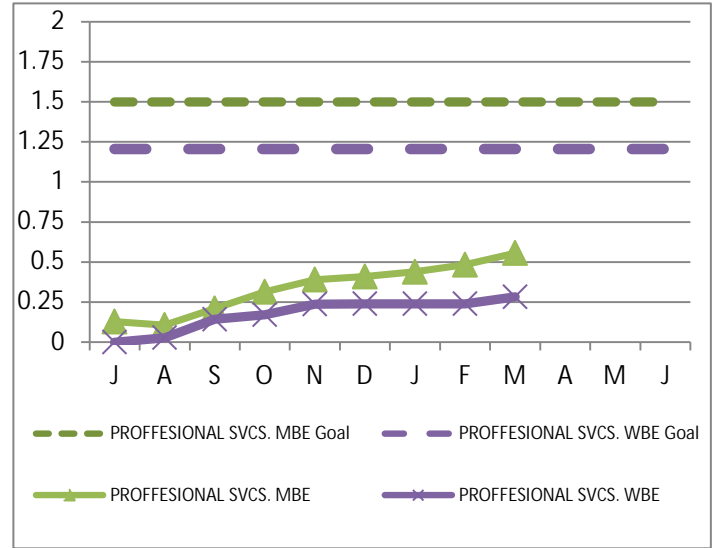
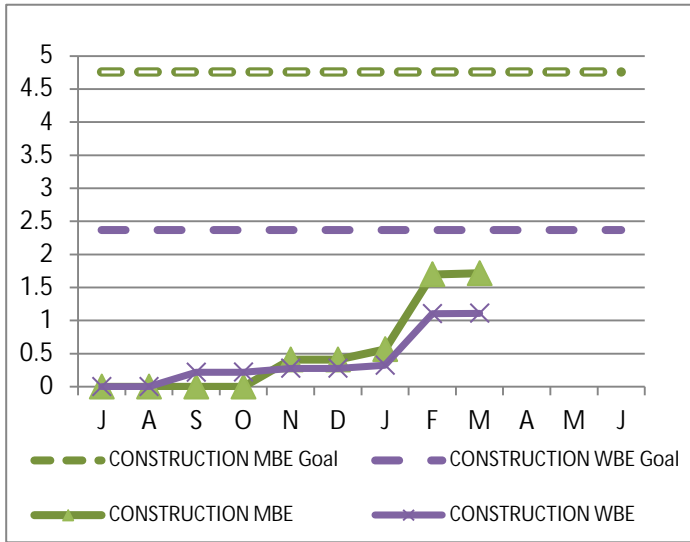
Job Group	Title	# of Vac	Requisition Int. / Ext.	Promotions/ Transfers	AACU Ref. External	Position Status
Craft A	M&O Specialist	2	Int	2	0	Promo = HM & WM
Craft B	HVAC Specialist	1	Int/Ext	0	1	NH = WM
Craft B	Plumber/Pipefitter	1	Int/Ext	0	0	NH = WM
Clerical A	Payables Coordinator	1	Int/Ext	0	0	NH = WM
Clerical A	Payroll Specialist	1	Int/Ext	0	2	In Progress
Engineer A	Program Manager, SCADA	1	Int	1	0	Transfer = WM
Engineer A	Senior Program Manager	1	Int/Ext	0	0	NH = WM
Engineer B	Staff Engineer	2	Int/Ext	0	0	NH = BF & AM
Engineer B	Assistant Civil Engineer	1	Int/Ext	0	1	In Progress
Laborers	Skilled Laborer	1	Int/Ext	0	0	NH = HM
Laborers	OMC Laborer	4	Int/Ext	1	0	NH = (2)WM & BM; T = WM
Management A	Construction Coordinator	1	Int/Ext	0	0	NH = WF
Management B	Manager, Process Control	1	Int	1	0	Promo = AF
Operator A	Research Vessel Operator	1	Int	1	0	Promo = WM
Operator A	Transmission & Treatment Operator	1	Int	1	0	Promo = WM
Operator B	Operator	1	Int	1	0	Transfer = WM
Professional B	IT Architect	2	Int/Ext	2	0	Promo = BM & AM
Professional B	Systems Analyst Programmer II	1	Int/Ext	0	1	In Progress
ParaProfessional	Payroll Administrator	1	Int	1	0	Promo = BM
Technical A	Senior Instrument Technician	1	Int	1	0	Transfer = WM

## MBE/WBE Expenditures 3rd Quarter - FY16

**Background:**

MBE/WBE targets are determined based on annual MWRA expenditure forecasts in the procurement categories noted below. The goals for FY16 are based on 85% of the total construction and 75% of the total professional projected spending for the year. Certain projects have been excluded from the goals as they have no MBE/WBE spending goals.

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



FY16 spending and percentage of goals achieved, as well as FY15 performance are as follows:

	<b>MBE</b>		<b>WBE</b>		<b>MBE</b>		<b>WBE</b>	
	FY16 Year-to-Date	FY15	FY16 Year-to-Date	FY15	FY16 Year-to-Date	FY15	FY16 Year-to-Date	FY15
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
Construction	1,713,993	36.0%	2,314,979	106.5%	1,102,844	46.6%	3,566,302	146.8%
Professional Svc.	556,227	37.1%	633,926	55.4%	282,413	23.4%	345,476	37.6%
<u>Goods &amp; Svcs.</u>	<u>198,390</u>	<u>31.5%</u>	<u>387,847</u>	<u>69.9%</u>	<u>460,023</u>	<u>65.7%</u>	<u>870,175</u>	<u>180.3%</u>
Total	2,468,610	35.8%	3,336,752	86.2%	1,845,280	43.2%	4,781,953	124.8%

FY15 MBE/WBE dollar totals do not include MBE and WBE payments to prime contractors and consultants.

## CEB Expenses through 3<sup>rd</sup> Quarter – FY16

	March 2016 Year-to-Date					
	Period 9 YTD Budget	Period 9 YTD Actual	Period 9 YTD Variance	%	FY16 Approved	%
					Expended	
<b>EXPENSES</b>						
WAGES AND SALARIES	\$ 71,840,962	\$ 69,512,899	\$ (2,328,063)	-3.2%	\$ 99,363,168	70.0%
OVERTIME	3,197,824	3,260,895	63,071	2.0%	4,219,293	77.3%
FRINGE BENEFITS	14,377,009	14,290,061	(86,948)	-0.6%	19,326,756	73.9%
WORKERS' COMPENSATION	1,757,250	1,623,398	(133,852)	-7.6%	2,343,000	69.3%
CHEMICALS	7,126,576	6,836,644	(289,932)	-4.1%	9,790,848	69.8%
ENERGY AND UTILITIES	17,392,913	14,153,176	(3,239,737)	-18.6%	23,164,822	61.1%
MAINTENANCE	18,459,781	21,197,087	2,737,306	14.8%	28,698,772	73.9%
TRAINING AND MEETINGS	281,206	235,613	(45,593)	-16.2%	413,714	57.0%
PROFESSIONAL SERVICES	4,169,816	4,050,497	(119,319)	-2.9%	5,819,611	69.6%
OTHER MATERIALS	2,893,230	3,692,567	799,337	27.6%	6,164,589	59.9%
OTHER SERVICES	17,422,863	17,131,777	(291,086)	-1.7%	23,529,902	72.8%
<b>TOTAL DIRECT EXPENSES</b>	<b>\$ 158,919,430</b>	<b>\$ 155,984,614</b>	<b>\$ (2,934,816)</b>	<b>-1.8%</b>	<b>\$ 222,834,475</b>	<b>70.0%</b>
INSURANCE	\$ 1,620,598	\$ 1,536,473	\$ (84,125)	-5.2%	\$ 2,160,797	71.1%
WATERSHED/PILOT	21,072,175	20,696,996	(375,179)	-1.8%	28,096,233	73.7%
BEC <sub>o</sub> PAYMENT	1,340,112	1,193,011	(147,101)	-11.0%	1,946,157	61.3%
MITIGATION	1,050,000	1,140,000	90,000	8.6%	1,400,000	81.4%
ADDITIONS TO RESERVES	(26,195)	(26,195)	-	0.0%	(34,927)	75.0%
RETIREMENT FUND	8,159,521	8,159,521	-	0.0%	8,159,521	100.0%
POST EMPLOYEE BENEFITS	-	-	-	---	5,224,848	0.0%
<b>TOTAL INDIRECT EXPENSES</b>	<b>\$ 33,216,211</b>	<b>\$ 32,699,806</b>	<b>\$ (516,405)</b>	<b>-1.6%</b>	<b>\$ 46,952,629</b>	<b>69.6%</b>
STATE REVOLVING FUND	\$ 57,628,678	\$ 58,019,620	\$ 390,942	0.7%	\$ 81,876,277	70.9%
SENIOR DEBT	210,128,430	203,062,398	(7,066,032)	-3.4%	283,024,431	71.7%
CORD FUND	-	-	-	---	-	---
DEBT SERVICE ASSISTANCE	-	-	-	---	-	---
CURRENT REVENUE/CAPITAL	8,400,000	8,400,000	-	0.0%	11,200,000	75.0%
SUBORDINATE MWRA DEBT	36,607,032	36,607,032	-	0.0%	49,222,442	74.4%
LOCAL WATER PIPELINE CP	3,111,930	3,111,930	-	0.0%	4,149,240	75.0%
CAPITAL LEASE	2,412,795	2,412,795	-	0.0%	3,217,060	75.0%
VARIABLE DEBT	-	(10,456,635)	(10,456,635)	---	-	0.0%
BOND REDEMPTION SAVINGS	-	-	-	---	-	---
DEFEASANCE ACCOUNT	-	17,131,725	17,131,725	---	-	0.0%
<b>TOTAL DEBT SERVICE</b>	<b>\$ 318,288,865</b>	<b>\$ 318,288,865</b>	<b>\$ -</b>	<b>0.0%</b>	<b>\$ 432,689,450</b>	<b>73.6%</b>
<b>TOTAL EXPENSES</b>	<b>\$ 510,424,506</b>	<b>\$ 506,973,284</b>	<b>\$ (3,451,222)</b>	<b>-0.7%</b>	<b>\$ 702,476,554</b>	<b>72.2%</b>
<b>REVENUE &amp; INCOME</b>						
RATE REVENUE	\$ 504,330,000	\$ 504,330,000	\$ -	0.0%	\$ 672,440,000	75.0%
OTHER USER CHARGES	6,352,023	6,456,474	104,451	1.6%	8,683,898	74.3%
OTHER REVENUE	10,791,306	12,684,533	1,893,227	17.5%	12,000,066	105.7%
RATE STABILIZATION	-	-	-	---	-	---
INVESTMENT INCOME	6,874,246	7,263,887	389,641	5.7%	9,352,590	77.7%
<b>TOTAL REVENUE &amp; INCOME</b>	<b>\$ 528,347,575</b>	<b>\$ 530,734,894</b>	<b>\$ 2,387,316</b>	<b>0.5%</b>	<b>\$ 702,476,554</b>	<b>75.6%</b>

As of March 2016, total expenses were \$507.0 million, \$3.5 million or 0.7% lower than budget and total revenue was \$530.7 million, \$2.4 million or 0.5% higher than budget, for a net variance of \$5.8 million.

**Direct Expenses** are \$156.0 million, \$2.9 million or 1.8% lower than budget.

- **Wages & Salaries** are under budget by \$2.3 million or 3.2%. At the end of March the average Full Time Equivalent (FTE) positions were 1,137, 23 positions less than the 1,160 budgeted FTE's.
- **Utilities** are underspent by \$3.2 million or 18.6% due to lower Electricity of \$1.9 million mainly due to Deer Island with underspending of \$1.6 million for lower commodity and T&D costs, lower plant flows resulted in reduced electricity demand; and an overaccrual at the end of FY15. Additionally, lower diesel prices contributed \$1.3 million to the variance.
- **Maintenance** is over budget by \$2.7 million or 14.8%. Materials were overspent by \$1.7 million due mainly to timing of energy efficiency projects. Services are over budget by \$989k due to schedule shifts for planned projects for this year.
- **Chemicals** are under budget by \$290k or 4.1% due to lower than budgeted spending on Soda Ash of \$319k due to lower usage to meet corrosion control targets and timing of deliveries, Sodium Bisulfite of \$125k due to time of deliveries at DITP and lower usage at the CWTP for Ozone residual removal. This is partially offset by overspending on Hydrogen Peroxide of \$184k due to increased need for pretreatment of hydrogen sulfide gas due to plant flows.
- **Other Materials** were higher than budget by \$799k or 27.6% mainly due to the timing of Vehicle Purchases of \$752k and Computer Hardware of \$114k. The overspending is offset by lower spending for Vehicle Expenses of \$289k mostly due to lower fuel prices.
- **Other Services** spending was lower than budget by \$291k or 1.7% due to lower spending of \$160k for sludge pelletization services for lower utility index adjustments; \$88k for Space Lease Rentals for the Chelsea facility lease due to an overpayment of escrow for insurance; \$87k for Grit and Screenings disposal services due to lower quantities; and \$59k for Other Rentals. Lower spending is offset by higher spending on Telephone Services of \$65k associated with new and more SCADA lines, Other Services of \$56k for Ward Street Headworks tower demolition and Membership/Dues/Subscriptions of \$49k.

**Indirect Expenses** of \$32.7 million \$516k or 1.6% lower than budget mainly due lower Watershed reimbursement of \$375k due to FY15 overaccrual and lower Insurance of \$84k mainly due to lower lower premiums, lower PILOT payments of \$39k, and lower HEEC cost of \$1487, partially offset by higher spending of \$90k for mitigation.

**Debt Service Expenses** totaled \$318.30 million, which was at budget level after transferring \$17.1 million to the Defeasance Account YTD. The short-term rates related variance is \$10.5 million and an additional \$6.7 million in underspending is due to defeasances and a deferred senior debt issuance scheduled for November 2015.

**Revenue / Income** through March is \$530.7 million, \$2.4 million over budget mainly due to higher Non-Rate revenue \$1.9 million due to \$610k for TRAC Penalties, \$593k from unplanned water purchase from the City of Lynn, \$224k for U.S. Treasury rebates, higher surplus equipment sales of \$249k, Energy Rebates of \$254k, and greater Investment Income of \$390k.

## Cost of Debt 3<sup>rd</sup> Quarter – FY16

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.

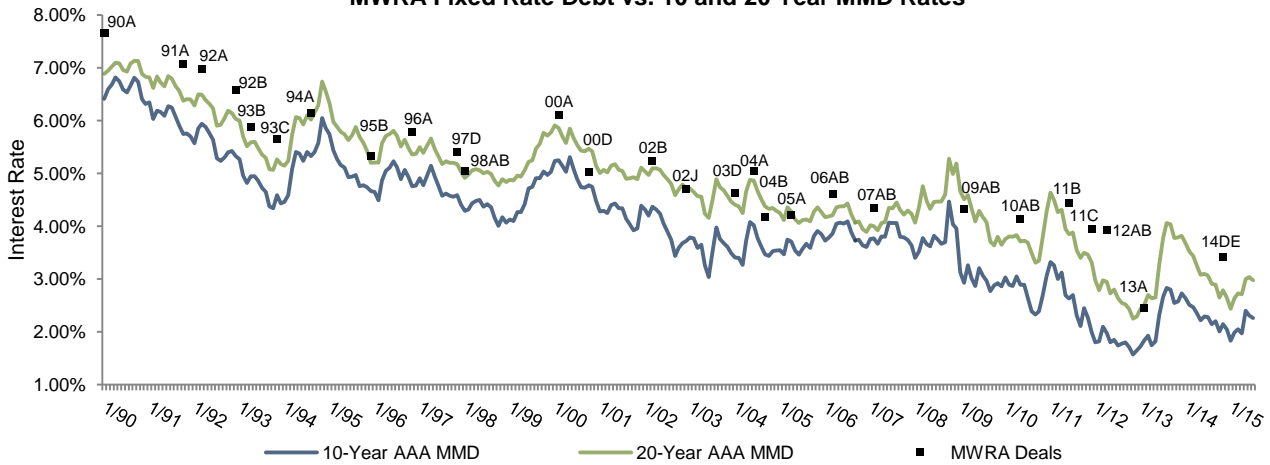
### Average Cost of MWRA Debt

Fixed Debt (\$3,738)	4.23%
Variable Debt (\$484.2)	0.56%
SRF Debt (\$982.8)	1.31%
 Weighted Average Debt Cost (\$5,205)	 3.34%

### Most Recent Senior Fixed Debt Issue November 2014

2014 Series D-F (\$243.9)	3.41%
---------------------------	-------

### MWRA Fixed Rate Debt vs. 10 and 20 Year MMD Rates



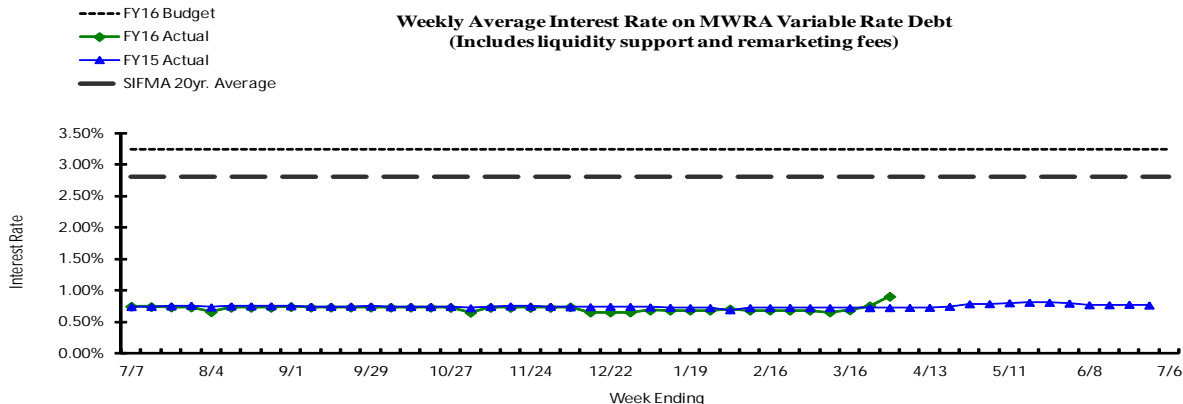
Bond Deal	1990A	1991A	1992A	1992B	1993B	1993C	1994A	1995B	1996A	1997D	1998AB	2000A	2000D	2002B
Rate	7.67%	7.08%	6.98%	6.58%	5.89%	5.66%	6.15%	5.34%	5.78%	5.40%	5.04%	6.11%	5.03%	5.23%
Avg Life	21.8 yrs	19.8 yrs	22.6 yrs	6.3 yrs	19.8 yrs	19.1 yrs	19.5 yrs	20.5 yrs	19.5 yrs	21.6 yrs	24.4 yrs	26.3 yrs	9.8 yrs	19.9 yrs

Bond Deal	2002J	2003D	2004A	2004B	2005A	2006AB	2007AB	2009AB	2010AB	2011B	2011C	2012AB	2013A	2014DE
Rate	4.71%	4.64%	5.05%	4.17%	4.22%	4.61%	4.34%	4.32%	4.14%	4.45%	3.95%	3.93%	2.45%	3.41%
Avg Life	19.6 yrs	18.4 yrs	19.6 yrs	13.5 yrs	18.4 yrs	25.9 yrs	24.4 yrs	15.4 yrs	16.4 yrs	18.8 yrs	16.5 yrs	17.9 yrs	9.9 yrs	15.1 yrs

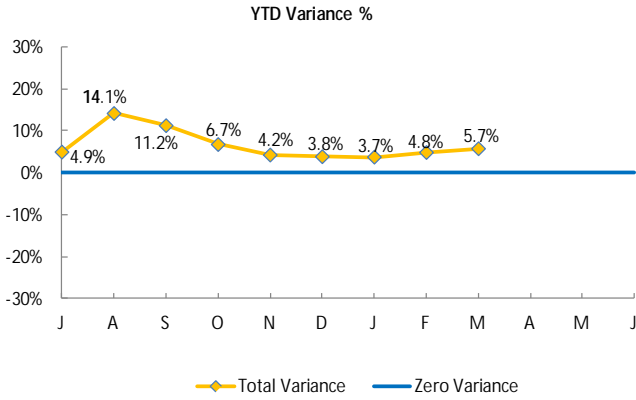
### Weekly Average variable Interest Rates vs. Budget

MWRA currently has ten variable rate debt issues with \$1.0 billion outstanding, excluding commercial paper. Of the ten outstanding series, five have portions which have been swapped to fixed rate. Variable rate debt has been less expensive than fixed rate debt in recent years as short-term rates have remained lower than long-term rates on MWRA debt issues. In March, SIFMA rates ranged from 0.02% to 0.29% for the month. 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.



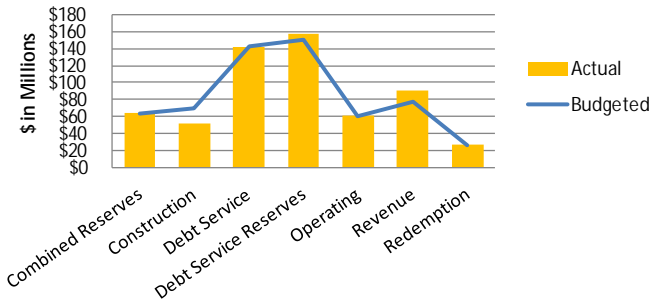
# Investment Income 3rd Quarter – FY16

## Year To Date

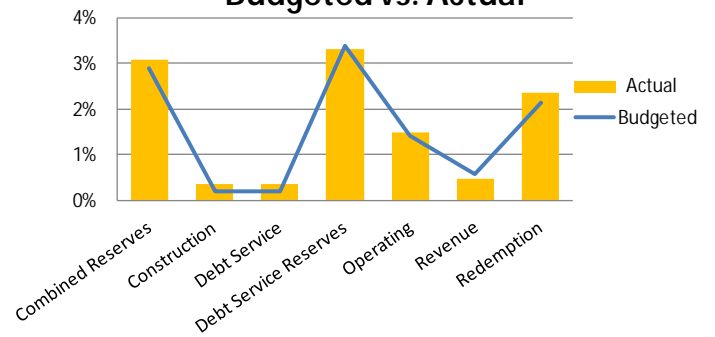


	YTD BUDGET VARIANCE (\$000)			
	BALANCES IMPACT	RATES IMPACT	TOTAL	%
Combined Reserves	\$5	\$93	98	7.2%
Construction	(\$60)	\$92	33	31.8%
Debt Service	\$1	\$173	174	83.0%
Debt Service Reserve	\$40	(\$10)	30	0.8%
Operating	\$11	\$15	26	4.1%
Revenue	\$9	(\$22)	(13)	-4.0%
Redemption	\$3	\$39	41	9.9%
<b>Total Variance</b>	<b>\$9</b>	<b>\$380</b>	<b>\$390</b>	<b>5.7%</b>

### YTD Average Balances Budgeted vs. Actual

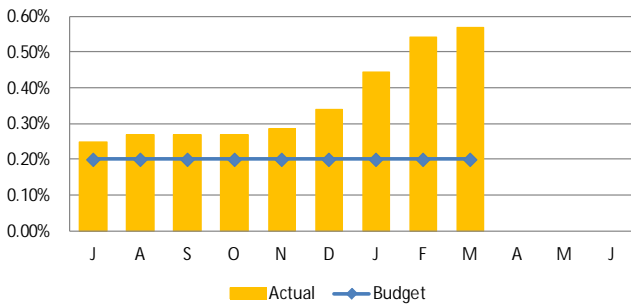


### YTD Average Interest Rate Budgeted vs. Actual

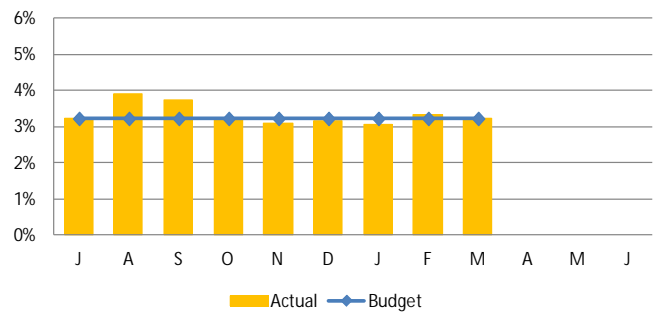


## Monthly

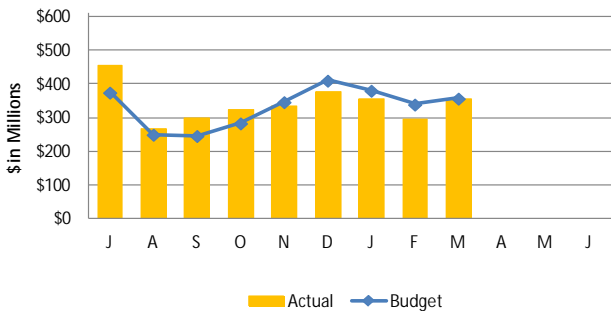
### Short-Term Interest Rates



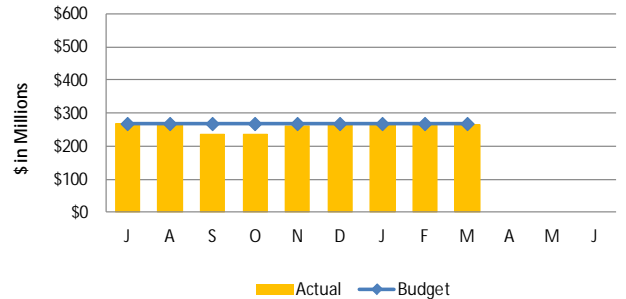
### Long-Term Interest Rates



### Short-Term Average Balances



### Long-Term Average Balances



## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** May 11, 2016  
**SUBJECT:** Delegated Authority Report – April 2016



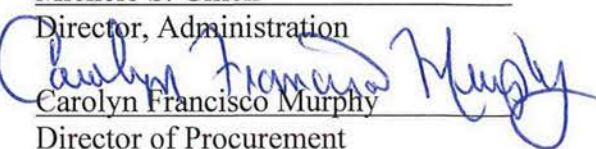
COMMITTEE: Administration, Finance & Audit

INFORMATION  
 VOTE

Barbie Aylward, Administrator A & F  
Joanne Gover, Admin. Systems Coordinator  
Preparer/Title

  
Michele S. Gillen

Director, Administration

  
Carolyn Francisco Murphy  
Director of Procurement

### RECOMMENDATION:

For information only. Attached is a listing of actions taken by the Executive Director under delegated authority for the period April 1 – 30, 2016.

This report is broken down into three sections:

- Awards of Construction, non-professional and professional services contracts and change orders and amendments in excess of \$25,000, including credit change orders and amendments in excess of \$25,000;
- Awards of purchase orders in excess of \$25,000; and
- Amendments to the Position Control Register, if applicable.

### BACKGROUND:

The Board of Directors' Management Policies and Procedures, as amended by the Board's vote on October 14, 2009, delegate authority to the Executive Director to approve the following:

#### Construction Contract Awards:

Up to \$1 million if the award is to the lowest bidder; or up to \$500,000 if the award is to other than the lowest bidder.

#### Change Orders:

Up to 25% of the original contract amount or \$250,000, whichever is less, where the change increases the contract amount, and for a term not exceeding an aggregate of six months; and for any amount and for any term, where the change decreases the contract amount. The delegations for cost increases and time can be restored by Board vote.

Professional Service Contract Awards:

Up to \$100,000 and one year with a firm; or up to \$50,000 and one year with an individual.

Non-Professional Service Contract Awards:

Up to \$250,000 if a competitive procurement process has been conducted, or up to \$100,000 if a procurement process other than a competitive process has been conducted.

Purchase or Lease of Equipment, Materials or Supplies:

Up to \$1 million if the award is to the lowest bidder; or up to \$500,000 if the award is to other than the lowest bidder.

Amendments:

Up to 25% of the original contract amount or \$250,000, whichever is less, and for a term not exceeding an aggregate of six months.

Amendments to the Position Control Register:

Amendments which result only in a change in cost center.

**BUDGET/FISCAL IMPACT:**

Recommendations for delegated authority approval include information on the budget/fiscal impact related to the action. For items funded through the capital budget, dollars are measured against the approved capital budget. If the dollars are in excess of the amount authorized in the budget, the amount will be covered within the five-year CIP spending cap. For items funded through the Current Expense Budget, variances are reported monthly and year-end projections are prepared at least twice per year. Staff review all variances and projections so that appropriate measures may be taken to ensure that overall spending is within the MWRA budget.

CONSTRUCTION/PROFESSIONAL SERVICES DELEGATED AUTHORITY ITEMS APRIL 1 - 30, 2016

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMEND/CO	COMPANY	FINANCIAL IMPACT
C-1.	04/06/16	<b>GROUNDSKEEPING SERVICES DEER ISLAND TREATMENT PLANT</b> AWARD OF CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR GROUNDSKEEPING SERVICES AT THE DEER ISLAND TREATMENT PLANT FOR A TERM OF 730 CALENDAR DAYS.	5552	AWARD	LEAHY LANDSCAPING, INC.	\$196,600.00
C-2.	04/13/16	<b>SPOT POND WATER STORAGE FACILITY DESIGN/BUILD PROJECT</b> FURNISH AND INSTALL A 160-FOOT STEEL MICROWAVE RADIO COMMUNICATION TOWER IN LIEU OF THE SPECIFIED 92-FOOT TOWER; EXTEND THE CONTRACT TERM BY 127 CALENDAR DAYS FROM AUGUST 15, 2015 TO DECEMBER 20, 2015.	6457	15	WALSH CONSTRUCTION COMPANY	\$227,837.72
C-3.	04/26/16	<b>MWRA NUT ISLAND EMERGENCY DEMOLITION AND DUCT CLEANING</b> FURNISH AND INSTALL AN EMERGENCY ACCESS OPENING IN THE ODOR CONTROL ROOM ROOF; REPAIR DAMAGED SHEET METAL AND FIBERGLASS REINFORCED PLASTIC DUCTWORK AND DRAIN AND SAMPLE PORT PIPING CONNECTIONS ON THE ODOR CONTROL AND HVAC SYSTEMS; REMOVE/REPLACE 40-FEET OF SUPPLY AIR DUCTWORK AND 60-FEET OF EXHAUST AIR DUCTWORK; EXTEND THE CONTRACT TERM BY 33 CALENDAR DAYS FROM MARCH 20, 2016 TO APRIL 22, 2016.	OP-320	1	DANIEL O'CONNELL'S SONS	\$128,722.92
C-4.	04/29/16	<b>DIESEL GENERATOR MAINTENANCE JOHN J. CARROLL WATER TREATMENT PLANT</b> DECREASE ESTIMATED QUANTITIES FOR MAINTENANCE REPAIR SERVICES, REPLACEMENT PARTS, MARK-UP ON REPLACEMENT PARTS; FACTORY SERVICE REPRESENTATIVE.	OP-231	1	WELD POWER SERVICE COMPANY, INC.	(\$34,616.27)
C-5.	04/29/16	<b>RENEWABLE AND ALTERNATIVE ENERGY PORTFOLIO SERVICES</b> AWARD OF CONTRACT TO DCAM SELECTED VENDOR FOR RENEWABLE AND ALTERNATIVE ENERGY PORTFOLIO SERVICES FOR A TERM OF 12 MONTHS.	RPS-60	AWARD	ENERGY ROI, LLC	\$99,100.00
C-6.	04/29/16	<b>HVAC SYSTEMS MAINTENANCE</b> AWARD OF CONTRACT TO LOWEST RESPONSIVE BIDDER TO PROVIDE PREVENTIVE MAINTENANCE AND REPAIR SERVICES FOR THE HVAC SYSTEMS MAINTENANCE AT THE JOHN J. CARROLL WATER TREATMENT PLANT AND 31 OTHER LOCATIONS IN WESTERN OPERATIONS FOR A TERM OF 730 CALENDAR DAYS.	OP-321	AWARD	US AIR CONDITIONING-HEATING, INC.	\$457,400.00



## PURCHASING DELEGATED AUTHORITY ITEMS - April 1 - 30, 2016

NO.	TITLE AND EXPLANATION	CONTRACT #	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-1.	4/4/16 <b>SUPPLY AND DELIVERY OF ULTRA-LOW-SULFUR, #2 DIESEL FUEL</b> AWARD OF A PURCHASE ORDER FOR THE SUPPLY AND DELIVERY OF UP TO 210,000 GALLONS OF ULTRA-LOW-SULFUR, #2 DIESEL FUEL FOR THE DEER ISLAND THERMAL/POWER PLANT.	ENE40		DENNIS K. BURKE INC.	\$294,000.00
P-2.	4/7/16 <b>MANUAL INVASIVE AQUATIC PLANT REMOVAL</b> AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR MANUAL INVASIVE AQUATIC PLANT REMOVAL AT THE MWRA WARE RIVER-SHAFT 8 INTAKE POOL, 2016 SEASON.	WRA-4180		AQUALOGIC, INC.	\$26,200.00
P-3.	4/7/16 <b>TWO SUBMERSIBLE EJECTOR PUMPS AND ONE CONTROL STATION</b> AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR TWO SUBMERSIBLE EJECTOR PUMPS AND ONE CONTROL STATION FOR THE DEER ISLAND TREATMENT PLANT. THE TWO EXISTING SUBMERSIBLE EJECTOR PUMPS WHICH ARE LOCATED IN THE GAS HANDLING GALLERIES AT THE DEER ISLAND TREATMENT PLANT WERE INSTALLED IN THE MID 1990'S. THE EXISTING PUMPS ARE APPROACHING THE END OF THEIR USEFUL LIFE AND REPLACEMENT PARTS ARE NO LONGER AVAILABLE FROM THE ORIGINAL EQUIPMENT MANUFACTURER (OEM) OR THROUGH THIRD PARTY VENDORS. OVER THE NEXT TWO YEARS, DEER ISLAND STAFF PLAN TO REPLACE AN ADDITIONAL EIGHT EJECTOR CONTROL STATIONS (INCLUDING PUMPS) AT THE MODULE NO. 1 AND MODULE NO. 2 DIGESTER.	WRA-4189Q		INDUSTRIAL PUMP SALES & SERVICE, INC.	\$26,450.00
P-4.	4/7/16 <b>SEVEN GAS MONITORING UNITS, ASSOCIATED CALIBRATION AND CHARGING EQUIPMENT</b> AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR SEVEN GAS MONITORING UNITS, CALIBRATION AND CHARGING EQUIPMENT FOR THE EMERGENCY SERVICES UNIT. IN ACCORDANCE WITH THE NEWLY IMPLEMENTED DRINKING WATER QUALITY CONSEQUENCE MANAGEMENT PROGRAM, PORTABLE GAS MONITORING UNITS ARE REQUIRED TO BOTH CHARACTERIZE NORMAL BACKGROUND AIR QUALITY AT EACH OF THE S:CAN/SPARKY SAMPLE SITES, AND MONITOR FOR POSSIBLE HAZARDOUS ATMOSPHERES IN RESPONSE TO A WATER QUALITY CONTAMINATION EVENT. AS PART OF THE CONSEQUENCE MANAGEMENT PROGRAM, RESPONSE ACTIVITIES WILL BE SHARED BY AND COORDINATED BETWEEN ROUTINE WATER QUALITY SAMPLING STAFF AND THE EMERGENCY SERVICES UNIT (ESU) SITE CHARACTERIZATION TEAM. THE ESU HAS USED AN OLDER VERSION OF THESE UNITS AS PART OF ITS SITE CHARACTERIZATION PROTOCOL FOR SEVERAL YEARS. HOWEVER, THESE OLDER MONITORS HAVE REQUIRED CONSTANT MAINTENANCE AND ARE NO LONGER SUPPORTED BY THE MANUFACTURER, RAE SYSTEMS. THE NEW GAS MONITOR MODEL TO BE PURCHASED, MULTIRAE, IS THE MOST ADVANCED PORTABLE CHEMICAL DETECTOR ON THE MARKET.	WRA-4190Q		ENERSAFE, INC.	\$27,225.50
P-5.	4/7/16 <b>ONE VERTICAL MILLING MACHINE</b> AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR ONE VERTICAL MILLING MACHINE FOR THE DEER ISLAND TREATMENT PLANT. TO REPLACE ANTIQUATED VERTICAL MILLING MACHINE INSTALLED UNDER THE BOSTON HARBOR PROJECT IN 1994. THIS MACHINE IS PAST ITS USEFUL SERVICE LIFE AND IS IN A CONSTANT STATE OF DISREPAIR. IN ADDITION, THE COMPUTER CONTROLS FOR THIS MACHINE ARE OUTDATED AND INSUFFICIENT FOR THE VOLUME OF WORK PERFORMED BY THE MACHINE SHOP. EFFICIENCY IMPROVEMENTS PROVIDED BY THE NEW MILLING MACHINE WILL SAVE STAFF TIME BY PROMPTING STAFF TO CONFIRM DATA INPUTS (MEASURE TWICE-CUT ONCE), IMPROVING CUTTING PRECISION AND REDUCING PROGRAMMING TIME.	WRA-4193Q		RICE MACHINERY, INC.	\$44,000.00
P-6.	4/7/16 <b>THREE NEW 20-TON TILT TRAILERS</b> AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THREE NEW 20-TON TILT TRAILERS FOR GROUNDS MAINTENANCE WEST. GROUNDS MAINTENANCE WEST IS RESPONSIBLE FOR THE GROUNDS KEEPING AND LANDSCAPING OF 19 WESTERN LOCATIONS AND 73 MILES OF AQUEDUCTS. IN ORDER TO ACCOMPLISH THIS, TRACTORS OUTFITTED WITH "SLOPEMASTER" MOWING ARMS OR TOW-BEHIND MOWING DECKS, AS WELL AS RIDER AND WALK-BEHIND MOWERS ARE MOBILIZED THROUGHOUT THE AREA ON FLATBED TRAILS. WRA-286, WRA-309 AND WRA-370 ARE 11-YEAR-OLD, 20 -TON TRAILERS USED TO TRANSPORT THIS EQUIPMENT. REPLACEMENT CRITERIA FOR THIS TYPE OF TRAILER REQUIRES THE TRAILER TO BE AT LEAST 10 YEARS OLD. ALL OF THESE TRAILERS MEET OR EXCEED THE ESTABLISHED CRITERIA. TO ENSURE UNINTERRUPTED SERVICE AND MAXIMUM RELIABILITY AND AVAILABILITY, STAFF RECOMMENDED THAT ALL THREE TRAILERS BE REPLACE WITH WIDE-WIDTH, 20-TON-TILT DECK TRAILERS.	WRA-4182		SUMMA HUMMA ENTERPRISES, LLC DBA MB TRACTOR & EQUIPMENT	\$63,171.00
P-7.	4/20/16 <b>TWO MUFFIN MONSTER IN-LINE SEWAGE GRINDERS</b> AWARD OF A SOLE SOURCE PURCHASE ORDER FOR TWO MUFFIN MONSTER IN-LINE SEWAGE GRINDERS FOR THE RESIDUALS COMPLEX AT THE DEER ISLAND TREATMENT PLANT. MUFFIN MONSTER SEWAGE GRINDERS ARE MANUFACTURED BY JWC ENVIRONMENTAL IN SANTA ANA, CALIFORNIA. JWC ENVIRONMENTAL HOLDS EXCLUSIVE PATENTS FOR THE MANUFACTURE AND DISTRIBUTION OF ITS GRINDERS WHICH ARE ONLY AVAILABLE THROUGH THEIR EXCLUSIVE REPRESENTATIVE, AQUA SOLUTIONS, INC.			JWC ENVIRONMENTAL	\$38,816.00
P-8.	4/20/16 <b>30 GLASS-LINED PLUG VALVES</b> AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR 30 GLASS-LINED PLUG VALVES FOR THE DEER ISLAND TREATMENT PLANT. THE PRIMARY SLUDGE LINES AT THE DEER ISLAND TREATMENT PLANT CARRY PUMPED SETTLED SOLIDS, OR SLUDGE, FROM THE PRIMARY TANKS TO THE RESIDUALS COMPLEX FOR THICKENING, DIGESTION, AND FINAL PUMPING TO THE PELLETIZING PLANT IN QUINCY. OVER TIME SOLIDS AND GRIT CONTAINED IN THE SLUDGE ERODE THE INTERIOR GLASS LINING OF THE PIPING AND FITTINGS, PARTICULARLY AT THE BENDS AND VALVES. RUST AND CORROSION CAN LEAD TO THE VALVE NOT ISOLATING PROPERLY, RESULTING IN POSSIBLE LEAKS. CURRENTLY, THERE ARE APPROXIMATELY 25 GLASS-LINED PLUG VALVES THAT WERE ORIGINALLY INSTALLED UNDER THE BOSTON HARBOR PROJECT THAT NO LONGER PROVIDE LEAK-FREE ISOLATION. STAFF RECOMMENDED THAT ALL 25 BE REPLACED AND THAT AN ADDITIONAL FIVE PLUG VALVES BE PURCHASED AS SPARES TO HAVE ON HAND FOR AS-NEEDED REPLACEMENTS.	WRA-4174		ATLANTIC FLUID TECHNOLOGY, LLC	\$101,850.00

NO.	TITLE AND EXPLANATION	CONTRACT #	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-9. 4/26/16	<p><b>TWO GRAPHITE FURNACE ATOMIC ABSORPTION SPECTROMETERS FOR LEAD ANALYSES</b></p> <p>AWARD OF A SOLE SOURCE PURCHASE ORDER FOR THE PURCHASE OF TWO GRAPHITE FURNACE ATOMIC ABSORPTION (GFAA) SPECTROMETERS FOR THE DEPARTMENT OF LABORATORY SERVICES. THE DEPARTMENT OF LABORATORY SERVICES (DLS) SUPPORTS THE LABORATORY TESTING PROGRAMS OF SEVERAL CLIENT GROUPS THROUGHOUT THE OPERATIONS DIVISION. DLS HAS BEEN ASKED TO SUPPORT A SPECIAL PROJECT, BEGINNING AS EARLY AS POSSIBLE BEFORE THE END OF THIS SCHOOL YEAR, TO TEST DRINKING WATER SAMPLES IN ALL SCHOOLS THAT RECEIVE MWRA DRINKING WATER. THE PROJECT WILL WORK IN CONCERT WITH THE COMMONWEALTH OF MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION INITIATIVE TO SAMPLE DRINKING WATER FOUNTAINS AND FOOD PREPARATION FAUCETS IN PUBLIC SCHOOLS ACROSS THE STATE. PURCHASING THE NEW INSTRUMENTS FROM THE EXISTING VENDOR WILL ALLOW DLS TO MINIMIZE TRAINING TIME AND ACCELERATE THE INCREASE IN ITS CAPACITY TO MANAGE A SIGNIFICANT INFLUX OF DRINKING WATER SAMPLES. AT THE END OF THIS SPECIAL PROJECT, THE TWO GFAA INSTRUMENTS WILL REPLACE TWO EXISTING GFAA INSTRUMENTS THAT ARE 13 AND 14 YEARS OLD.</p>			PERKIN ELMER HEALTH SCIENCES, INC.	\$93,186.00
P-10. 4/27/16	<p><b>SUB BASE GRAVEL BURROW</b></p> <p>AWARD OF A TWO-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY AND DELIVERY OF SUB BASE GRAVEL BORROW (STATE MIX). EACH YEAR, MWRA'S WATER PIPELINE UNIT REPLACES AN AVERAGE OF 20 MAIN LINE VALVES AND 10 BLOW-OFF VALVES THROUGHOUT THE WATER DISTRIBUTION SYSTEM. VALVE REPLACEMENT AND LEAK REPAIR WORK REQUIRED EXCAVATION AND SUBSEQUENT BACKFILL WITH 3/4-INCH CRUSHED STONE TO THE SPRING LINE (CENTER LINE) OF THE PIPE. THE EXCAVATION IS THEN BACKFILLED TO THE SURFACE (ALLOWING APPROPRIATE SPACE FOR ASPHALT PAVING) WITH SUB-BASE GRAVEL BORROW, COMMONLY REFERRED TO AS "STATE MIX." BID WRA-4201Q IS FOR A TWO-YEAR CONTRACT TO SUPPLY AND DELIVER STATE MIX MATERIAL TO MWRA'S CHELSEA FACILITY ON AN AS-NEEDED BASIS. PIPELINE CREWS LOAD THE MIX ONTO MWRA TRUCKS AND DELIVER THE MATERIAL TO THE VARIOUS WORK SITES AS REQUIRED.</p>	WRA-4201Q		M. SUSI HMA, LLC	\$51,800.00

## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** May 11, 2016  
**SUBJECT:** FY16 Financial Update and Summary



COMMITTEE: Administration, Finance & Audit

INFORMATION

VOTE

  
Kathy Som, Budget Director  
Preparer/Title

  
Thomas J. Durkin  
Director, Finance

### RECOMMENDATION:

For information only. This staff summary provides the financial update and variance highlights through April, comparing actual spending to the budget and a year-end projection for the Current Expense Budget.

### DISCUSSION:

Total year-to-date expenses are lower than budget by \$5.2 million or 0.9% due to lower direct expenses of \$3.7 million, indirect expenses of \$605,000, \$874,000 for the receipt of Debt Service Assistance in April, and higher revenues of \$2.9 million or 0.5% for a total variance of \$8.1 million.

In April, \$1.1 million was transferred to the Defeasance Account as result of continued low variable rate environment, the effect of last year's reserves release, and the timing of new money borrowing which brought the defeasance account balance to \$18.2 million. Should these favorable trends continue, the defeasance account is projected at \$27.6 million by fiscal year-end. Without the transfer of the \$18.2 million in debt service savings to the Defeasance Account, the total year-to-date budget variance through April would have been \$26.3 million.

Beyond debt service savings, staff project a surplus of approximately \$9.2 million at year-end of which \$4.6 million is for direct expenses, mainly due to conservative budgeting for wages and utilities both of which are lower than anticipated, offset by higher maintenance expenses associated with the Nut Island fire incident, \$704,000 for Indirect expenses, \$874,000 for the receipt of Debt Service Assistance in April, and revenues of \$3.0 million.

In a separate staff summary to the Board today, staff is asking for authorization from the Board to increase the planned defeasance amount in FY16 from \$25.0 million to \$30.0 million, which will be built into the FY17 budget, providing further rate relief mostly during FY20-22.

*Please refer to Attachment 4 for a more detailed year-end projection by line item.*

The expense variances by major categories are presented in the table below:

	FY16 Budget YTD	FY16 Actual YTD	\$ Variance	% Variance
Direct Expenses	\$177.3	\$173.6	-\$3.7	-2.1%
Indirect Expenses	\$35.7	\$35.1	-\$0.6	-1.7%
Debt Service	\$351.4	\$350.5	-\$0.9	-0.2%
<b>Total</b>	<b>\$564.5</b>	<b>\$559.3</b>	<b>-\$5.2</b>	<b>-0.9%</b>

The major variances through April by categories were:

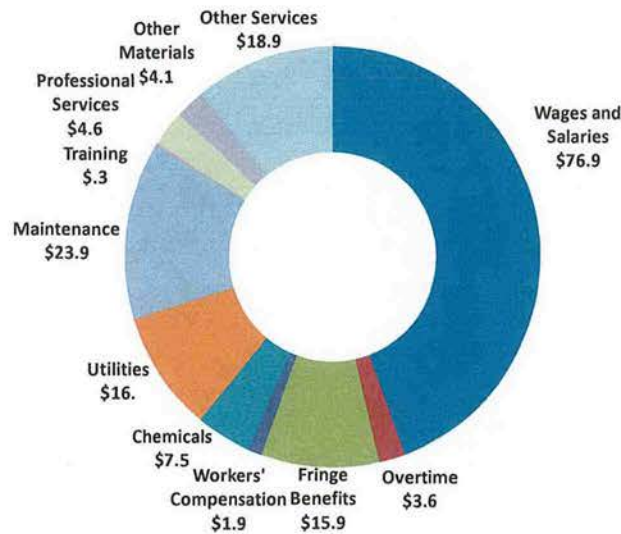
- Lower Direct Expenses of \$3.7 million for Utilities, Wages and Salaries, Chemicals, Other Services, Fringe Benefits, and Workers' Compensation. This is offset by higher spending for Maintenance, Other Material, and Overtime.
- Lower Indirect Expenses of \$605,000 for lower Watershed reimbursements; lower HEEC capacity charges; and lower insurance costs, mostly for premiums.
- Receipt of unbudgeted Debt Service Assistance of \$873,804.
- Revenues exceeded budget by \$2.9 million due to higher non-rate revenue related to higher than expected TRAC penalty fees, unbudgeted water revenues for the City of Lynn and Cambridge, US Treasury bond proceeds arbitrage rebate and energy rebates.

Please refer to Attachment 1 for a more detailed comparison by line item.

**Direct Expenses**

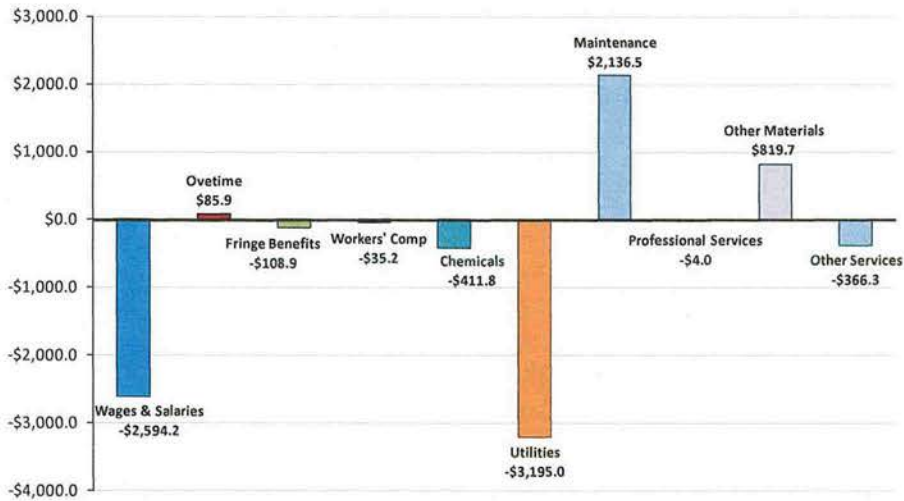
Year-to-date direct expenses totaled \$173.6 million, \$3.7 million or 2.1% less than budgeted.

**FY16 Direct Expenses-YTD  
(in millions)**



The underspending on direct expenses is related to Utilities, Wages and Salaries, Chemicals, Other Services, Fringe Benefits, Workers' Compensation, Training and Meetings, and Professional Services; offset by overspending for Maintenance, Other Materials, and Overtime.

**FY16 Direct Expense Variance  
(in 000's)**



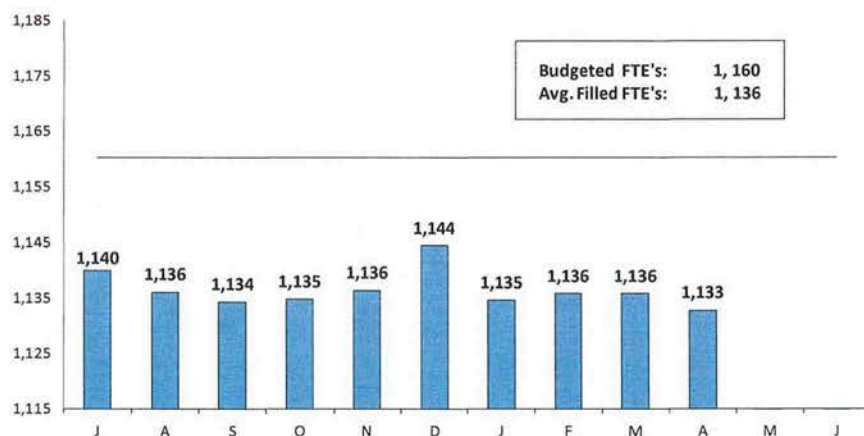
## Utilities

Utilities were underspent \$3.2 million or 16.6% for lower Electricity of \$2.0 million mainly due to underspending at Deer Island of \$1.6 million for lower commodity and transmission and distribution costs, lower flows which resulted in less pumping demand, and an over accrual at the end of FY15. Diesel Fuel spending is under budget by \$1.1 million for both lower pricing and less usage due to the relatively mild winter.

## Wages and Salaries

Wages and Salaries were underspent by \$2.6 million or 3.3% mainly as a result of lower average Full Time Equivalent positions (FTEs) than budgeted and the timing of backfilling vacant positions and the salary mix differential between staff retiring and new hires. The average FTEs through April were 1,136, which was 24 positions lower than the 1,160 FTEs budgeted. Additionally, the Authority had two temporary employees.

**FY16 MWRA Full Time Equivalent (FTE) Position Trend**

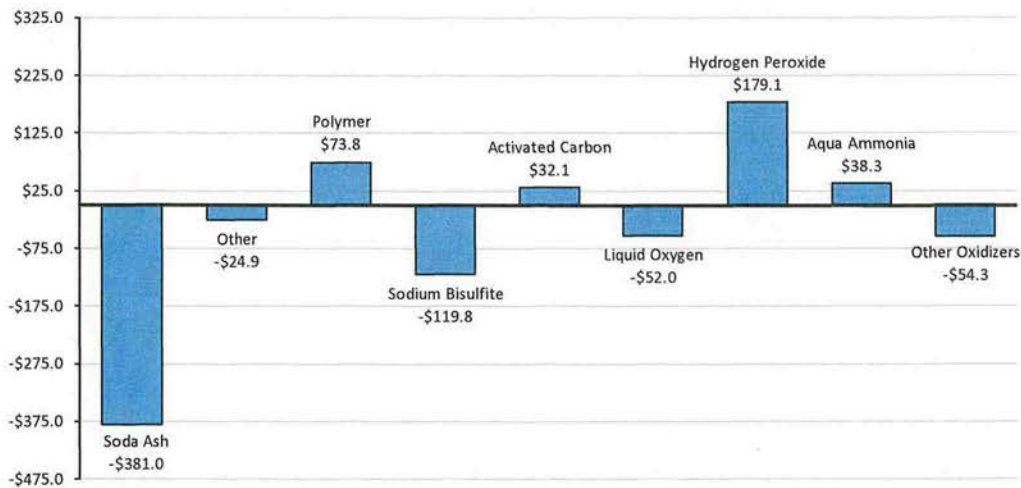


Through April 2016, the Authority had 1,143 filled positions vs. 1,170 budgeted positions.

## Chemicals

Chemical expenses were lower than budgeted by \$412,000 or 5.2% year-to-date mainly due to lower than budgeted spending on Soda Ash of \$381,000 due to lower usage to meet corrosion control targets and timing of deliveries for Soda Ash; Sodium Bisulfite of \$120,000 due to lower usage at the Carroll Water Treatment Plant due to UV disinfection and timing of deliveries at DITP and lower plant flows; Other Oxidizers of 54,000 due to less usage than planned and lower pricing for the new contract; and Ozone of \$52,000 due to higher water quality and change in operating target resulting from UV disinfection. The underspending is offset by overspending on Hydrogen Peroxide of \$179,000 due to increased need for pretreatment of hydrogen sulfide gas due to plant flows; and Polymer of \$74,000.

### FY16 Chemical Expense Variances (in 000's)



#### Other Services

Other Services spending was lower than budget by \$366,000 or 1.9% due to lower spending of \$189,000 for sludge pelletization services for lower year to date inflation; \$116,000 for Space Lease Rentals for the Chelsea facility lease due to an overpayment of escrow for insurance; \$76,000 for Grit and Screenings disposal services primarily due to lower quantities; and \$72,000 for Other Rentals. The underspending is offset by higher spending on Telephone Services of \$68,000 associated with Field Operations SCADA lines for the water and wastewater facilities both for more lines and technology change; Other Services of \$58,000 for Ward Street Headworks radio tower demolition and Membership/Dues/Subscriptions of \$32,000 due to timing.

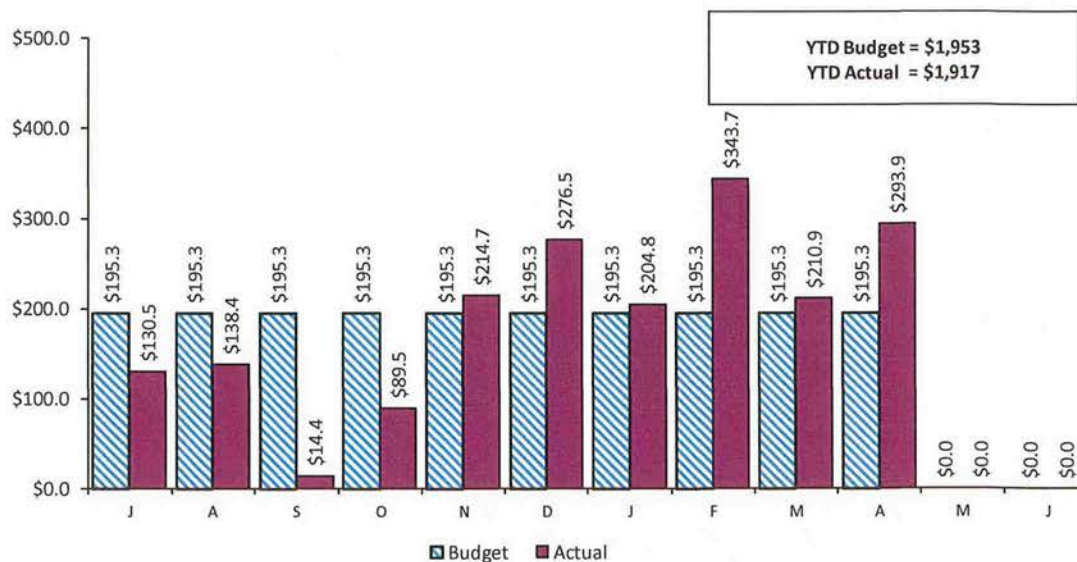
#### Fringe Benefits

Fringe Benefits spending was lower than budgeted by \$109,000 or 0.7% for Health Insurance of \$154,000 and Dental Insurance of \$53,000 due to fewer than budgeted filled positions. This was offset by higher spending in Medicare costs of \$34,000, Unemployment Insurance of \$25,000 and Tuition Reimbursement of \$22,000.

#### Workers' Compensation

Workers' Compensation expenses were lower than budget by \$35,000 or 1.8% based on lower compensation payments of \$135,000, offset by higher medical and other expenses of \$100,000. In April, actual spending was \$99,000 over budget. It is important to note that spending on this line item can change significantly depending on future claims and severity of cases.

### FY16 Workers' Compensation Spending (in 000's)



# of Open Claims-Lost Time	62	61	62	62	63	58	64	68	62	61	0	0
# of Open Claims-Medical Only	22	17	23	23	23	21	26	21	16	18	0	0

#### Maintenance

Maintenance expenses were higher than budgeted by \$2.1 million or 9.8% year-to-date mostly due to \$1.7 million associated with the remediation effort for the Nut Island fire incident. Approximately \$637,000 overspending is attributed to more than planned energy efficiency projects.

#### Other Materials

Other Materials were higher than budget by \$820,000 or 25.4% mainly due to the timing of Vehicle Purchases of \$879,000; Lab and Testing Supplies of \$68,000 mainly due to receipt of equipment ordered in FY15 and received in the first Quarter of FY16; Equipment/Furniture of \$58,000; Health and Safety of \$39,000; and Computer Hardware of \$33,000. The overspending is offset by lower spending for Vehicle Expenses of \$323,000 mostly due to lower fuel prices.

#### Overtime

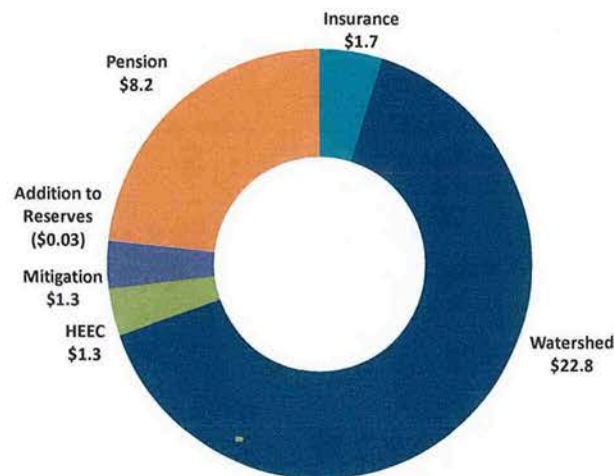
Overtime was higher than budget by \$86,000 or 2.5% for greater spending in Water Valve Maintenance to reconfigure system flows associated with providing Lynn water, responding to a Cambridge water main break, start-up at Spot Pond, Treatment and Transmission Operation for half plant maintenance at Carroll Water Treatment Plant, and in Field Operations in response to the Nut Island fire. This is offset by fewer wet weather events and shutdowns related to the North Main Pump Station valve replacement project.



## Indirect Expenses

Through April Indirect expenses total \$35.1 million, \$605,000 or 0.2% lower than budget. The majority of the FY16 underspending is related to lower Watershed Reimbursement of \$456,000 for FY15 over accrual and projected FY16 underspending; lower HEEC Agreement cost of \$146,000 due to timing of payments versus budget; and lower Insurance costs of \$101,000 mostly related to premiums. This is offset by higher spending of \$99,000 for Winthrop and Quincy mitigation, due to finalizing the agreements after the budget was developed.

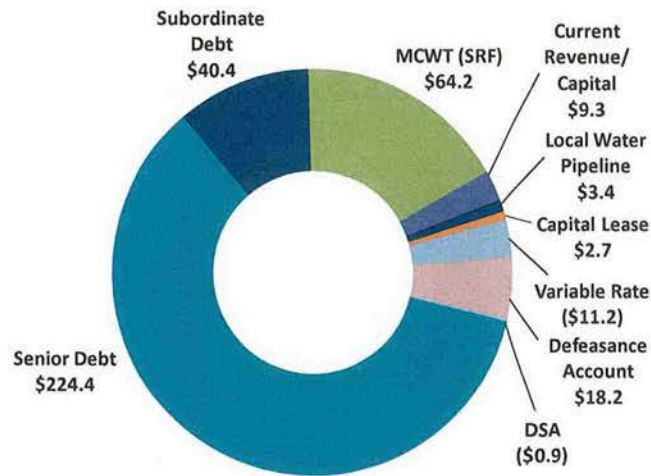
**FY16 Indirect Expenses-YTD  
(in millions)**



## **Debt Service Expenses**

Debt Service expenses include the principal and interest payment for fixed debt, the variable subordinate debt, and the Massachusetts Clean Water Trust (MCWT) obligation, the commercial paper program for the local water pipeline projects, current revenue for capital, and the Chelsea facility lease payment.

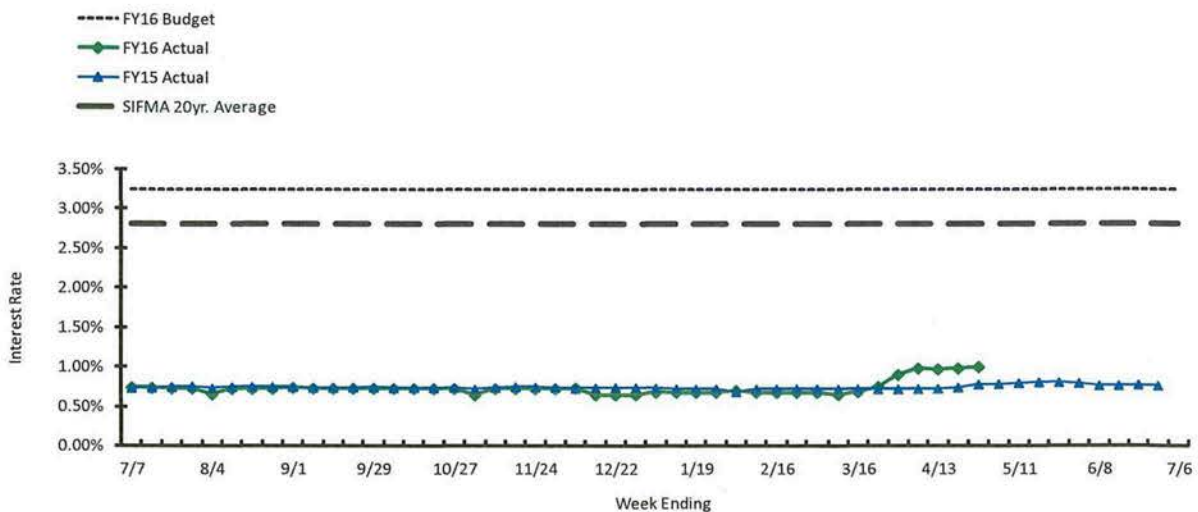
### FY16 Debt Expenses-YTD (in millions)



Debt Service expenses through April totaled \$350.5 million, \$874,000 or 0.2% lower than budget for Debt Service Assistance received in April after the transfer of \$18.2 million of a favorable year-to-date variance to the Defeasance Account. The short-term rates related variance is \$11.2 million year-to-date. Additionally, the Authority recognized \$7.6 million in year-to-date underspending that is the result of the favorable impact of defeasances related to reserve releases and for not borrowing senior debt scheduled for November.

The graph below reflects the FY16 actual variable rate trend by month over the past year and the FY16 Budget.

### Weekly Average Interest Rate on MWRA Variable Rate Debt (Includes liquidity support and remarketing fees)



## Revenue

Revenue for year to date through April totaled \$585.3 million which was \$2.9 million or 0.5% higher than budget.

The higher non-rate Revenue is due to Other Revenue of \$2.9 million of which, \$593,000 is for City of Lynn MWRA water use while they completed maintenance work on their water system, \$610,000 for TRAC Penalties mainly attributed to a large settlement with a company who had a series of discharge violations to the MWRA sewer, which since then has been addressed and corrective measures were implemented; Cambridge water use of \$325,000 related to maintenance work on their water system and electricity peak shaving; US Treasury rebate of \$296,000; energy rebates of \$291,000; higher surplus equipment sales of \$255,000, and greater Investment Income of \$461,000.

Investment Income is over budget by \$461,000, due to higher than budgeted short-term interest rates.

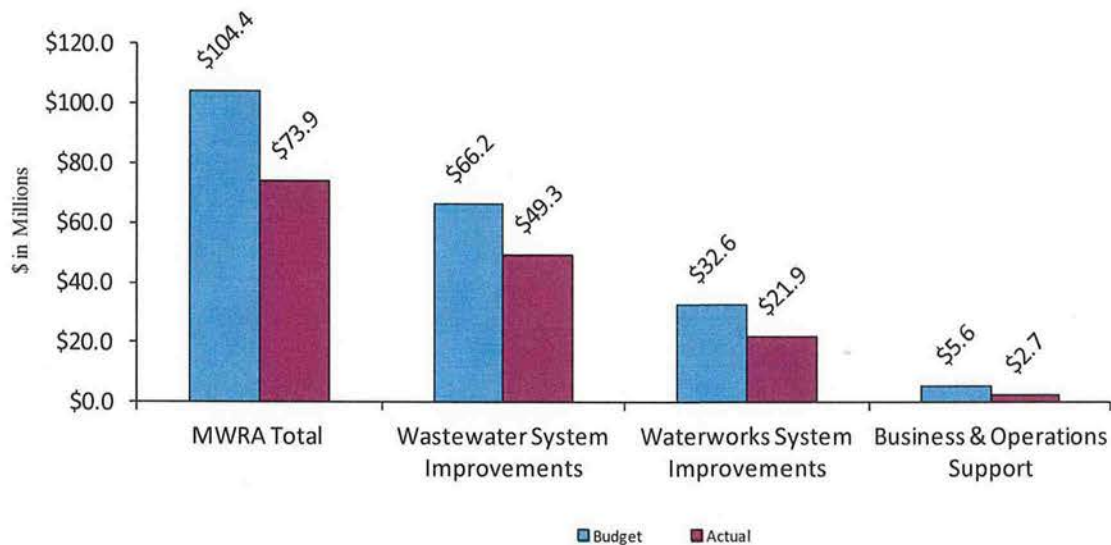
Please refer to Attachment 2 for a more detailed comparison by line item.

## FY16 Capital Improvement Program

Spending year-to-date in FY16 totals \$73.9 million, \$30.5 million or 29.2% below budget. After accounting for programs which are not directly under MWRA's control, most notably the Inflow and Infiltration (I/I) program, the Local Water Pipeline program, and the community managed Combined Sewer Overflow (CSOs) projects, underspending totals \$27.4 million or 34.4%. Underspending was reported across all three programs with Wastewater underspent by \$16.9 million, Waterworks posting underspending of \$10.7 million and Business and Operations Support and \$2.9 million, respectively.

Spending By Program:

**FY16 CIP Spending  
Year-To-Date April**



\$ in Millions	Budget	Actuals	\$ Var.	% Var.
<b>Wastewater System Improvements</b>				
Interception & Pumping	12.7	4.5	-8.2	-64.9%
Treatment	28.5	20.8	-7.7	-26.9%
Residuals	0.0	0.0	0.0	N/A
CSO	12.3	13.9	1.6	13.2%
Other	12.7	10.0	-2.6	-20.6%
<b>Total Wastewater System Improvements</b>	<b>\$66.2</b>	<b>\$49.3</b>	<b>-\$16.9</b>	<b>-25.5%</b>
<b>Waterworks System Improvements</b>				
Drinking Water Quality Improvements	5.6	6.4	0.9	15.7%
Transmission	12.5	4.2	-8.3	-66.5%
Distribution & Pumping	12.4	12.3	-0.1	-0.9%
Other	2.1	-1.1	-3.2	-149.7%
<b>Total Waterworks System Improvements</b>	<b>\$32.6</b>	<b>\$21.9</b>	<b>-\$10.7</b>	<b>-32.9%</b>
<b>Business &amp; Operations Support</b>	<b>\$5.6</b>	<b>\$2.7</b>	<b>-\$2.9</b>	<b>-51.4%</b>
<b>Total MWRA</b>	<b>\$104.4</b>	<b>\$73.9</b>	<b>-\$30.5</b>	<b>-29.2%</b>

The main reasons for the program variances in order of magnitude:

**Waterworks Transmission:** Net underspending of \$8.3 million reflects the combination of underspending for Long Term Redundancy of \$7.1 million due to lower than budgeted award and schedule change for Wachusett Aqueduct Pump Station and ongoing alternatives review for metropolitan redundancy, and Watershed Land of \$1.1 million due to the timing of land acquisitions, and Sudbury/Weston Aqueduct Repairs of \$309,000 due to timing. Partially, offset by Hatchery Pipeline Construction of \$189,000 due to contractor progress and Design/Engineering Services During Construction/Resident Engineer Inspection of \$162,000 due to consultant progress and scope changes.

**Interception & Pumping:** Underspending of \$8.2 million reflecting underspending on Chelsea Creek Upgrades - Construction of \$4.0 million and Caruso Pump Station Improvements Construction of \$760,000 due to schedule changes, Alewife Brook Pump Station Rehab Final Design/CA/REI and Construction of \$2.4 million and Chelsea Creek Screen House Upgrades of \$770,000 both due to timing, and other smaller projects totaling \$764,000. Partially offset by overspending at Nut Island Headworks Electric, Grit & Screenings Conveyance Design and Construction of \$233,000 due to timing and Nut Island System-wide Odor Control – Evaluation of \$217,000 due to progress.

**Wastewater Treatment:** Underspending of \$7.7 million reflects underspending on Electric Equipment Upgrade – Construction 4 of \$3.1 million, North Main Pump Station VFD Replacement of \$1.7 million, As-Needed Design 7-2 and 7-3 of \$1.0 million, Thermal Power Plant Boiler Control Replacement of \$487,000, Digester Sludge Pump Replacement Phase 2 of \$407,000, Power System Improvements – Construction of \$267,000, and Fire Alarm System Replacement – Design of \$228,000 due to timing. Barge Berth and Facility Replacement of \$600,000 and Winthrop Terminal Facility VFD Replacement of \$573,000 Gravity Thickening Rehabilitation of \$383,000, Combined Heat & Power Design of \$250,000 due to schedule changes, Steam Turbine Generator System Modifications Construction of \$450,000 due to energy efficiency rebate, Clinton Wastewater Treatment Plant of \$254,000, and other smaller projects totaling \$337,000. Partially offset by overspending on Butterfly Valve Replacement of \$1.7 million, Secondary Reactor VFDs of \$391,000, and HVAC Equipment Replacement Design/Engineering Services During Construction of \$280,000 due to timing.

**Waterworks Other:** Underspending of \$3.2 million due to lower community requests for Local Water System Loans of \$2.6 million, and Quabbin Power Communication and Security Construction of \$339,000 and Waterworks Facility Asset Protection of \$325,000 both due to schedule shifts.

**Business and Operations Support:** Underspending of \$2.9 million due to lower than budgeted spending on MIS-related projects of \$1.7 million due to timing of IT Strategic Plan implementation, \$628,000 due to lower than projected use of as-needed technical assistance contracts, and Security Equipment of \$597,000 due to delay in award of equipment contracts.

**Wastewater Other:** Underspending of \$2.6 million primarily due to less than anticipated community requests for grants and loans under the Infiltration and Inflow (I/I) program.

**Combined Sewer Overflow: (CSO)** Net overspending of \$1.6 million due to \$3.2 million in overspending at Cambridge Sewer Separation due to water use during construction and updated cost estimates due to unforeseen utility locations and private utility coordination, subsurface conditions, and additional engineering services during construction, partially offset by Reserved Channel Sewer Separation of \$969,000 due to updated cost estimates, MWR003 Gate & Siphon of \$505,000, and South Dorchester Bay Sewer Separation (Commercial Point) of \$125,000 due to timing.

**Drinking Water Quality Improvements:** Overspending of \$0.9 million due to Existing Facilities CP-7 of \$897,000, Spot Pond Storage Facility Design/Build of \$299,000, Spot Pond Storage Facility Owners' Representative of \$229,000, and Carroll Water Treatment Plant's Ultraviolet Disinfection - Design/Engineering Services During Construction/Resident Engineer Inspection of \$161,000 due to timing, and Brutsch Treatment Facility of \$344,000 reflecting additional construction administration and resident engineering services. Offset by Carroll Water Treatment Plant's Ultraviolet Disinfection Construction of \$952,000 due to litigation settlement.

**Water Distribution and Pumping:** Overspending nearly matched underspending within this program. Overspending on Weston Aqueduct Supply Mains Section 36/C/S9-A11 Valve of \$1.4 million due to contractor progress, Southern Extra High Redundancy & Storage Final Design/CA/RI of \$416,000 due to timing, and other projects totaling \$116,000. Offset by WASM 3 - MEPA/Design/CA/RI underspending of \$796,000 due to ongoing alternatives review for metropolitan redundancy, NIH Redundancy & Storage of \$754,000 due to lower than budgeted award and schedule change for Section 89/29 Redundancy Construction Phase 1B resulting in underspending of \$1.0 million, and Valve Replacement of \$488,000 due to timing.

### **Construction Fund Balance**

The construction fund balance is now at \$71.4 million for April. Commercial Paper available for construction projects is \$201 million.

Attachment 1 – Variance Summary April 2016

Attachment 2 – Current Expense Variance Explanations

Attachment 3 – Capital Improvement Program Variance Explanations

Attachment 4 – FY16 Budget vs. FY16 Projections

ATTACHMENT 1

	April 2016 Year-to-Date					
	Period 10 YTD Budget	Period 10 YTD Actual	Period 10 YTD Variance	%	FY16 Approved	% Expended
<b>EXPENSES</b>						
WAGES AND SALARIES	\$ 79,516,773	\$ 76,922,573	\$ (2,594,200)	-3.3%	\$ 99,363,168	77.4%
OVERTIME	3,494,740	3,580,601	85,861	2.5%	4,219,293	84.9%
FRINGE BENEFITS	16,008,420	15,899,496	(108,924)	-0.7%	19,326,756	82.3%
WORKERS' COMPENSATION	1,952,500	1,917,280	(35,220)	-1.8%	2,343,000	81.8%
CHEMICALS	7,925,742	7,513,906	(411,836)	-5.2%	9,790,848	76.7%
ENERGY AND UTILITIES	19,197,246	16,002,278	(3,194,968)	-16.6%	23,164,822	69.1%
MAINTENANCE	21,803,647	23,940,196	2,136,549	9.8%	28,698,772	83.4%
TRAINING AND MEETINGS	300,957	276,945	(24,012)	-8.0%	413,714	66.9%
PROFESSIONAL SERVICES	4,610,881	4,606,835	(4,046)	-0.1%	5,819,611	79.2%
OTHER MATERIALS	3,231,347	4,051,068	819,721	25.4%	6,164,589	65.7%
OTHER SERVICES	19,293,836	18,927,512	(366,324)	-1.9%	23,529,902	80.4%
<b>TOTAL DIRECT EXPENSES</b>	<b>\$ 177,336,089</b>	<b>\$ 173,638,690</b>	<b>\$ (3,697,398)</b>	<b>-2.1%</b>	<b>\$ 222,834,475</b>	<b>77.9%</b>
INSURANCE	\$ 1,786,813	\$ 1,685,543	\$ (101,270)	-5.7%	\$ 2,160,797	78.0%
WATERSHED/PILOT	23,233,424	22,777,104	(456,320)	-2.0%	28,096,233	81.1%
BECO PAYMENT	1,404,457	1,258,009	(146,448)	-10.4%	1,946,157	64.6%
MITIGATION	1,157,692	1,256,923	99,231	8.6%	1,400,000	89.8%
ADDITIONS TO RESERVES	(28,882)	(28,882)	-	0.0%	(34,927)	82.7%
RETIREMENT FUND	8,159,521	8,159,521	-	0.0%	8,159,521	100.0%
POST EMPLOYEE BENEFITS	-	-	-	---	5,224,848	0.0%
<b>TOTAL INDIRECT EXPENSES</b>	<b>\$ 35,713,025</b>	<b>\$ 35,108,218</b>	<b>\$ (604,807)</b>	<b>-1.7%</b>	<b>\$ 46,952,629</b>	<b>74.8%</b>
STATE REVOLVING FUND	\$ 63,643,215	\$ 64,207,909	\$ 564,694	0.9%	\$ 81,876,277	78.4%
SENIOR DEBT	232,004,123	224,374,496	(7,629,627)	-3.3%	283,024,431	79.3%
CORD FUND	-	-	-	---	-	---
DEBT SERVICE ASSISTANCE	-	(873,804)	(873,804)	---	-	0.0%
CURRENT REVENUE/CAPITAL	9,261,538	9,261,538	-	0.0%	11,200,000	82.7%
SUBORDINATE MWRA DEBT	40,418,975	40,418,975	-	0.0%	49,222,442	82.1%
LOCAL WATER PIPELINE CP	3,431,102	3,431,102	-	0.0%	4,149,240	82.7%
CAPITAL LEASE	2,660,261	2,660,261	-	0.0%	3,217,060	82.7%
VARIABLE DEBT	-	(11,159,190)	(11,159,190)	---	-	0.0%
BOND REDEMPTION SAVINGS	-	-	-	---	-	---
DEFEASANCE ACCOUNT	-	18,224,123	18,224,123	---	-	0.0%
<b>TOTAL DEBT SERVICE</b>	<b>\$ 351,419,213</b>	<b>\$ 350,545,409</b>	<b>\$ (873,804)</b>	<b>-0.2%</b>	<b>\$ 432,689,450</b>	<b>81.0%</b>
<b>TOTAL EXPENSES</b>	<b>\$ 564,468,327</b>	<b>\$ 559,292,318</b>	<b>\$ (5,176,010)</b>	<b>-0.9%</b>	<b>\$ 702,476,554</b>	<b>79.6%</b>
<b>REVENUE &amp; INCOME</b>						
RATE REVENUE	\$ 556,056,154	\$ 556,056,154	\$ -	0.0%	\$ 672,440,000	82.7%
OTHER USER CHARGES	7,829,834	7,926,203	96,369	1.2%	8,683,898	91.3%
OTHER REVENUE	10,970,862	13,265,348	2,294,486	20.9%	12,000,066	110.5%
RATE STABILIZATION	-	-	-	---	-	---
INVESTMENT INCOME	7,599,503	8,060,305	460,802	6.1%	9,352,590	86.2%
<b>TOTAL REVENUE &amp; INCOME</b>	<b>\$ 582,456,353</b>	<b>\$ 585,308,010</b>	<b>\$ 2,851,657</b>	<b>0.5%</b>	<b>\$ 702,476,554</b>	<b>83.3%</b>

**ATTACHMENT 2  
Current Expense Variance Explanations**

Total MWRA	FY16 Budget YTD April	FY16 Actuals YTD April	FY16 YTD Actual vs. FY16 Budget		Explanations
			\$	%	
<b>Direct Expenses</b>					
Wages & Salaries	79,516,773	76,922,573	(2,594,200)	-3.3%	Underspending is mainly the result of lower average Full Time Equivalent positions (FTEs) than budgeted and the timing of backfilling vacant positions and the salary mix differential between staff retiring and new hires. The average FTEs through April was 1,136, which was 24 positions lower than the 1,160 FTEs budgeted. Additionally, the Authority had two temporary employees.
Overtime	3,494,740	3,580,601	85,861	2.5%	Overspending mainly in Water Valve Maintenance to reconfigure system flows associated with providing Lynn water, responding to a Cambridge water main break, and start-up at Spot Pond, Treatment & Transmission Operations for planned operator half plant maintenance, and in FOD in response to the Nut Island fire. This is offset by fewer wet weather events and shutdowns related to the North Main Pump Station valve replacement project.
Fringe Benefits	16,008,420	15,899,496	(108,924)	-0.7%	Lower than budget mainly due to Health Insurance of \$154,000 and Dental Insurance of \$53,000 due to fewer than budgeted filled positions, offset by overspending for Medicare of \$34,000; Unemployment Insurance of \$25,000 and Tuition Reimbursement of \$22,000.
Worker's Compensation	1,952,500	1,917,280	(35,220)	-1.8%	Underspending due to lower compensation payments of \$135,000 and medical and other expenses of \$100,000. In April actual spending was \$99,000 over budget. It is important to note that spending on this line item can change significantly depending on future claims and severity of cases.
Chemicals	7,925,744	7,513,906	(411,838)	-5.2%	Lower year-to-date spending primarily due to lower than budgeted spending on Soda Ash of \$381,000 due to lower usage to meet corrosion control targets and timing of deliveries for Soda Ash; Sodium Bisulfite of \$120,000 due to lower usage at the Carroll Water Treatment Plant due to UV disinfection and timing of deliveries at DITP and lower plant flows; Other Oxidizers of 54,000 due to less usage than planned and lower pricing for the new contract; and Ozone of \$52,000 due to higher water quality and change in operating target resulting from UV disinfection. The underspending is offset by overspending on Hydrogen Peroxide of \$179,000 due to increased need for pretreatment of hydrogen sulfide gas due to plant flows; and Polymer of \$74,000.



**ATTACHMENT 2  
Current Expense Variance Explanations**

Total MWRA	FY16 Budget YTD April	FY16 Actuals YTD April	FY16 YTD Actual vs. FY16 Budget		Explanations
			\$	%	
Utilities	19,197,246	16,002,278	(3,194,968)	-16.6%	Underspending due to lower Electricity of \$2 million mainly due to underspending at Deer Island of \$1.6 million for lower commodity and transmission and distribution costs, lower flows which resulted in less pumping demand, and an over accrual at the end of FY15. There has also been underspending in Diesel Fuel of \$1.1 million primarily in FOD and DITP, Natural Gas of \$68,000, Propane of \$49,000 and #2 Fuel Oil of \$43,000. This is offset by higher water usage of \$99,000 at DITP, NI Headworks and JCWTP.
Maintenance	21,803,647	23,940,196	2,136,549	9.8%	Materials were overspent by \$2 million. Higher spending for energy efficiency projects totaling \$637,000. Services were overspent by \$176,000. Nut Island maintenance repair costs have total \$1.7 million through April for both materials and services.
Training & Meetings	300,957	276,946	(24,011)	-8.0%	Underspending primarily due to timing of Fleet Services training initiatives.
Professional Services	4,610,881	4,606,837	(4,044)	-0.1%	Lower spending on Lab Testing & Analysis of \$182,000 in ENQUAL-Wastewater; Resident Inspection of \$24,000 for invasives control; and Engineering of \$22,000 at Deer Island and Reservoir Operations. This is offset by overspending in Other services and Legal Services in Law.
Other Materials	3,231,347	4,051,068	819,721	25.4%	Higher than budget mainly due to timing of Vehicle Purchase of \$879,000; Lab and Testing Supplies of \$68,000 mainly due to receipt of equipment ordered in FY15 and received in the first Quarter of FY16; Equipment/Furniture of \$58,000; Health and Safety of \$39,000; and Computer Hardware of \$33,000. The overspending is offset by lower spending for Vehicle Expenses of \$323,000 mostly due to lower fuel prices.
Other Services	19,293,836	18,927,513	(366,323)	-1.9%	Lower than budgeted spending of \$189,000 for sludge pelletization services for lower year to date inflation; \$116,000 for Space Lease Rentals for the Chelsea facility lease due to an overpayment of escrow for insurance; \$76,000 for Grit and Screenings disposal services primarily due to lower quantities; and \$72,000 for Other Rentals. The underspending is offset by higher spending on Telephone Services of \$68,000 associated with Field Operations SCADA lines for the water and wastewater facilities both for more lines and technology change; Other Services of \$58,000 for Ward Street Headworks radio tower demolition and Membership/Dues/Subscriptions of \$32,000 due to timing.
<b>Total Direct Expenses</b>	<b>177,336,091</b>	<b>173,638,694</b>	<b>(3,697,397)</b>	<b>-2.1%</b>	

**ATTACHMENT 2**  
**Current Expense Variance Explanations**

Total MWRA	FY16 Budget YTD April	FY16 Actuals YTD April	FY16 YTD Actual vs. FY16 Budget		Explanations
			\$	%	
<b>Indirect Expenses</b>					
Insurance	1,786,813	1,685,544	(101,269)	-5.7%	Lower Premiums of \$97,000. Claims are at budgeted level.
Watershed/PILOT	23,233,424	22,777,104	(456,320)	-2.0%	Underspending due to lower Reimbursement expenses of \$355k due to FY15 overaccrual and projected lower spending in FY16, and lower PILOT payments.
HEEC Payment	1,404,457	1,258,009	(146,448)	-10.4%	Lower spending due to timing of actual billing.
Mitigation	1,157,692	1,256,924	99,232	8.6%	Higher cost due to current agreements being signed after the budget was established.
Addition to Reserves	(28,882)	(28,882)	-	0.0%	
Pension Expense	8,159,521	8,159,521	-	0.0%	
Post Employee Benefits	-	-	-		
<b>Total Indirect Expenses</b>	<b>35,713,025</b>	<b>35,108,220</b>	<b>(604,805)</b>	<b>-1.7%</b>	
<b>Debt Service</b>					
Debt Service	351,419,213	351,419,213	-	0.0%	Through April staff have transferred \$18.2 million of a favorable YTD variance to the Defeasance Account. The short-term rates related variance is \$11.2 million YTD. Additionally, the Authority recognized \$7.6 million YTD underspending that is the result of the favorable impact of defeasances related to reserve releases and for not borrowing senior debt scheduled for November.
Debt Service Assistance	-	(873,804)	(873,804)		Unbudgeted Debt Service Assistance received in April.
<b>Total Debt Service Expenses</b>	<b>351,419,213</b>	<b>350,545,409</b>	<b>(873,804)</b>	<b>-0.2%</b>	
<b>Total Expenses</b>	<b>564,468,329</b>	<b>559,292,323</b>	<b>(5,176,006)</b>	<b>-0.9%</b>	
<b>Revenue &amp; Income</b>					
Rate Revenue	556,056,154	556,056,154	-	0.0%	
Other User Charges	7,829,834	7,926,203	96,369	1.2%	
Other Revenue	10,970,862	13,265,348	2,294,486	20.9%	City of Lynn water non-rate revenue of \$593,000 for use of MWRA water while they completed maintenance work on their water system; TRAC penalty payment of \$611,000; Cambridge water use of \$325,000; US Treasury rebates of \$296,000, energy rebates of \$291,000, and sale of surplus equipment of \$255,000.
Rate Stabilization	-	-	-		
Investment Income	7,599,503	8,060,305	460,802	6.1%	Investment Income is over budget by \$461,000, due to higher than budgeted short-term interest rates.
<b>Total Revenue</b>	<b>582,456,353</b>	<b>585,308,010</b>	<b>2,851,657</b>	<b>0.5%</b>	
<b>Net Revenue in Excess of Expenses</b>	<b>17,988,024</b>	<b>26,015,687</b>	<b>8,027,663</b>		

**ATTACHMENT 3**  
**Capital Improvement Program Variance Explanations**  
(000's)

	FY16 Budget YTD April	FY16 Actuals YTD April	YTD Actuals vs. Budget		Explanations
			\$	%	
Interception & Pumping (I&P)	\$12,711	\$4,467	(\$8,244)	-64.9%	Underspending mainly due to Chelsea Creek Upgrades - Construction of \$4.0M and Caruso Pump Station Improvements Construction of \$760,000 due to schedule changes, Alewife Brook Pump Station Rehab Final Design/CA/REI and Construction of \$2.4M, Chelsea Screenhouse Upgrades of \$770,000 due to timing, and other smaller projects totaling \$764,000. Offset by Nut Island Headworks Electric, Grit & Screenings Conveyance Design and Construction of \$233,000 due to timing and Nut Island System-wide Odor Control - Evaluation of \$217,000 due to progress.
Treatment	\$28,514	\$20,848	(\$7,665)	-26.9%	Underspending on Electrical Equipment Upgrade - Construction 4 of \$3.1M, North Main Pump Station VFD Replacements of \$1.7M, As-Needed Design 7-2 and 7-3 of \$1.0M, Thermal Power Plant Boiler Control Replacement of \$487,000, Digester Sludge Pump Replacement Phase 2 of \$407,000, Power System Improvements - Construction of \$267,000, and Fire Alarm System Replacement - Design of \$228,000 due to timing. Barge Berth and Facility Replacement of \$600,000, Winthrop Terminal Facility VFD Replacements of \$573,000, Gravity Thickener Rehabilitation of \$383,000, and Combined Heat & Power - Design of \$250,000 due to schedule changes, Steam Turbine Generator System Modifications Construction of \$450,000 due to energy efficiency rebate, Clinton Wastewater Treatment Plant of \$254,000, and other smaller projects totaling \$337,000. Offset by overspending on Butterfly Valve Replacement of \$1.7M, Secondary Reactor VFDs of \$391,000 and HVAC Equipment Replacement Design/Engineering Services During Construction of \$280,000 due to timing.
Residuals	\$0	\$0	\$0	-	
CSO	\$12,318	\$13,948	\$1,630	13.2%	Overspending on Cambridge Sewer Separation of \$3.2M due to water use during construction activities and updated cost estimates as a result of additional unforeseen conditions. Offset by Reserved Channel Sewer Separation of \$969,000 due to updated cost estimates, MWR003 Gate & Siphon of \$505,000, and South Dorchester Bay Sewer Separation (Commercial Point) of \$125,000 due to timing.

**ATTACHMENT 3**  
**Capital Improvement Program Variance Explanations**  
(000's)

	FY16 Budget YTD April	FY16 Actuals YTD April	YTD Actuals vs. Budget		Explanations
			\$	%	
Other Wastewater	\$12,651	\$10,040	(\$2,610)	-20.6%	Underspending on Infiltration and Inflow (I/I) due to lower community requests for grants and loans.
<b>Total Wastewater</b>	<b>\$66,194</b>	<b>\$49,303</b>	<b>(\$16,890)</b>	<b>-25.5%</b>	
Drinking Water Quality Improvements	\$5,555	\$6,426	\$871	15.7%	Overspending due to Existing Facilities CP-7 of \$897,000, Spot Pond Storage Facility Design/Build of \$299,000 and Owners' Representative of \$229,000, and Carroll Water Treatment Plant's Ultraviolet Disinfection - Design/Engineering Services During Construction/Resident Engineer Inspection of \$161,000 due to timing, and Brutsch Treatment Facility of \$344,000 due to additional construction administration and resident engineering services. Offset by Carroll Water Treatment Plant's Ultraviolet Disinfection - Construction of \$952,000 due to litigation settlement.
Transmission	\$12,494	\$4,189	(\$8,305)	-66.5%	Underspending for Long Term Redundancy of \$7.1M due to lower than budgeted award and schedule change for Wachusett Aqueduct Pump Station and ongoing alternatives review for metropolitan redundancy, Watershed Land of \$1.1M due to the timing of land acquisitions, and Sudbury/Weston Aqueduct Repairs of \$309,000 due to timing. Offset by Hatchery Pipeline Construction of \$189,000 due to contractor progress and Design/Engineering Services During Construction/Resident Engineer Inspection of \$162,000 due to consultant progress and scope changes.
Distribution & Pumping	\$12,403	\$12,297	(\$106)	-0.9%	Underspending for WASM 3 - MEPA/Design/CA/RI of \$796,000 due to ongoing alternatives review for metropolitan redundancy, NIH Redundancy & Storage of \$754,000 due to lower than budgeted award and schedule change for Sections 89 & 29 Redundancy Construction Phase 1B of \$1.0M offset by Sections 89 & 29 Redundancy - Design of \$339,000 due to consultant progress, and Valve Replacement of \$488,000 due to timing. Offset by Weston Aqueduct Supply Mains Section 36/C/S9 - A11 Valve of \$1.4M due to contractor progress, Southern Extra High Redundancy & Storage Final Design/CA/RI of \$416,000 due to timing, and other projects totaling \$116,000.

**ATTACHMENT 3**  
**Capital Improvement Program Variance Explanations**  
(000's)

	FY16 Budget YTD April	FY16 Actuals YTD April	YTD Actuals vs. Budget		Explanations
			\$	%	
Other Waterworks	\$2,115	(\$1,051)	(\$3,167)	-	Underspending due to lower community requests for Local Water System Loans of \$2.6M, and Quabbin Power Communication and Security Construction of \$339,000 and Waterworks Facility Asset Protection of \$325,000 due to schedule shifts.
<b>Total Waterworks</b>	<b>\$32,568</b>	<b>\$21,861</b>	<b>(\$10,707)</b>	<b>-32.9%</b>	
Business & Operations Support	\$5,626	\$2,734	(\$2,891)	-51.4%	Underspending on MIS-related projects of \$1.7M due to timing of IT Strategic Plan implementation, \$628,000 due to lower than projected use of as-needed technical assistance, and Security Equipment of \$597,000 due to delay in award of equipment contracts.
<b>Total MWRA</b>	<b>\$104,387</b>	<b>\$73,899</b>	<b>(\$30,488)</b>	<b>-29.2%</b>	

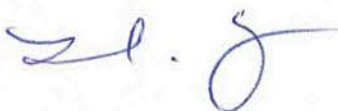
**ATTACHMENT 4**

**FY16 Budget vs FY16 Projection**

TOTAL MWRA	FY16 Budget	FY16 Projection	Change	
			FY16 Budget vs FY16 Projection	
			\$	%
<b>EXPENSES</b>				
WAGES AND SALARIES	\$ 99,363,168	\$ 96,434,276	\$ (2,928,892)	-2.9%
OVERTIME	4,219,293	4,276,968	57,675	1.4%
FRINGE BENEFITS	19,326,756	19,344,213	17,457	0.1%
WORKERS' COMPENSATION	2,343,000	2,307,780	(35,220)	-1.5%
CHEMICALS	9,790,849	9,429,204	(361,645)	-3.7%
ENERGY AND UTILITIES	23,164,822	19,123,274	(4,041,548)	-17.4%
MAINTENANCE	28,698,772	31,984,591	3,285,819	11.4%
TRAINING AND MEETINGS	413,714	404,086	(9,628)	-2.3%
PROFESSIONAL SERVICES	5,819,611	5,528,130	(291,481)	-5.0%
OTHER MATERIALS	6,164,588	6,096,451	(68,137)	-1.1%
OTHER SERVICES	23,529,902	23,279,680	(250,222)	-1.1%
<b>TOTAL DIRECT EXPENSES</b>	<b>\$ 222,834,475</b>	<b>\$ 218,208,653</b>	<b>\$ (4,625,822)</b>	<b>-2.1%</b>
INSURANCE	\$ 2,160,797	\$ 2,059,527	(101,270)	-4.7%
WATERSHED/PILOT	28,096,233	27,519,959	(576,274)	-2.1%
HEEC PAYMENT	1,946,157	1,799,709	(146,448)	-7.5%
MITIGATION	1,400,000	1,520,000	120,000	8.6%
ADDITIONS TO RESERVES	(34,927)	(34,927)	-	0.0%
RETIREMENT FUND	8,159,521	8,159,521	-	0.0%
ADDITIONAL PENSION DEPOSIT	-	-	-	
POSTEMPLOYMENT BENEFITS	5,224,848	5,224,848	-	0.0%
<b>TOTAL INDIRECT EXPENSES</b>	<b>\$ 46,952,629</b>	<b>\$ 46,248,637</b>	<b>\$ (703,992)</b>	<b>-1.5%</b>
STATE REVOLVING FUND	\$ 81,876,277	\$ 78,874,468	(3,001,809)	-3.7%
SENIOR DEBT	283,024,431	275,717,759	(7,306,672)	-2.6%
SUBORDINATE DEBT	49,222,442	49,222,442	-	0.0%
LOCAL WATER PIPELINE CP	4,149,242	500,000	(3,649,242)	-87.9%
CURRENT REVENUE/CAPITAL	11,200,000	11,200,000	-	0.0%
CAPITAL LEASE	3,217,060	3,217,060	-	0.0%
CORE FUND DEPOSIT	-	-	-	
BOND REDEMPTION	-	-	-	
VARIABLE RATE SAVINGS	-	(13,639,885)	(13,639,885)	
DEFEASANCE ACCOUNT	-	27,597,607	27,597,607	
DEBT SERVICE ASSISTANCE	-	(873,804)	(873,804)	
<b>TOTAL DEBT SERVICE</b>	<b>\$ 432,689,450</b>	<b>\$ 431,815,646</b>	<b>\$ (873,804)</b>	<b>-0.2%</b>
<b>TOTAL EXPENSES</b>	<b>\$ 702,476,554</b>	<b>\$ 696,272,936</b>	<b>\$ (6,203,618)</b>	<b>-0.9%</b>
<b>REVENUE &amp; INCOME</b>				
RATE REVENUE	\$ 672,440,000	\$ 672,440,000	-	0.0%
OTHER USER CHARGES	8,683,898	8,683,898	-	0.0%
OTHER REVENUE	12,000,066	14,294,552	2,294,486	19.1%
RATE STABILIZATION	-	-	-	
INVESTMENT INCOME	9,352,590	10,052,590	700,000	7.5%
<b>TOTAL REVENUE &amp; INCOME</b>	<b>\$ 702,476,554</b>	<b>\$ 705,471,040</b>	<b>\$ 2,994,486</b>	<b>0.4%</b>

VARIANCE: \$ (9,198,104) \$ (9,198,104)


### STAFF SUMMARY

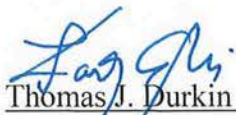
**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** May 11, 2016  
**SUBJECT:** 2007 Series B Escrow Arbitrage Rebate Payment

---

COMMITTEE: Administration, Finance & Audit

     VOTE  
  X   INFORMATION

Matthew R. Horan, Treasurer   
Preparer/Title

  
Thomas J. Durkin for T.D.  
Director, Finance

---

#### RECOMMENDATION:

For information only.

#### DISCUSSION:

As a tax-exempt debt issuer MWRA is required to follow the Internal Revenue Service's regulations governing their issuance and ongoing compliance. One of these regulations places a restriction on the amount of investment income an issuer is allowed to earn off of the bond proceeds and other associated funds. This restriction is known as the arbitrage yield and is calculated at the time of issuance and remains the same percentage for as long as the bonds are outstanding. The proceeds of a bond transaction include money used for capital costs, debt service reserve funds and the deposits to refunding escrows.

When establishing an escrow the bond proceeds are utilized to purchase investments which earn interest and mature in time to make the payments to bondholders. The earnings on those investments cannot exceed the arbitrage yield. If the earnings exceed the arbitrage yield money must be rebated to the federal government. As a result, the goal when purchasing the investments is to find ones that pay exactly the arbitrage yield and create what is referred to as a perfect escrow.

Currently seventeen of MWRA's eighteen bond issuances are earning interest at rates less than the arbitrage yield and as a result payments are not required. There is one series with positive arbitrage earnings as a result of additional earning on the 2007 Series B refunding escrow.

When MWRA issued its 2007 Series B refunding bonds, we were able to build a portfolio of investments that resulted in a perfect escrow. Due the timing of the maturities of the investments and the bondholder payment dates, the 2007 Series B escrow was structured in such a way that eleven times between 2011 and 2015 money in the account had to be invested in U.S. Treasury

State and Local Government Issues (SLGs) that yielded zero interest. MWRA's Trustee, U.S. Bank, had been able to complete the prior ten purchases of zero SLGs. When it was time to complete the 2015 purchase, the federal government was near its debt limit and as a result the zero SLGs were not available. MWRA had no choice but to purchase interest bearing investments. The new securities resulted in approximately \$3.4 million in investment earnings above the arbitrage yield, all of which must be paid to the federal government. The \$3.4 million in investment earnings were deposited into the Rebate Fund established under the General Bond Resolution and have been held there in anticipation of the required payment.

Since 1995, the federal government has only stopped selling SLGs ten times and as a result the IRS has not adopted regulations that allow issuers to address the inability to purchase zero SLGs without paying a penalty. In order to address periods when SLGs are not available the IRS allows issuers to enter into voluntary closing agreements to avoid the payment of additional penalties and interest. MWRA's bond counsel and arbitrage compliance consultant recommend entering into a voluntary closing agreement with the IRS, which should allow MWRA to avoid an estimated \$591,000 in penalties and additional interest. If over time, MWRA continues to earn less than the arbitrage yield on this series of bonds it may be able to get a refund for portions of this payment.



**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** May 11, 2016  
**SUBJECT:** Bond Defeasance of Future Debt Service



COMMITTEE: Administration, Finance & Audit

VOTE  
 INFORMATION

Matthew R. Horan, Treasurer *MHR*  
Sean R. Cordy, Sr. Financial Analyst *SRC*  
Preparer/Title

*Thomas J. Durkin for T.D.*  
Director of Finance

*Consistent with MWRA's multi-year rates management strategy, MWRA staff are recommending the execution of an approximately \$30.4 million defeasance in June 2016 to reduce future year rate increases. The \$30.4 million in available funds is derived from the use of \$0.4 million surplus funds from FY15 and \$30.0 million of the FY16 surplus to prepay debt coming due in FY17 through FY22 (\$26.4 million in principal and \$4.0 million in interest). The defeasance of debt, coupled with diligent management of operational expenses, have been the keys to MWRA's ability to keep assessment increases sustainable and predictable.*

**RECOMMENDATION:**

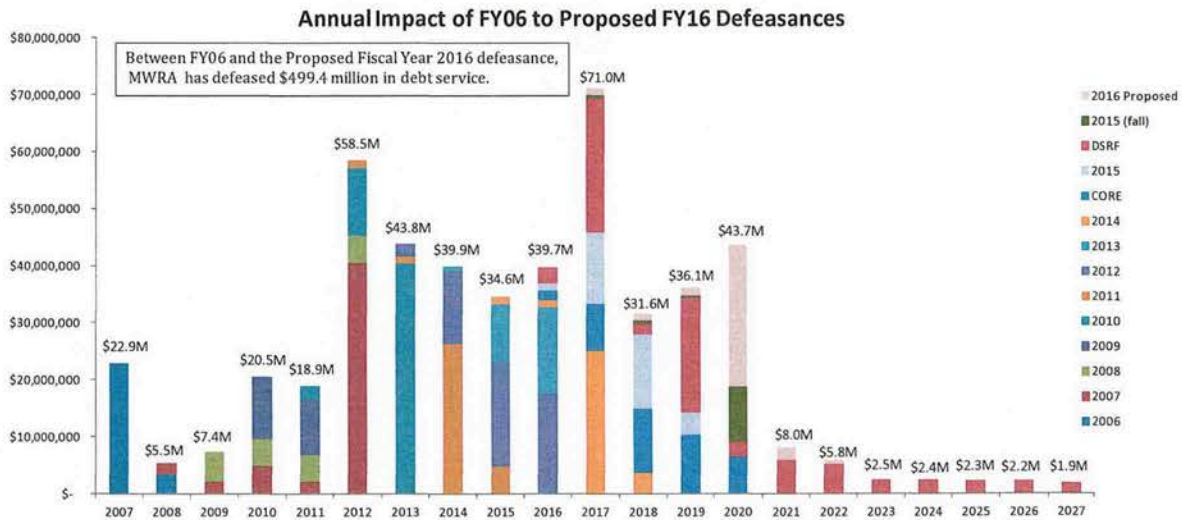
To authorize the Executive Director or his designee, on behalf of the Authority, to enter into, execute and deliver all necessary agreements and other instruments and to take such other actions necessary to effectuate the redemption and defeasance of an aggregate principal amount of approximately \$26,350,000 of outstanding MWRA senior bonds including to cause the escrow of cash and/or securities in an amount necessary to fund such redemption and defeasance, in order to reduce the debt service requirement by approximately \$31,817,000 in the FY17 through FY22 timeframe.

**DISCUSSION:**

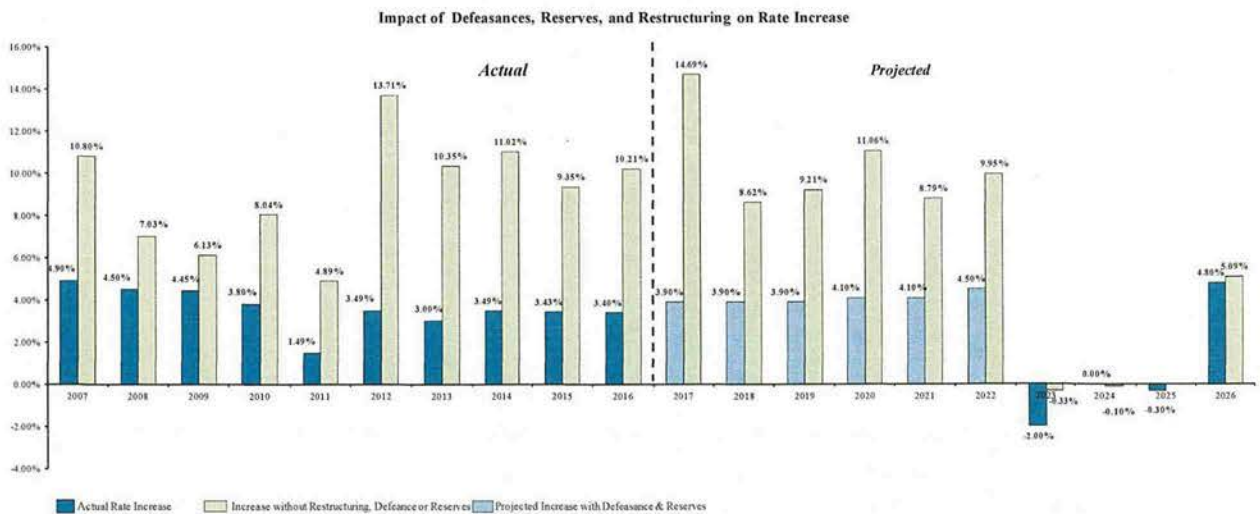
Since FY12, the MWRA has utilized the budgetary defeasance account strategy to set aside surplus funds associated with the capital finance budget to defease outstanding debt. After the final close out of the FY15 budget, there were \$437,711 in surplus funds remaining (beyond the \$26.5 million used for defeasance), which were allocated to the defeasance account to be utilized as part of the FY16 defeasance. In order to mitigate rate increases, staff reflected the use of \$25 million from the FY15 and FY16 surpluses to defease bonds for future rate relief in the Proposed FY17 Budget. Now, based on current year-end projections, staff are requesting approval to use additional surplus funds to increase the size of the defeasance to approximately \$30.4 million,

comprised of \$437,711 from FY15 and \$30.0 million from FY16, for even greater debt service reductions in future years.

MWRA's ongoing use of defeasances has had a significant impact lowering future debt service payments and controlling annual rate revenue increases. Including the proposed FY16 defeasance, MWRA has defeased \$499.4 million in debt service since 2006. The chart below shows the annual impact of those defeasances.



The application of these defeasances have had a significant impact on the estimated rate increases. The chart below shows the estimated rate increase without the application of the defeasances.



Staff reviewed all available defeasance candidates, and have identified the maturities of the series listed in the following table as the most advantageous defeasance candidates. The proposed defeasance reduces debt service by a total of \$31.8 million between FY17 and FY22.

Series	Maturity Date	Principal	Defeasance Cost *	Budgetary Savings					
				2017	2018	2019	2020	2021	2022
2002J	8/1/2020	\$ 6,415,000	\$ 7,826,300	\$ 352,825	\$ 352,825	\$ 352,825	\$ 6,767,825		
2009B	8/1/2020	\$ 14,535,000	\$ 16,715,250	\$ 726,750	\$ 726,750	\$ 726,750	\$ 15,261,750		
2010A	8/1/2020	\$ 1,390,000	\$ 1,612,400	\$ 55,600	\$ 55,600	\$ 55,600	\$ 1,445,600		
2011C	8/1/2022	\$ 720,000	\$ 720,000	\$ 28,800	\$ 28,800	\$ 28,800	\$ 28,800	\$ 28,800	\$ 748,800
2012A	8/1/2021	\$ 1,910,000	\$ 1,910,000	\$ 95,500	\$ 95,500	\$ 95,500	\$ 95,500	\$ 2,005,500	
2014D	8/1/2020	\$ 1,380,000	\$ 1,656,000	\$ 69,000	\$ 69,000	\$ 69,000	\$ 1,449,000		
<b>Total</b>		<b>\$26,350,000.00</b>	<b>\$30,439,950.00</b>	<b>\$ 1,328,475</b>	<b>\$ 1,328,475</b>	<b>\$ 1,328,475</b>	<b>\$25,048,475</b>	<b>\$ 2,034,300</b>	<b>\$ 748,800</b>

\*Escrow cost is only anticipated funds from surplus and does not include current year deposits. Assumes no interest earned on escrow.

The total debt service reduction attributable to the defeasance is approximately \$1.4 million higher than the defeasance cost because the 2011 Series C and 2012 Series A bonds are currently callable on August 1, 2016 and the 2009 Series B bonds on August 1, 2019. The payment of these bonds on the call date will yield interest savings, as a result of paying off the bonds prior to maturity without interest accruing. Increasing the defeasance by \$5.4 million provided an addition \$257,125 in savings in FY17-FY19, \$2.7 million in FY20, \$2.0 million in FY21 and \$748,800 in FY22.

Staff anticipate using funds from the FY15 and projected FY16 surpluses to purchase governmental securities in an amount sufficient to make all future interest and principal payments on the bonds to be defeased, offset by the interest earned on the Treasury securities. In order to provide the CEB savings in FY17, the defeasance must be completed prior to June 30, 2016.

The governmental securities purchased are deposited with an escrow agent (bond trustee). Once established, an escrow is irrevocable, replacing any future debt service payments due for the bonds being escrowed, and therefore reducing the rate revenue requirement. Establishing an escrow reduces debt service requirements for each fiscal year from the time it is executed until the defeased bonds mature.

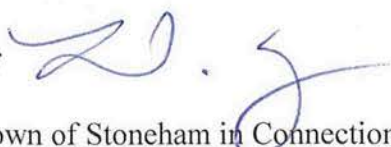
Establishing an escrow to defease debt requires that MWRA's bond counsel draft an agreement to this effect and an independent verification agent must certify that the funds in the escrow are sufficient to pay the remaining debt service. Bonds that are escrowed to maturity are not included in the MWRA's debt cap or debt service coverage calculations. Staff will continue to monitor market conditions and the maturities available to be defeased to ensure that the bonds selected provide MWRA with the highest available debt service savings.

If the FY16 surplus is less than the amount necessary to complete the defeasance, staff are requesting authorization to use Bond Redemption as supplemental funding for the escrow. If the FY16 surplus is greater than the \$30.0 million needed for the proposed defeasance, staff will present options to the Board for its utilization after the close of the fiscal year.

#### **BUDGET/FISCAL IMPACT:**

The defeasance of these bonds will decrease the FY17 through FY22 debt service requirement by \$31.8 million. The cost associated with bond counsel and financial advisory services will be paid out of the Treasury Department's professional services budget.

STAFF SUMMARY

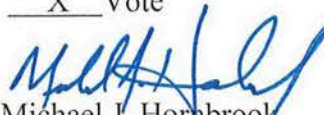
**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** May 11, 2016  
**SUBJECT:** Memorandum of Agreement with the Town of Stoneham in Connection with the Northern Intermediate High Pipeline Project

---

**COMMITTEE:** Administration, Finance & Audit

Information  
 Vote

Anandan Navanandan, Chief Engineer  
John P. Vetere, Deputy Chief Operating Officer  
Preparer/Title

  
Michael J. Hornbrook  
Chief Operating Officer

---

**RECOMMENDATION:**

That the Board authorize the Executive Director, on behalf of the Authority, to execute and enter into a Memorandum of Agreement with the Town of Stoneham, substantially in the form attached to this staff summary, for the use of a 2.6-acre Town-owned parcel as a staging area for the Northern Intermediate High Pipeline Project and the Reading Extension Sewer Rehabilitation Project in the amount of \$500,000 for a term of four years with a month by month holdover at the end of the initial term at no additional cost, payable at least 30 days prior to the commencement of construction; and further, to make a payment to the Town of Stoneham in the amount of \$429,450 at the mid-point of construction of MWRA Contract 7478 to be used by the Town for the sole purpose of performing final paving and restoration of the street and installation of sidewalks on portions of Oak Street affected by the project.

**DISCUSSION:**

MWRA's Northern Intermediate High (NIH) service area provides water to the communities of Reading, Stoneham, Wakefield, Wilmington, Winchester, and Woburn through a single 48-inch pipeline, which is fed by the Gillis Pump Station, at Spot Pond in Stoneham. Although some of these communities are partially served by MWRA, the loss of this single transmission main would result in a rapid loss of service in Reading, Stoneham and Woburn, and potential water restrictions in Wakefield, Wilmington and Winchester.

The Northern Intermediate High Pipeline Project includes four construction contracts:

- The first construction contract, Contract 7066, consisted of 2,400 linear feet of 36-inch water transmission main in the Town of Reading coordinated with the MassDOT road reconstruction project on West Street. This contract was completed in May 2015;

- The second construction contract, Contract 7471, approved by the Board in November 2015, includes the construction of 8,800 linear feet of 36-inch water transmission main in the City of Woburn and the Town of Reading and to be completed March 2018;
- The third construction contract, Contract 7478, will include the construction of 6,200 linear feet of 48-inch diameter transmission main in the Town of Stoneham and 3,000 linear feet of 12-inch diameter transmission main to service Wakefield Meter 229. Construction of this contract is expected to commence in July 2016 and be completed by December 2017; and
- The fourth construction contract, Contract 7067, will include the construction of 14,000 linear feet of 48-inch diameter transmission main in the Town of Stoneham. Construction of this contract is expected to commence in August 2016 and be completed by June 2019.

The Reading Extension Sewer Rehabilitation Project consists of the rehabilitation of approximately 10,800 linear feet of sewer.

The final two water pipeline contracts related to this project and the Reading Extension Sewer Rehabilitation contract are within the Town of Stoneham, where MWRA has recently completed construction of the Spot Pond Covered Storage Tank and Pump Station. Over the last few months leading up to the award of these contracts, MWRA and the Town have discussed a number of issues which would ensure MWRA could proceed with construction with as little disruption to residents as possible and with assurances from the Town that construction could proceed unimpeded without any further requests for mitigation. This proposed Memorandum of Agreement seeks to codify issues identified during those discussions.

#### Use of Land for Staging Area

During construction of the first two water pipeline contracts, it has been extremely difficult to find land which is both suitable in size and available for use as a construction staging area. There are very few parcels large enough and close enough to the project route. The lack of potential nearby staging areas will result in increased duration and cost of the remaining pipeline construction contracts, as well as the Reading Extension Sewer Rehabilitation contract. While planning for the Stoneham portion of the projects, the Town proposed that MWRA use a 2.6-acre parcel adjacent to the High School for this purpose. The cost to use this parcel is \$500,000 for a term of four years, with payment to be made at least 30 days prior to the commencement of construction. Staff have determined that this is a reasonable fee based on market conditions and the range of fees MWRA charges for similar purposes – fees that were established by appraisal.

#### Final Paving on Oak Street, Stoneham

The Town has also requested that, in lieu of the final paving and restoration of the street and installation of sidewalks on the water pipeline portions of Oak Street affected by the project, funds be provided to the Town so that other planned improvements by the Town can be made at the same time. The cost of this work is \$429,450 and would be paid to Stoneham at the mid-point of construction of MWRA Contract 7478.

**BUDGET/FISCAL IMPACT:**

The FY16 Capital Improvement Program includes \$300,000 for easements and funds for paving restoration are included in the construction contracts for the water pipeline project. Any additional spending above this amount will be absorbed within the current Cap.

**ATTACHMENT:**

Draft Memorandum of Agreement

MEMORANDUM OF AGREEMENT  
BETWEEN  
MASSACHUSETTS WATER RESOURCES AUTHORITY  
AND  
TOWN OF STONEHAM

This MEMORANDUM OF AGREEMENT is made this \_\_\_\_\_ day of \_\_\_\_\_, 2016, is made by and between the Town of Stoneham, a municipal corporation duly organized and existing under the laws of the Commonwealth of Massachusetts having an address of 35 Central Street, Stoneham, Massachusetts 02180 (hereinafter referred to as "STONEHAM") and the MASSACHUSETTS WATER RESOURCES AUTHORITY, a body corporate and politic and an instrumentality of the Commonwealth of Massachusetts established pursuant to Chapter 372 of the Acts of 1984 having an address of Charlestown Navy Yard, 100 First Avenue, Boston, Massachusetts 02129 (hereinafter referred to as "MWRA") (collectively, the "Parties").

RECITALS

WHEREAS, STONEHAM is the owner of record of a parcel of land in Stoneham, Massachusetts located adjacent to the Stoneham High School (the "Premises") and shown on the Plan attached hereto, and incorporated herein as Exhibit "A" (hereinafter referred to as the "Plan");

WHEREAS, MWRA's Northern Intermediate High service area provides water to the communities of Reading, Stoneham, Wakefield, Wilmington, Winchester, and Woburn through a single 48-inch water transmission main ("Section 89"), which is fed by MWRA's Gillis Pump Station located at Spot Pond in Stoneham, Massachusetts;

WHEREAS, MWRA is designing and constructing a new water transmission main that will provide redundancy to the community meters so that Section 89 can be removed from service for inspection and rehabilitation as part of four separate contracts;

WHEREAS, MWRA plans to install 7,800 linear feet of new 48-inch water transmission main in the Town of Stoneham, 1,700 linear feet of 16-inch water transmission main and 1,100 feet of 12-inch water transmission main to service a new Wakefield Revenue Meter for Contract 7478 and 13,200 linear feet of new 48-inch water transmission main in the Town of Stoneham for Contract 7067 as part of the Northern Intermediate High Pipeline Project and MWRA plans to rehabilitate approximately 10,800 linear feet of existing sewer main located primarily in the Town of Stoneham, Contract 7164 (the "Pipeline Project");

WHEREAS, MWRA desires to access and use the Premises for parking, the placement of portable toilets, construction staging, including the storage of construction equipment, materials, trailer boxes for the purpose of supporting and completing construction of the Pipeline Project;

WHEREAS, STONEHAM is willing to permit MWRA and its employees, representatives and contractors to access and use the Premises to support the Pipeline Project;

WHEREAS, STONEHAM and MWRA wish to enter into this Memorandum of Agreement ("MOA") regarding MWRA's access to and use of the Premises;

WHEREAS, MWRA has recently completed a project within STONEHAM involving the construction of the Spot Pond covered drinking water storage tank off Woodland Road in the Town which Project has resulted in improvements to the MWRA water delivery and storage capabilities and which has also benefitted STONEHAM and surrounding communities; and

WHEREAS, STONEHAM and MWRA, in the interests of continuing the positive and cooperative working relationship between the Parties, wish to use this opportunity to confirm the resolution of all other construction mitigation claims which STONEHAM may ever have had in connection with any and all past MWRA projects, including the Tank Project, which may have imposed costs, inconvenience or other difficulties to STONEHAM or its residents during the course of any of said past projects; and

WHEREAS, STONEHAM and MWRA have reached agreement upon the items and dollar value of construction mitigation which will serve as the final and complete compensation to the Town for all adverse impacts resulting from all MWRA projects, including without limitation, both the Tank Project and the Pipeline Project and wish to memorialize those terms in a written agreement.

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

## **I. PURPOSE AND USE, TERM, CONSIDERATION, AND CONDITIONS**

1.1 Purpose and Permitted Uses: Entry upon and use of the Premises are specifically granted to MWRA and its employees, representatives and contractors for the purpose of supporting and completing construction of the Pipeline Project including, but not limited to, the right to access, occupy, and use the Premises for parking, the placement of portable toilets, the storage of construction equipment, materials, and trailers and any other activities reasonably related thereto.

1.2 Premises: The parcel owned by STONEHAM is located adjacent to Stoneham High School and shown on the Plan attached hereto as Exhibit A and is located in Stoneham, Massachusetts.

1.3 Term: Such entry and use by MWRA shall be exercised for a period of four (4) years, commencing on the day MWRA begins work on the Premises (the "Commencement Date"). MWRA shall notify STONEHAM of the Commencement Date in a written notice sent to STONEHAM at least fourteen (14) days prior to the Commencement Date.



1.4 Payments By MWRA: The rights contained in this MOA are granted in consideration of the mutual covenants and agreements contained herein, the sufficiency of which is agreed to by the parties hereto. MWRA shall pay to STONEHAM a single lump sum payment in the amount of \$500,000 at least thirty (30) days prior to the date on which MWRA or any of its contractors, agents or consultants shall take exclusive use and occupancy of the Premises in connection with the Pipeline Project. Said funds shall be expendable by STONEHAM in any manner that it deems appropriate and may be dedicated to any one or more lawful purposes as STONEHAM sees fit without the need for any advance disclosure to or approval by MWRA.

In addition, at the mid-point of progress payments made by MWRA to the contractor for Contract 7478, MWRA shall pay the lump sum of \$429,450 to STONEHAM to be used solely and exclusively by STONEHAM to make such roadway, sidewalk and related improvements to portions of Oak Street affected by the Pipeline Project as STONEHAM deems appropriate. A current estimate of the costs of such improvements as prepared by STONEHAM is attached hereto as Exhibit B. To the extent that those estimated costs increase, MWRA shall not be required to pay any further sums to STONEHAM.

1.5 Warranties: STONEHAM makes no representations or warranties as to the condition of the Premises for the uses set forth in this MOA. MWRA accepts the Premises "as is" and shall enter and use the Premises at MWRA's sole risk.

1.6 Assignment: This MOA is not assignable and the Premises shall be used solely and exclusively by MWRA and its employees, representatives and contractors for the purposes set forth herein.

1.7 Times and Extent of Use: MWRA and its employees, representatives and contractors shall have use of the Premises subject to all of the provisions of this MOA. MWRA shall give written notice to STONEHAM at least fourteen (14) days prior to its initial entry upon the Premises. MWRA and its employees, representatives and contractors may not access the Premises between the hours of 7:30AM and 8:30AM and 2:30PM and 3:30PM unless otherwise authorized by STONEHAM. MWRA and its employees, representatives and contractors may access the Premises at all other times between the hours of 6:00AM and 6:00PM.

1.8 Utilities: MWRA acknowledges that there may be surface and/or subsurface utilities on and adjacent to the Premises and agrees to exercise extreme caution in the performance of its activities. Any damage to such utilities resulting from the acts or omissions of MWRA or of any its agents, contractors or consultants shall be the sole responsibility of MWRA.

1.9 Sound Management Practices: MWRA shall operate its activities upon the Premises in a manner that will prevent the unpermitted discharge of pollutants into air, water, land or other natural resources of the Commonwealth.

1.10 Conduct: In the conduct of all Pipeline Project work, neither party shall unreasonably interfere with the business, operations or access of the other party, its employees, invitees or contractors, or any other person having an interest in the Premises.

1.11 Compliance with Laws: MWRA shall comply with, and shall cause all activity on the Premises to comply with all applicable federal, state and other governmental statutes, laws, rules, orders, regulations and ordinances. MWRA shall conduct all of its activities so as not to exceed any reasonable noise restrictions imposed by STONEHAM.

1.12 Termination: Either party may terminate this MOA following the completion of the Pipeline Project by written notice to the other party hereto. MWRA shall minimize any disruption to or alteration of the Premises and shall return the Premises to the condition existing immediately prior to the initiation of MWRA's activities, reasonable wear and tear excepted, including, but not limited to, the removal of all construction equipment, restoration of existing grade, and replanting, all at no cost to STONEHAM. MWRA shall surrender the Premises to STONEHAM upon termination.

1.13 Holdover: If MWRA needs to continue to use the Premises after the expiration of the Term to complete construction of the Pipeline Project, the MOA shall continue on a month-to-month basis and may be terminated by either party following completion of the Pipeline Project at any time by providing the other party with thirty (30) days prior written notice of termination. During such extended term, MWRA shall be bound by all applicable provisions of this MOA, but shall not be required to pay any additional rent beyond the initial lump sum payment of \$500,000.

1.14 Counterparts: This agreement shall be executed in duplicate counterparts, each of which shall be deemed an original and both of which shall constitute one and the same instrument.

1.15 Amendments: The Parties to this MOA may amend this MOA only by a writing duly executed by both parties.

1.16 Disputes/Cooperation: STONEHAM and MWRA shall each use their best efforts to cooperate in the performance of the Pipeline Project by appointing appropriate representatives who, respectively, shall be responsible for expediting and responding to any and all inquiries, problems and matters requiring coordination among the Parties concerning the scheduling, performance, progress or completion of the Pipeline Project. Any and all disputes which arise and which cannot be amicably resolved by the Parties during the course of the performance of MWRA work shall, if at all possible, be resolved after the completion of that work.

1.17 No Further Construction Mitigation Claims by the Town of Stoneham: In consideration of the variety of past efforts by MWRA to mitigate the adverse impacts of MWRA construction projects affecting the Town, including the Tank Project off Woodland Road, coupled with the items of construction mitigation to be provided hereunder, STONEHAM hereby remises, discharges and releases MWRA from any and all claims for further monetary or in-kind mitigation of any type or description from MWRA arising out of any past projects including both the Tank Project and the Pipeline Project. In particular, MWRA has provided STONEHAM with benefits as the Tank Project proceeded including the following improvements completed at MWRA's cost: (i) modifications to an emergency communications tower which

allows STONEHAM to share in increased communication capabilities provided by the tower, (ii) replacement of antiquated and undersized water transmission lines on MWRA's Tank Project site and installation new replacement water lines and fire hydrants for STONEHAM residents and supplied connections to MWRA's Gillis Pump Station together with a new water meter, and (iii) replaced or relocated all infrastructure disturbed, destroyed or removed by MWRA during the course of that project.

## **II. NOTICES**

For purpose of this MOA, the Parties shall be deemed duly notified in accordance with the terms and provisions hereof, if written notices are mailed to the following addresses:

STONEHAM: Town of Stoneham  
35 Central Street  
Stoneham, Massachusetts 02180  
Attention: David Ragucci, Town Administrator

MWRA: Massachusetts Water Resources Authority  
2 Griffin Way  
Chelsea, MA 02150  
Attention: Anandan Navanandan, Chief Engineer

These addresses are subject to change, and the Parties hereto agree to inform each other of such changes as soon as practicable.

## **III. EXHIBITS AND ATTACHMENTS**

Any and all exhibits and attachments referenced herein or attached hereto are duly incorporated within and are made a part of this agreement.

## **IV. MISCELLANEOUS**

4.1 Entire Agreement: This MOA constitutes the entire agreement between the Parties hereto, and all prior agreements between the Parties hereto concerning the activities permitted herein are superseded by this MOA.

4.2 Governing Law: This MOA shall be deemed to be made and construed in accordance with the laws of the Commonwealth of Massachusetts.

4.3 Invalid Provision: If any provision of this MOA or any application thereof shall be held to be invalid by a court of competent jurisdiction, the remainder of this MOA shall not be affected thereby, unless, one or both Parties would be substantially and materially prejudiced.

## **V. AUTHORITY**

Each person signing in an official or representative capacity warrants that he or she is duly authorized to act for his or her principal and that he or she is so acting when signing this

MOA, and that, when executed this MOA shall be a valid and binding obligation, enforceable in accordance with its terms.

IN WITNESS WHEREOF, the Parties hereto have caused the MOA to be executed as a sealed instrument and signed in duplicate by their duly authorized representatives.

**EXECUTED AS A SEALED INSTRUMENT** this \_\_\_\_ day of May, 2016.



**TOWN OF STONEHAM**

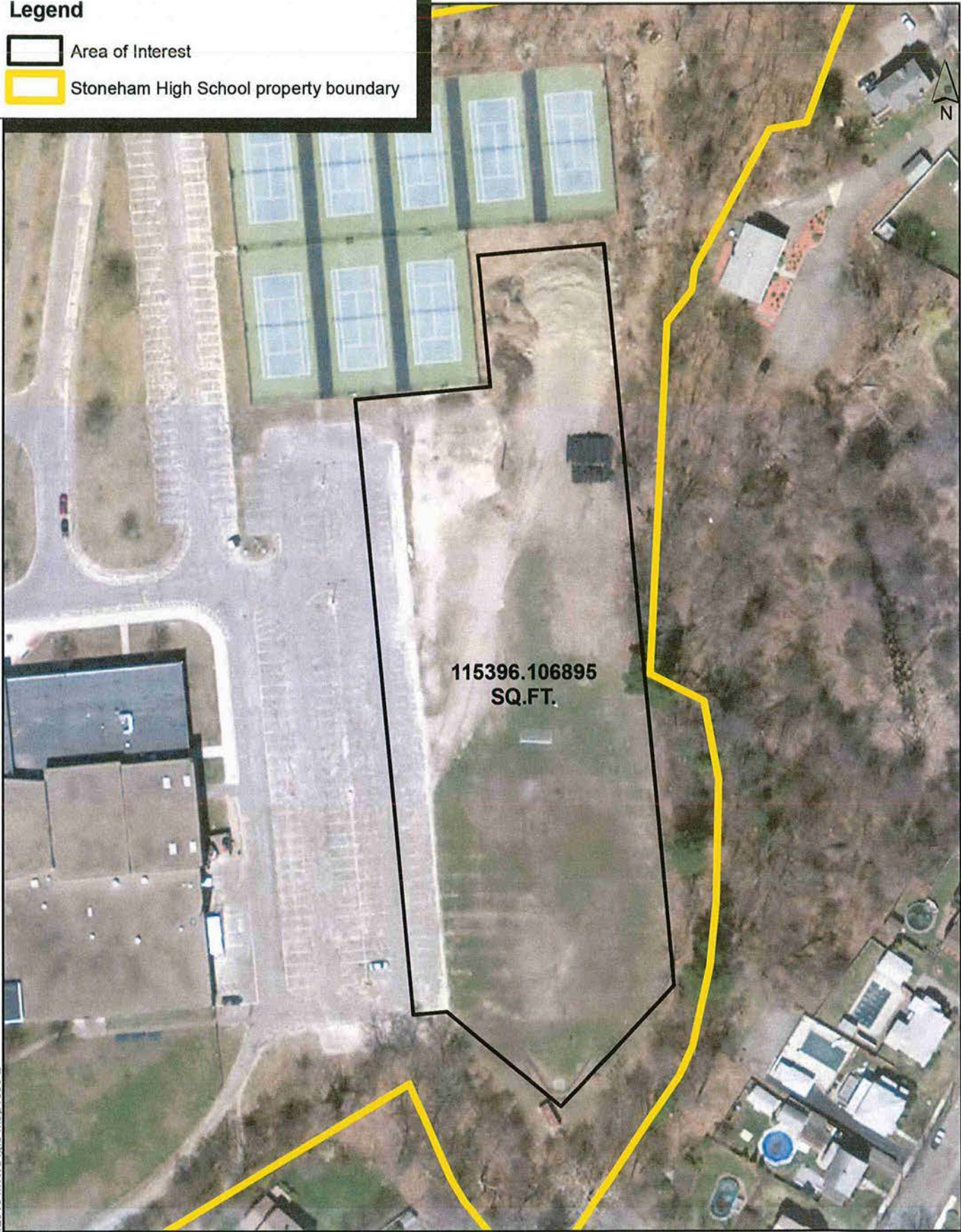
**MASSACHUSETTS WATER  
RESOURCES AUTHORITY**

By: \_\_\_\_\_  
David Ragucci  
Town Administrator

By: \_\_\_\_\_  
Frederick A. Laskey  
Executive Director

**Legend**

-  Area of Interest
-  Stoneham High School property boundary



3/11/2016 mWR:Agis map1833-2

0 50 100 200 Feet 1 inch = 100 feet

**STAFF SUMMARY**



**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** May 11, 2016  
**SUBJECT:** Arbitrage Rebate Compliance Services  
PFM Asset Management LLC  
Contract F240



COMMITTEE: Administration, Finance & Audit

VOTE  
 INFORMATION

  
Michele S. Gillen  
Director, Administration

Matthew R. Horan, Treasurer   
Sean R. Cordy, Sr. Financial Analyst   
Preparer/Title

  
Thomas J. Durkin  
Director, Finance

**RECOMMENDATION:**

To approve the recommendation of the Consultant Selection Committee to award Contract F240 to PFM Asset Management LLC for Arbitrage Rebate Compliance services and to authorize the Executive Director, on behalf of the Authority, to execute contract F240 in an amount not to exceed \$104,750 and for a term of three years from the Notice to Proceed.

**DISCUSSION:**

MWRA issues tax-exempt revenue bonds to finance the cost of its capital improvement program and to refund outstanding bonds for economic benefit. As an issuer of tax-exempt debt, the Authority is required to comply with arbitrage rebate regulations promulgated by the Internal Revenue Service (IRS). The arbitrage rebate regulations provide limits on the amount of income MWRA can receive on the investment of tax-exempt bond related funds. This restriction is known as the arbitrage yield and is calculated when the bonds are issued. Any interest earnings in excess of the limit must be paid to the IRS every five years starting from the issuance date of the bonds. In addition to the IRS requirement, MWRA's General Bond Resolution requires that rebate calculations be completed on an annual basis, and any estimated amount due be set aside to make the next five year payment to the IRS.

Calculations are required for all outstanding tax-exempt debt which currently total thirteen senior and five subordinate debt issuances, two commercial paper notes and the revolving loan. These calculations, particularly for refunding bonds, are very complex and require a strong understanding of the IRS regulations.

## **PROCUREMENT PROCESS:**

The procurement process to select the consultant to provide Arbitrage Rebate Compliance Services utilized a one step Request for Qualification Statements and Proposals (RFQ/P), which was issued on March 23, 2016. In addition to MWRA's standard procurement advertising requirements, copies of the advertisement were sent directly to seven firms. Eight firms requested a copy of the RFQ/P from MWRA and two firms, BLX Group LLC (BLX), and PFM Asset Management LLC (PFM), submitted proposals on April 15, 2016.

The Selection Committee evaluated and ranked the proposals from BLX and PFM based on the evaluation criteria contained in the RFQ/P (Cost, Qualifications and Key Personnel, Experience and Past Performance, and Capacity/Organization, Management and Technical Approach). The proposals for Arbitrage Rebate Compliance Services were ranked as follows:

<b>Final Ranking</b>	<b>Proposer</b>	<b>Proposed Cost</b>	<b>Order of Preference Total Score</b>	<b>Total Points</b>
1	PFM	\$ 104,750	5	466.5
2	BLX	\$ 122,550	10	412.5

Notes: Proposed Cost does not include the project familiarization task. Order of Preference Total Score represents the sum of the individual Selection Committee Member's rankings where the firm receiving the highest number of points is assigned a "1"; the firm receiving the next highest number of points is assigned a "2"; and so on.

PFM's proposal offered an overall lower price for providing the services than BLX. PFM made a business decision to cap their fees on the allowance work at \$5,000, which is \$15,000 less than the \$20,000 allowed under the RFQ/P. Although BLX proposed a strong team and also demonstrated significant experience related to arbitrage rebate calculations, their overall cost was higher than PFM. PFM has provided these services to MWRA for the last three years and has done an excellent job. PFM has sufficient capacity and demonstrated the necessary skills to complete work required under this contract. The Selection Committee voted unanimously to recommend award to PFM.

## **BUDGET/FISCAL IMPACT:**

There are sufficient funds in the Proposed FY17 CEB to pay for the work under this contract.

## **MBE/WBE PARTICIPATION:**

No minimum MBE/WBE participation requirements were established due to the lack of subcontracting opportunities.



# MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard  
100 First Avenue, Building 39  
Boston, MA 02129

Frederick A. Laskey  
Executive Director

Telephone: (617) 242-6000  
Fax: (617) 788-4899  
TTY: (617) 788-4971

## **WASTEWATER POLICY & OVERSIGHT COMMITTEE MEETING**

*Chair:* P. Flanagan  
*Vice-Chair:* J. Walsh  
*Committee Members:*  
A. Blackmon  
J. Carroll  
J. Foti  
A. Pappastergion  
B. Peña  
H. Vitale

to be held on

Wednesday, May 11, 2016

Location: 100 First Avenue, 2nd Floor  
Charlestown Navy Yard  
Boston, MA 02129

Time: Immediately following AF&A Comm.

### **AGENDA**

#### **A. Information**

1. Progress of Cambridge-Implemented CSO Projects and Projected Financial Assistance through September 2016

#### **B. Contract Awards**

1. Clinton Wastewater Treatment Plant - Commercial Gas Service/Main Agreement with National Grid: Contract 7528

#### **C. Contract Amendments/Change Orders**

1. Nut Island Emergency Demolition and Duct Cleaning: Daniel O'Connell's Sons, Contract OP-320, Change Order 2



MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the  
Wastewater Policy and Oversight Committee

April 13, 2016

A meeting of the Wastewater Policy and Oversight Committee was held on April 13, 2016 at the Authority headquarters in Charlestown. Chairman Flanagan presided. Present from the Board were Ms. Wolowicz and Messrs. Blackmon, Carroll, Cotter, Foti, Pappastergion, Peña, Vitale and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, John Vetere, Kim Dennis, Dave Duest, Ethan Wenger, Rick Adams, Mike Hornbrook, and Bonnie Hale. The meeting was called to order at 11:30 a.m.

**Information**

Staff gave presentations on the following two information items, and there was general discussion and question and answer:

- Nut Island Fire Update
- March 22, 2016 Deer Island Power Outage.

**Contract Awards**

\*Preferred Service Agreement for the Combustion Turbine Generators at the Deer Island Treatment Plant: PW Power Systems, Inc.

The Committee recommended approval of the contract award (ref. agenda item B.1).

\*Thermal and Hydro Power Plant Maintenance, Deer Island Treatment Plant: IPC Lydon, LLC, Contract S551

The Committee recommended approval of the contract award (ref. agenda item B.2).


Winthrop Terminal VFD and Synchronous Motor Replacement: Deer Island Treatment Plant: J. F. White Contracting Co., Contract 6875

The Committee recommended approval of the contract award (ref. agenda item B.3).

The meeting adjourned at 12:10 p.m.

\* Approved as recommended at April 13, 2016 Board of Directors meeting.

## STAFF SUMMARY

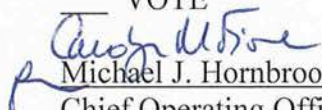
**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** May 11, 2016  
**SUBJECT:** Progress of Cambridge-Implemented CSO Projects and Projected Financial Assistance through September 2016

---

COMMITTEE: Wastewater Policy & Oversight

Anandan Navanandan, P.E., Chief Engineer  
David A. Kubiak, P.E., Sr. Program Manager  
Preparer/Title

X INFORMATION  
VOTE

  
Michael J. Hornbrook  
Chief Operating Officer

---

### RECOMMENDATION:

For information only. This staff summary presents the status of the projects in the Long-Term CSO Control Plan that are implemented by the City of Cambridge with MWRA funds. Staff plan to transfer \$2,801,293.43 into the City of Cambridge CSO account to cover the cost of eligible work scheduled by Cambridge in the period April 2016 through September 2016, bringing the total amount of MWRA funds transferred into the Cambridge CSO account to \$91,363,033.42.

### DISCUSSION:

Pursuant to the terms of the CSO Memorandum of Understanding and Financial Assistance Agreement ("MOU" and "FAA"), Cambridge is responsible for the implementation of four of the six projects that comprise the MWRA's long-term control plan for Alewife Brook (see Table 1 on page 2 and the maps in Attachments 2 and 3), as well as a project Cambridge completed in 2007 that eliminated CSO discharges or provided floatables control for remaining discharges at the City's CSO outfalls along the Charles River. The MOU and FAA were originally executed in 1996, and the total award amount in the agreements through Amendment 12, executed on November 24, 2015, is \$98,668,856.

All of the Alewife Brook CSO projects are complete for CSO control. Together, these projects reduce annual CSO volume to the Alewife Brook by 85% in a typical year, from 50 million gallons under 1997 system conditions to 7.3 million gallons, and reduce CSO activations in a typical year from 63 in 1997 to seven. Remaining Cambridge work eligible for MWRA funding involves restoration of surfaces affected by the CAM004 sewer separation construction, including road and sidewalk restorations and limited green infrastructure for stormwater flow and quality control.

### Cambridge Progress

On December 23, 2015, the City of Cambridge attained substantial completion of the CSO related work of the CAM004 Sewer Separation project, in compliance with Schedule Seven,

effectively removing stormwater from its combined sewer systems tributary to Outfall CAM004, permanently closing the outfall to CSO discharges, and greatly reducing CSO discharges to the Alewife Brook at the other permitted outfalls.

**Table 1: Alewife Brook CSO Control Plan - Project Components**

Project	Substantial Completion	Cambridge Contract	Benefit
CAM004 Stormwater Outfall and Wetland Basin	Apr 2013	12	Conveys stormwater flows to wetland system for attenuation and treatment.
CAM004 Sewer Separation *	Dec 2015	8A, 8B, 9 and Concord Lane	Removed large quantities of stormwater from the sewer system; eliminated CSO at Outfall CAM004.
CAM400 Manhole Separation	Mar 2011	4/13	Removed stormwater from the sewer system; eliminated CSO at Outfall CAM400.
Interceptor Connection Relief and Floatables Control at CAM002 and CAM401B and Floatables Control at CAM001	Oct 2010		Upgraded connections between Cambridge and MWRA systems to provide relief; installed floatables control.
Control Gate/Floatables Control at Outfall MWR003 and MWRA Rindge Avenue Siphon Relief	Dec 2013	MWRA Contract	Optimized hydraulic conveyance; minimized overflows while controlling system flooding in large storms; installed floatables control.
Interconnection Relief and Floatables Control at Outfall SOM01A	Oct 2015	MWRA Contract	Upgraded connection to MWRA system and installed floatables control.

\* Also includes initial construction contracts completed by Cambridge in 2002

Remaining work on the CAM004 Sewer Separation project mainly involves roadway and sidewalk restoration, green infrastructure installation and tree plantings in the neighborhoods along and near Huron and Concord avenues, east of Fresh Pond Parkway. This work, partially eligible for MWRA funding, is scheduled to continue through June 2017, in coordination with ineligible water main improvements by City of Cambridge in the same area.

Remaining work eligible for MWRA funding includes Contract 8A punch list items, Contract 8B surface restoration and final paving, Contract 9 surface restoration work, plantings, and final paving, and Concord Lane surface restoration work.

**MWRA Oversight and Financial Assistance**

The FAA establishes eligible and ineligible costs. Generally, all reasonable force account and contract costs incurred by Cambridge to implement the CSO projects are funded by MWRA. The FAA calls for MWRA to disburse grant funds to Cambridge semiannually, based on a detailed, documented estimate of work progress and eligible costs for each projected six-month period. MWRA’s review and acceptance of the spending estimate is required prior to disbursement of funds to the Cambridge CSO account. Cambridge pays the eligible costs of the project from a general city account and periodically reimburses its general account from the CSO account. In addition, the FAA allows Cambridge to use accumulated interest in the account to fund eligible costs.

Staff continue to review the scope and costs of engineering and construction contracts that are issued by Cambridge, including amendments and change orders. Staff also maintain regular contact with Cambridge staff to resolve any critical issues, understand the status of eligible costs and expenditures, and review progress and schedules. Cambridge submits semi-annual reports that describe actual work progress and expenditures (force account and contract-related) for each project.

#### Funding and Eligible Expenditures through March 2016

Since execution of the MOU and FAA in 1996, MWRA has transferred a total of \$88,561,739.99 to Cambridge's CSO account to cover eligible design and construction costs through March 2016. The eligible cost incurred by Cambridge from MOU/FAA inception through March 2016 is \$84,865,128.37 and the available balance in the CSO account as of the end of March 2016 is \$3,783,883.57, which includes \$87,271.95 interest earned. One reason for the current high balance in the account is Cambridge's decision to defer to the spring of 2016 the surface restoration work originally scheduled for the fall of 2015, to focus all construction effort on meeting the December 2015 court milestone.

#### MWRA Funding through September 2016

Cambridge recently submitted a projected work progress report and a related estimate of eligible contract and force account spending for the period April 2016 through September 2016 in the amount of \$6,585,177.00. Over this period, Cambridge will continue with project management, construction and construction supervision services for the remaining construction contract work described above. Staff have reviewed Cambridge's cost projection and plan to transfer \$2,801,293.43 into the Cambridge CSO account to cover eligible costs through September 2016. This transfer amount includes Cambridge's estimate of \$6,585,177.00 for eligible work in the period April 2016 through September 2016, less the estimated balance in the account of \$3,783,883.57. Attachment 1 shows a breakdown of previously transferred funds and the pending transfer. In this breakdown, line items showing a negative pending transfer are contracts for which the amount previously transferred by MWRA is greater than an updated (lower) final cost or cost-to-complete estimate recently received from Cambridge.

#### **BUDGET/FISCAL IMPACT:**

The FY16 CIP budget includes \$93,689,422 for design and construction of the Cambridge CSO projects. Total funds transfer to the Cambridge CSO account, including the pending transfer of \$2,801,293.43, is \$91,363,033.42.

#### **MBE/WBE PARTICIPATION:**

In accordance with the MOU, MBE and WBE participation in the Cambridge Sewer Separation and Floatable Controls projects will comply with DEP requirements and City of Cambridge policy.

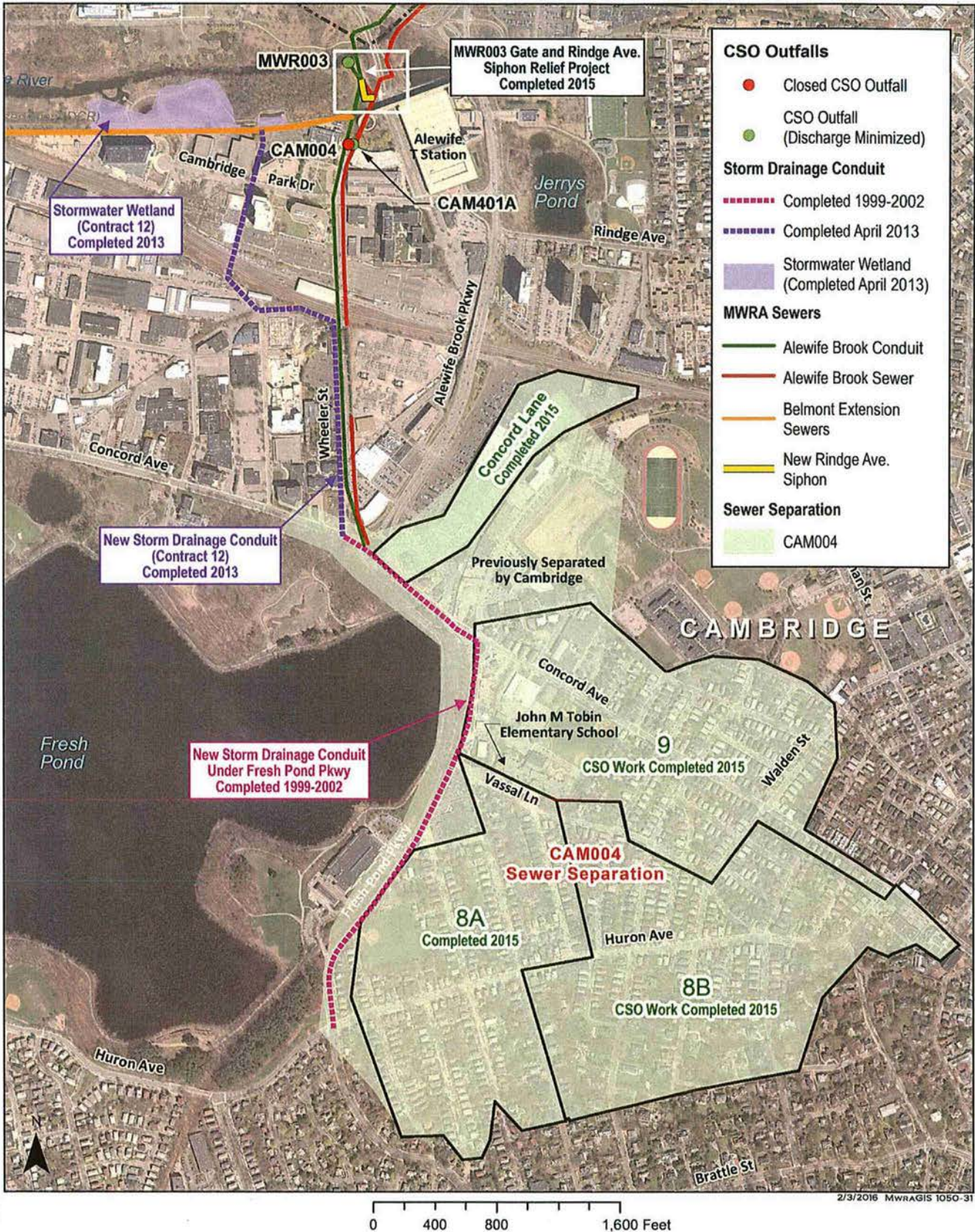
#### **ATTACHMENTS:**

Attachment 1 – Breakdown of MWRA Fund Transfer by Contract and Activity

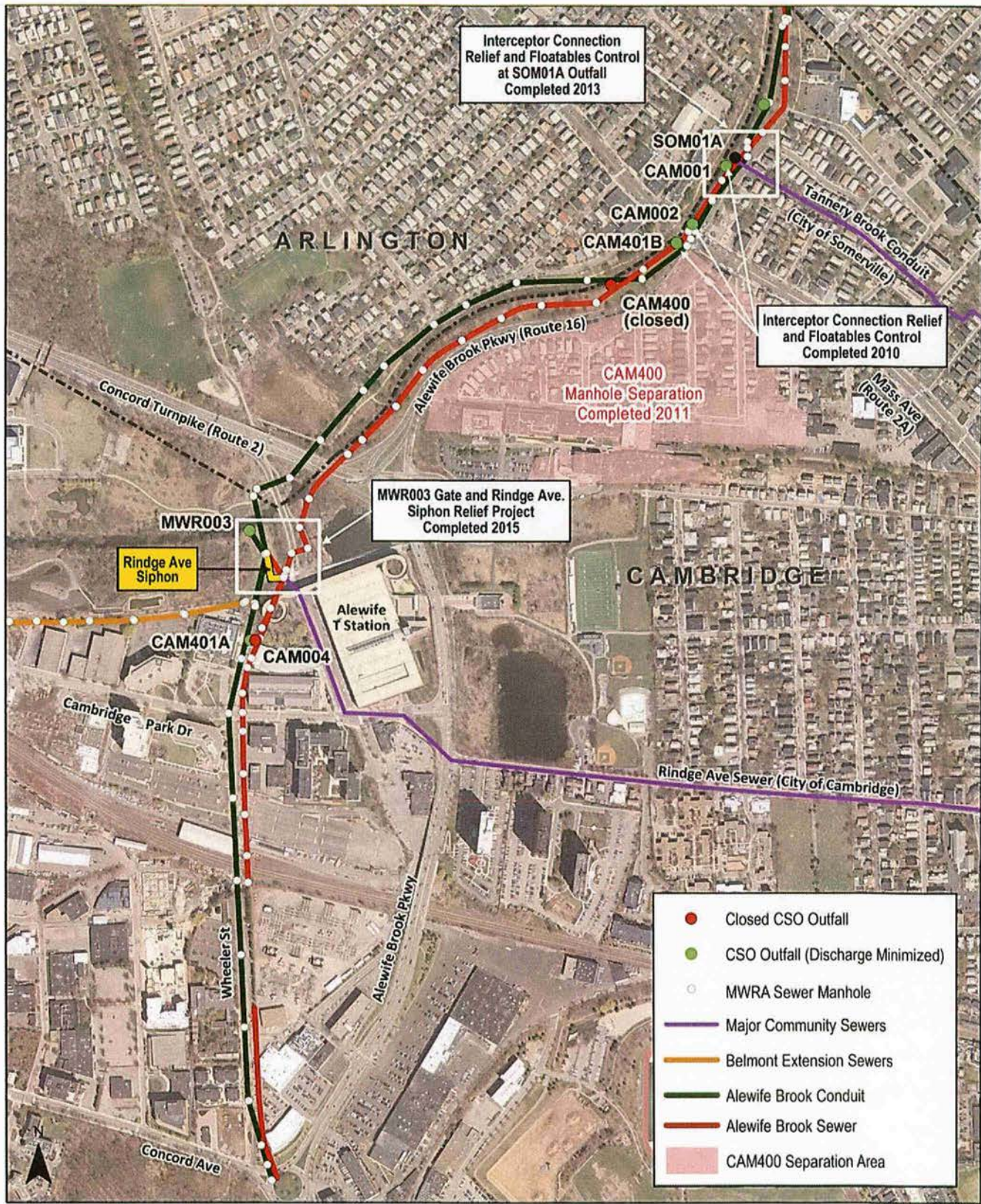
**Attachment 1****Breakdown of MWRA Fund Transfer by Contract and Activity**

Engineering Services and Construction Contracts	Funds Previously Provided	Pending Transfer for Apr-16 - Sep-16	Funding through Sep-2016
Preliminary/Final Design for Contracts 1, 2A, 2B and 3	\$ 1,650,270.00	\$ -	\$ 1,650,270.00
Construction Phase Services for Contracts 1, 2A, 2B and 3	\$ 1,787,068.00	\$ -	\$ 1,787,068.00
CAM002-004 Sewer Separation (Contracts 1, 2A, 2B and 3)	\$ 10,411,903.37	\$ -	\$ 10,411,903.37
Final Design/Field Investigations for Contracts 8, 9, and 12 (including Notice of Project Change and Supplemental Design Reports)	\$ 1,498,117.38	\$ -	\$ 1,498,117.38
Design/ESDC Floatables & CAM400 Manhole Separation Contract 4/13	\$ 2,113,462.70	\$ -	\$ 2,113,462.70
Design 8A, 8B, & 9	\$ 4,693,067.20	\$ (11,688.23)	\$ 4,681,378.97
ESDC 8A, 8B, & 9	\$ 8,760,565.06	\$ 1,848,501.13	\$ 10,609,066.19
Final Design 12	\$ 3,924,885.60	\$ -	\$ 3,924,885.60
ESDC Contract 12	\$ 3,953,232.59	\$ (55,329.47)	\$ 3,897,903.12
Design/ESDC Concord Lane	\$ 554,810.00	\$ 15,122.00	\$ 569,932.00
Construction of Floatables Controls (Charles and partial Alewife)	\$ 658,639.00	\$ -	\$ 658,639.00
Construction/Police Contract 4/13	\$ 4,927,425.01	\$ -	\$ 4,927,425.01
Construction/Police Contract 12	\$ 5,527,142.35	\$ (3,903.00)	\$ 5,523,239.35
Easements Contract 12	\$ 289,000.00	\$ -	\$ 289,000.00
Construction 8A	\$ 12,165,707.25	\$ (78,901.00)	\$ 12,086,806.25
Construction 8B	\$ 16,585,910.84	\$ 37,405.00	\$ 16,623,315.84
Construction 9	\$ 3,831,122.00	\$ 1,127,399.00	\$ 4,958,521.00
Police 8A, 8B, & 9	\$ 1,904,725.01	\$ 306,452.00	\$ 2,211,177.01
Construction/Police Concord Lane	\$ 2,416,397.00	\$ (557,351.00)	\$ 1,859,046.00
City of Cambridge Force Account/Expenses	\$ 995,561.58	\$ 173,587.00	\$ 1,169,148.58
Interest	\$ (87,271.95)	\$ -	\$ (87,271.95)
<b>Total</b>	<b>\$ 88,561,739.99</b>	<b>\$ 2,801,293.43</b>	<b>\$ 91,363,033.42</b>


**Attachment 2**  
**Alewife Brook CSO Control Plan (1 of 2)**



**Attachment 3**  
**Alewife Brook CSO Control Plan (2 of 2)**



## STAFF SUMMARY


**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** May 11, 2016  
**SUBJECT:** Clinton Wastewater Treatment Plant  
Commercial Gas Service/Main Agreement with National Grid  
Contract 7528

---


COMMITTEE: Wastewater Policy & Oversight

INFORMATION

VOTE

  
Michele S. Gillen  
Director of Administration

John P. Vetere, Deputy Chief Operating Officer  
A. Navanandan, P.E., Chief Engineer  
Milan A. Horbaczewski, P.E., Program Manager  
Preparer/Title

  
Michael J. Hornbrook  
Chief Operating Officer

---

### RECOMMENDATION:

To approve Contract 7528, Commercial Gas Service/Main Agreement with National Grid, for the Clinton Wastewater Treatment Plant Phosphorus Reduction Facility, and to authorize the Executive Director, on behalf of the Authority, to execute said contract with National Grid in the amount of \$490,043.

### BACKGROUND:

The Clinton Wastewater Treatment Plant (the "Clinton Plant") is owned and operated by MWRA to provide advanced wastewater treatment, including nutrient removal for phosphorus and nitrogen, for the towns of Clinton and Lancaster, prior to discharging the effluent to the South Nashua River. The Clinton Plant is designed to treat an average flow of 3.0 million gallons per day (mgd), a maximum daily flow of 8.0 mgd, and a peak hourly flow of 12.0 mgd. MWRA assumed formal operational responsibility for the Clinton Plant in 1987.

### DISCUSSION:

Several projects, ongoing and recently completed, have, among other multiple objectives, improved energy efficiency at the Clinton Plant. Construction Contract 7411, Clinton Wastewater Treatment Plant Phosphorus Reduction Facility, awarded at the February 10, 2016, BOD meeting, will provide enhanced phosphorus reduction in order to comply with expected lower total phosphorus permit limits. Overall Clinton Plant energy efficiency and fuel sources were investigated during the design phase associated with Contract 7411.



The Clinton Plant currently uses oil for heating most of the buildings at the facility (digester gas is used to heat the digesters). The plant utilizes three underground storage tanks (USTs), one 6,000-gallon tank and two 4,000-gallon tanks, to house the fuel required to heat the existing buildings at the plant. These USTs require imminent replacement as they have met their useful lifespan. During design of the Phosphorus Reduction Facility, the design consultant recommended that the new building be heated using propane gas. MWRA staff determined that using natural gas to heat the new building and converting the existing buildings' heating systems would be a better option, allowing MWRA to take advantage of lower fuel costs and the benefits associated with a cleaner and more efficient energy source, including reducing the plant's greenhouse gas emissions.

Another potential benefit of conversion is the opportunity it provides for using natural gas with a micro-turbine as part of a future co-digestion project to further improve energy efficiency at the Clinton Plant. The digesters at the plant could be used to receive pre-processed source separated organics that normally would otherwise be disposed of at a landfill. The pre-processed source separated organics added to the digesters would result in increased digester gas production that could be sent to a micro-turbine to provide electricity for the facility. Natural gas would then be needed to supplement the digester gas to provide additional electricity and more reliable and consistent electrical production. The conversion to gas also eliminates the need to replace the aging USTs at the facility, at a cost of approximately \$135,000.

Facilitating the conversion from oil to gas requires that National Grid install approximately 1,200 linear feet of natural gas pipeline to the Clinton Plant pursuant to the proposed agreement, at a cost of \$490,043 funded by MWRA. This cost would be borne solely by MWRA as the pipeline would only serve the Clinton Plant. The cost includes a necessary brook crossing, paving and all necessary permits. The work also includes the installation of a National Grid meter near the MWRA property line. National Grid will own and maintain the new pipeline and main meter. MWRA's recently awarded Contract 7411 includes extension of gas service lines from the National Grid meter to each building within the plant property, new meters at each building, and modifications to existing burners to convert to gas-fueled. Contract 7411 also includes removal of the three USTs at the facility.

MWRA will be contracting directly with National Grid, the local gas utility for this facility. National Grid is a public service corporation for purposes of Massachusetts General Laws chapter 30, section 39M, which otherwise governs horizontal public construction estimated to cost more than \$10,000. MGL, chapter 30, section 39M provides that it does not apply to transactions with public service corporations.

Attached is the National Grid Commercial Gas Service/Main Agreement.

**BUDGET/FISCAL IMPACT:**

The MWRA cost in the National Grid agreement for gas service to the Clinton Plant, \$490,043, is not included in the FY16 CIP and will be added to the FY17 CIP.

**MBE/WBE PARTICIPATION:**

There were no MBE and WBE participation requirements established for this contract.

**Contact Information**

Business Name: MWRA Clinton Wastewater Treatment Plant  
 Premise Address: 677 High Street  
 City, State, Zip: Clinton, MA 01510  
 Business Phone: \_\_\_\_\_  
 Fax Number: \_\_\_\_\_  
 Mailing/Billing: 2 Griffin Way  
 City, State, Zip: Chelsea MA, 02150  
 Contact Name: Milan Horbaczewski  
 Contact Phone: 617-305-5740  
 Contact Email: milan.horbaczewski@mwra.com  
 Contractor Name: \_\_\_\_\_  
 Contractor Phone: \_\_\_\_\_  
 Contractor Email: \_\_\_\_\_

**CHECK ALL THAT APPLY**

**Surrounding Area Description:**

- Wetlands/Water  Historic  Nature Preserve  
 Undeveloped  Urban  N/A

**Site Information:** (on private property along service route)

- Sprinkler  Septic  Trees  Ledge/Rock  
 Side Walk  Drive Way  Parking Lot

**Underground Utilities:**

- Electric  Phone  Cable  Underground Oil Tank

**Customer Installation Expectations:**

Planned Natural Gas Equipment Installation Date: \_\_\_\_\_  
 Requested Service-Main Installation Date: \_\_\_\_\_  
 Estimated Meter Turn on Date: \_\_\_\_\_

This contract is subject to the Terms and Conditions on the back of this agreement. National Grid agrees to install gas service to the above Premise location. I understand that I may cancel this agreement, without obligation, at any time prior to the installation of the gas service line and main. I hereby authorize National Grid to install a natural gas service line to the Premise address listed above.

**PAYMENT INFORMATION:** Please do not send payment along with this contract. An invoice will be generated upon receipt of this application with the option to pay by check or credit card (Western Union transaction fees will apply). Please note: all invoices must be paid within sixty days.

Customer Contribution Towards Construction Cost: \$ 490,043.00 Customer to dig & provide backfill (EBBO) Yes  No

Owner/Applicant Signature: \_\_\_\_\_ Date: \_\_\_\_\_

National Grid Rep Signature: \_\_\_\_\_ Date: \_\_\_\_\_

National Grid Use Only: Public Bldg: Yes  No   
 Trench Paving: Yes  No  Estimated Length: \_\_\_\_\_  
 Number of Services: \_\_\_\_\_ Average Service Length: \_\_\_\_\_  
 Total Estimated Length: Service \_\_\_\_\_ Main \_\_\_\_\_  
 Intersecting Street: \_\_\_\_\_

Suite or Unit #	Rate	CFH	ADTH	Meter Size	Delivery Pressure	Margin
<b>TOTAL</b>						

Target Date: \_\_\_\_\_ Onyx Cust. ID#: \_\_\_\_\_  
 Work Order: Service \_\_\_\_\_ Main \_\_\_\_\_  
 Easement Required: Yes  No   
 Permits:  Town  State  Conservation  Private Way  
 Existing Service Information (if applicable)  
 Acct. #: \_\_\_\_\_ / \_\_\_\_\_ Rate: \_\_\_\_\_  
 CFH: \_\_\_\_\_ Service Size: \_\_\_\_\_ Meter Size: \_\_\_\_\_

Notes: \_\_\_\_\_

**Sales Type:**  
 New Construction  Conversion  
 Rehab  Low Use  
 Added Load  Oil  
 Off-1-Year  Propane  
 Rate Change  Electricity

**Work Required:**  
 Add Meter  
 Fitting Work  
 Main/Svc  
 New Svc  
 Relay Svc

**Meter Info:**  
 Master Meter  
 Company Owned  
 Customer Owned  
 Outside Meter

**Main Info:**  
 On Main  
 Long Side  
 Short Side  
 Off Main

**Activity Request:**  
 Eng Analysis  
 Construction Est.  
 Sold  
 Project Managed

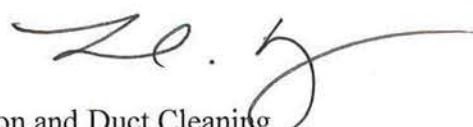
\_\_\_\_ LP \_\_\_\_ IP \_\_\_\_ HP Pre-Marked: \_\_\_\_\_

## TERMS AND CONDITIONS OF COMMERCIAL GAS SERVICE AGREEMENT MASSACHUSETTS

1. Applicant agrees to pay National Grid to aid in the construction of the natural gas service line and associated main work required to provide service to the Premise Address of the Applicant. In the event that the actual service line length exceeds the estimated footage, National Grid may bill the property owner at a rate of Excess Footage Fee over the estimated service line length. "Excess Footage Fee" means the actual amount of footage that exceeds the estimated footage amounts.
2. Once the meter is set, the Applicant becomes the customer of record and National Grid will commence billing the Applicant. The Applicant agrees to pay for gas service pursuant to the applicable rate classification and in accordance with National Grid's Terms and Conditions, as filed from time to time with the Massachusetts Department of Public Utilities.
3. National Grid will take reasonable measures to minimize damage to Applicant's property. For existing structures, National Grid will loam and reseed excavated areas and patch disturbed asphalt. Applicant is responsible for maintaining all reseeded areas.
4. National Grid will install the necessary natural gas distribution system to the site, subject to weather conditions and all federal, state and local codes and permit requirements. In the event that National Grid is unable to obtain the necessary permits to install the gas service line, National Grid shall not be obligated to perform such installation and this Agreement shall be null and void.
5. Notwithstanding the foregoing, National Grid may, at any time, terminate this Agreement without any further obligations, in the event of one of the following "Triggering Conditions": (a) it discovers that there is no active natural gas main in close proximity to Applicant's property for which a service connection can be made in a reasonably cost effective manner (b) it discovers conditions (including, without limitation, ledge, steep grades, and retaining walls), that would, in National Grid's judgment, materially increase the cost of installation, or (c) the fees for the required permits are significantly in excess of what is typical for such work (d) National Grid is unable to obtain the necessary permits to install the gas service line. In the event of a Triggering Condition, National Grid shall consider any Applicant proposals for an adjustment of price.
6. National Grid will not be responsible for delays or damages associated with the installation of a gas service line due to weather or the issuance of permits, nor will it be responsible for damages attributable to unforeseen conditions beyond its control.
7. (New Construction Only) Applicant shall construct, or cause the construction of all necessary water lines, sewer lines, roads and electrical lines, and will perform other necessary work required to prepare the site at the Premise Address for the installation
8. Applicant shall provide <sup>the license</sup> ~~all easements and rights-of-way~~ necessary <sup>on the Premises</sup> ~~and/or access~~ for National Grid to install natural gas distribution lines required to provide service to the Premise Address.
9. National Grid will accept or modify the meter location shown on the front of this form based upon its installation requirements

10. For the purposes of this Commercial Gas Agreement, Applicant assumes full and complete responsibility for any and all costs associated with any environmental contamination encountered by National Grid during the installation, including but not limited to the costs to clean up or remediate such contamination.
11. In the event that environmental contamination is encountered during the installation, all work shall cease and National Grid shall provide oral and written notice to the Applicant within a reasonable time. Thereafter, National Grid shall have no further obligations under this agreement.
12. Applicant shall, to the fullest extent permitted by law, indemnify, hold harmless and release National Grid, its parent company, affiliates and subsidiaries and their respective directors, officers, employees, agents, servants, representatives, successors and assigns from and against all claims, demands, liabilities or expenses related to environmental contamination not caused by National Grid or its contractors at the Premises. This indemnity and release provision survives the expiration or termination of the Agreement and extends to the respective successors and assigns of National Grid and Applicant.
13. National Grid shall own the natural gas distribution system up to the outlet side of each individual customer meter.
14. All installations where excavating and back filling are to be performed by Applicant or his/her designee will be performed in compliance with National Grid's specifications, and the installation shall not commence until said trench is inspected and accepted by a representative of National Grid.
15. In the event that the gas equipment identified on the front of this agreement is not installed and in use within six months of the date of installation of the service line, the Applicant agrees to pay National Grid for the cost of installing all gas lines necessary to serve Premises, minus any prior contribution in aid of construction made to National Grid.
16. Prior to the start of the work described on the front of this agreement, Applicant is responsible for marking out any underground facilities on their property that are not marked out as a result of National Grid's notification of the Dig Safe system.
17. This Agreement may be modified only by a writing signed by National Grid and Applicant; any verbal representations or modifications by National Grid employees or others shall be null and void.
18. The laws of the Commonwealth of Massachusetts shall govern this Agreement.
19. If Applicant changes the primary fuel from natural gas to an alternate fuel source during the first five (5) years after billing commences, National Grid reserves the right to reevaluate the financial impact of this change and bill Applicant for a portion of its original investment.
20. If any terms of this Agreement or portions thereof are declared or become invalid or unenforceable, the remainder of this Agreement shall continue in full force and effect.

**STAFF SUMMARY**


**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** May 11, 2016  
**SUBJECT:** MWRA Nut Island Emergency Demolition and Duct Cleaning  
Daniel O'Connell's Sons  
Contract OP-320, Change Order 2

COMMITTEE: Wastewater Policy & Oversight

John P. Vetere, Deputy Chief Operating Officer  
Martin E. McGowan, Construction Coordinator  
Corinne M. Barrett, Director, Construction  
Preparer/Title

     INFORMATION

  X   VOTE

  
Michael J. Hornbrook  
Chief Operating Officer

**RECOMMENDATION:**

To authorize the Executive Director, on behalf of the Authority, to approve Change Order 2 to Contract OP-320, MWRA Nut Island Emergency Demolition and Duct Cleaning, with Daniel O'Connell's Sons, for an amount not to exceed \$115,000.00, increasing the contract amount from \$852,122.92 to \$967,122.92, with no increase in contract term.

**DISCUSSION:**

The Nut Island Headworks Facility performs screening and grit removal for South System sewage flows before they are transported to Deer Island. On January 25, 2016, a fire broke out in the Odor Control System associated with Scrubber 4 which was fully extinguished on January 26, 2016. Both the fire and extinguishing effort resulted in damaged and/or burned fiberglass scrubber and ductwork, PVC chemical piping, and chemical recirculation pumps. There was also water damage to electrical controls and conduits.

Contract OP-320 includes demolition/removal and disposal of fire damaged odor control equipment, and chemical recirculation pumps/piping. This emergency contract also provided for the internal cleaning of scrubber units 1, 2 and 3 and associated suction and discharge ductwork and cleaning of Odor Control Ventilation Building HVAC ductwork of all residual soot, ash, and sulfur. Damaged ductwork identified during the cleaning process was repaired or replaced and an emergency access opening was installed in the odor control roof at the request of Quincy Fire Department under previously executed Change Order 1.

The emergency cleanup was completed by SERVPRO on April 12, 2016 and the emergency demolition and duct cleaning was completed by Daniel O'Connell's Sons on April 22, 2016. Both contractors have demobilized from the site. The odor control system was placed into operation on April 15, 2016 using the fans and carbon adsorbers to treat the odorous air exiting the facility. Staff

are continuing with testing activities and additional enhancements that may require brief interruptions in service. An air testing program will be completed during the summer to determine the effectiveness of using only carbon for odor control during the peak odor months.

### **This Change Order**

Change Order 2 consists of the following item:

Furnish and Install an Interconnection between Wet Scrubbers 2 and 3 Not to Exceed \$115,000.00

The Nut Island facility has two separate trains of odor control treatment. The first train treats odors from the screening, truck bay and junction chamber with two dedicated wet scrubbers and fans (1 and 2). Train 2 treats odors from the grit area with two dedicated wet scrubbers and fans (3 and 4). Each train is operated with one wet scrubber and one fan, so that there is full redundancy. As a result of the fire, wet scrubber 4 and fan 4 were a total loss, eliminating the redundancy in odor control treatment for Train 2, the grit area.

With the warmer months and higher odor levels approaching, it is necessary to reconfigure the existing odor control ductwork as soon as possible to provide redundancy in the grit area to avoid air emission violations and residential odor complaints. Completing this work under this contract, while the odor control system was already off-line, eliminated the need for a future shutdown to perform this work. The final analysis to restore this critical redundancy was not completed until after construction began. This interconnection was accomplished by installing ductwork with isolation dampers between wet scrubbers 2 and 3. This allows fan 2 to operate as the backup to either Train 1 or Train 2. The Contractor installed 60-inch x 60-inch sheet metal ductwork with two new dampers and relocated two existing 30" x 116" dampers at the inlet of scrubbers 2 and 3. In addition, permanent staging will be erected to provide access for maintenance of the dampers located on the discharge of each fan. These dampers are located approximately 20-feet above the operating floor and difficult to access. This staging will provide safe access and will reduce the time needed to return the fan to service.



**Interconnection Ductwork and Dampers between Wet Scrubbers 2 and 3**

The approved PCO for this item of work has been identified by MWRA staff as an unforeseen condition. Staff recommend a not-to-exceed amount of \$115,000.00 for this work as negotiations continue with the Contractor to properly substantiate actual costs. The Contractor proceeded with this work at its own risk in order to proceed with the remainder of the contract work.

**CONTRACT SUMMARY:**

	AMOUNT	TIME	DATED
Original Contract:	\$723,400.00	30 Days	02/18/16
Change Orders:			
Change Order 1*	\$128,722.92	33 Days	4/27/16
Change Order 2	<u>\$115,000.00</u>	<u>0 Days</u>	Pending
Total Change Orders	\$243,722.92	33 Days	
Adjusted Contract:	\$967,122.92	63 Days	

\*Approved under delegated authority

If Change Order 2 is approved, the cumulative total value of all change orders to this contract will be \$243,722.92 or 34% of the original contract amount. Work on this contract is approximately 99% complete.

**BUDGET/FISCAL IMPACT:**

Costs to repair the fire related damage will exceed the insurance policy self-insured retention of \$2.5 million. MWRA will absorb the \$2.5 million retention amount in the FY16 Current Expense Budget. Amounts in excess of this self-insured retention will be paid by the Authority and then be reimbursed by the insurance company on a periodic basis. To date, the total repair costs are currently estimated at approximately \$3.4 million, including MWRA staff time.

**MBE/WBE PARTICIPATION:**

Due to the emergency nature of this work, no MBE or WBE participation requirements were established for this contract.





# MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard  
100 First Avenue, Building 39  
Boston, MA 02129

Frederick A. Laskey  
Executive Director

**REVISED**

Telephone: (617) 242-6000  
Fax: (617) 788-4899  
TTY: (617) 788-4971

## **WATER POLICY AND OVERSIGHT COMMITTEE MEETING**

*Chair:* A. Blackmon  
*Vice-Chair:* B. Peña  
*Committee Members:*  
J. Carroll  
J. Foti  
A. Pappastergion  
H. Vitale  
J. Walsh  
J. Wolowicz

to be held on

Wednesday, May 11, 2016

Location: 100 First Avenue, 2nd Floor  
Charlestown Navy Yard  
Boston, MA 02129

Time: Immediately following Wastewater Comm.

### **AGENDA**

#### **A. Approvals**

1. Approval of a Program to Study Lead levels in MWRA Water Communities
2. Approval of Program Guidelines for the MWRA Lead Service Line Replacement Loan Program
3. Approval of Revisions to the Program Guidelines for the MWRA Local Water System Assistance Program to be Consistent with the Lead Service Line Replacement Loan Program Guidelines

#### **B. Contract Awards**

1. Flow Testing Services for MWRA's Revenue Water Meters: Complete Control Services, Inc., Bid WRA-4181
2. Beacon Street Line Water Pipeline Repair: R. Zoppo Corp., Contract 7458
3. Southern Extra High Pipeline Section 111 (Boston): P. Gioioso and Sons, Inc., Contract 6454

#### **C. Contract Amendments/Change Orders**

1. Dam Safety Compliance and Consulting Services: GZA GeoEnvironmental, Inc., Contract OP-228, Amendment 2
2. Section 4 Webster Avenue Pipe and Utility Bridge Replacement: NEL Corporation, Contract 7335, Change Order 5

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the  
Water Policy and Oversight Committee

April 13, 2016

A meeting of the Water Policy and Oversight Committee was held on April 13, 2016 at the Authority headquarters in Charlestown. Chairman Blackmon presided. Present from the Board were Ms. Wolowicz and Messrs. Carroll, Cotter, Flanagan, Foti, Pappastergion, Peña, Vitale and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Corrie Barrett, Nava Navanandan, John Vetere, Mike Hornbrook, and Bonnie Hale. The meeting was called to order at 12:10 p.m.

**Contract Amendments/Change Orders**

\*Southborough Water Quality Laboratory Upgrades: Paul J. Rogan Co., Inc., Contract 6650A, Change Order 3

The Committee recommended approval of Change Order 3 (ref. agenda item A.1).

**Information**


Section 4 Webster Avenue Pipe and Utility Bridge Replacement: NEL Corporation, Contract 7335

Staff gave a presentation depicting the failures of this new water main during pressure testing, and discussed potential responsibility for redesign and construction, and options on how to proceed. There was general discussion and question and answer.

The meeting adjourned at 12:25 p.m.

\* Approved as recommended at April 13, 2016 Board of Directors meeting.

**STAFF SUMMARY**


**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** May 11, 2016  
**SUBJECT:** Approval of a Program to Study Lead Levels in MWRA Water Communities

---

COMMITTEE: Water Policy & Oversight

INFORMATION  
 VOTE

Carolyn M. Fiore, Deputy Chief Operating Officer  
Stephen Estes-Smargiassi, Dir. of Planning and Sustainability  
Preparer/Title

  
Michael J. Hornbrook  
Chief Operating Officer

---

**RECOMMENDATION:**

To authorize the Executive Director, on behalf of the Authority, to enter into an agreement with Massachusetts Department of Public Health to establish a program to determine, by examination of the local records or by inspection, if the residences of the children identified with elevated blood lead levels have a lead water service line to the home. The Massachusetts Department of Public Health shall provide MWRA with the results of these inspections to determine the correlation between lead services and children with elevated blood lead levels.

**DISCUSSION:**

Staff believe the advantage of an agreement with Massachusetts Department of Public Health (MDPH) would be two-fold: it will assist communities in prioritizing their lead service removal efforts and it responds to Mr. Carroll's interest in determining if the residences with children that have elevated blood lead levels also have lead service lines.

MDPH reports a total of 1,503 children ages 9 months to 47 months with elevated levels of lead in MWRA water communities. That represents 2.4% of the 61,699 children tested in 2014. The following is a breakdown by severity:

- 1,503 with blood lead levels over 5 µg/dl, which is the CDC reference level triggering actions by the child's physician;
- 235 with blood lead levels over 10 µg/dl, which trigger additional action by the child's physician and the state or local health department; and
- 17 with blood lead levels over 25 µg/dl, which is considered severe, and triggers additional attention and action.

Under the proposed program, if a lead service line is located in a home with a child with blood lead levels over 10 µg/dl, MDPH shall notify the local department of public health and the local water department that a lead service line removal at that home must be a priority for the municipality.

Staff have had preliminary discussions with MDPH and they are amenable to such a program and would be willing to participate for in-kind services. MDPH Community Health workers would visit the homes, attempt to determine if there is a lead service line present and arrange for a water sample to be taken with the homeowner, then MWRA would process the water samples.

**BUDGET/FISCAL IMPACT:**

This water testing program will be funded from CEB.

**ATTACHMENT:**

MDPH List of Children's Blood Levels within MWRA Communities

Community	Population 9-47 mo.	Total Screened	Blood Lead Levels (µg/dL) 10 to 14	Blood Lead Levels (µg/dL) 25 and above
Arlington	1891	1505	3	0
Bedford (P)	446	527	1	0
Belmont	1065	666	1	0
Boston	21270	17852	91	9
Brookline	2234	1637	1	0
Canton (P)	773	550	1	0
Chelsea	2150	1932	4	1
Dedham (P)	873	623	2	0
Everett	2048	1732	7	0
Framingham	3113	1958	7	0
Lexington	830	641	0	0
Lynnfield	277	321	0	0
Malden	2614	1952	8	1
Marblehead	559	468	3	0
Marlborough (P)	1720	1148	6	0
Medford	1986	1457	5	1
Melrose	1006	866	2	0
Milton	945	784	3	0
Nahant	59	48	0	0
Needham (P)	1122	923	1	0
Newton	3007	2108	4	0
Northborough (P)	340	385	0	0
Norwood	1182	868	3	0
Peabody (P)	1525	1344	0	0
Quincy	3331	2845	6	2
Reading	927	646	1	1
Revere	2244	1984	6	0
Saugus	760	657	1	0
Somerville	2258	1959	9	0
Southborough	234	232	0	0
Stoneham	620	556	2	0
Stoughton (P)	966	788	0	0
Swampscott	452	376	3	0
Wakefield (P)	869	679	0	0
Waltham	2210	1655	7	0
Watertown	1300	789	5	0
Wellesley (P)	912	674	1	0
Weston	249	201	0	0
Westwood (P)	402	310	0	0
Wilmington (P)	766	568	2	0
Winchester (P)	833	673	1	0
Winthrop	567	453	6	0
Woburn (P)	1566	1177	3	1
Chicopee (CVA)	2089	1510	11	1
South Hadley (CVA)	407	367	2	0
Wilbraham (CVA)	325	305	0	0
<b>Totals</b>	<b>77322</b>	<b>61699</b>	<b>219</b>	<b>17</b>

(P) = partially supplied community

(CVA) = Chicopee Valley Aqueduct community

## STAFF SUMMARY


**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** May 11, 2016  
**SUBJECT:** Approval of Program Guidelines for the MWRA Lead Service Line Replacement Loan Program

COMMITTEE: Water Policy & Oversight

Carl H. Leone, Senior Program Manager  
Carolyn M. Fiore, Deputy Chief Operating Officer  
Stephen Estes-Smargiassi, Dir. Of Planning and Sustainability  
Preparer/Title

           INFORMATION

  X   VOTE

  
Michael J. Hornbrook  
Chief Operating Officer

*By its vote on March 16, 2016, the Board approved an enhancement to the Local Water System Assistance Program to provide up to \$100 million in 10-year zero-interest loans to communities solely for efforts to fully replace lead service lines. The Program was initially recommended by the Executive Committee of the MWRA's Advisory Board. This Staff Summary recommends for approval the Program Guidelines that will be used to allow communities to apply for and receive MWRA loans for community lead service line replacement projects. The full Advisory Board has reviewed and unanimously approved these guidelines.*

### RECOMMENDATION:

To approve the Program Guidelines for the MWRA Lead Service Line Replacement Loan Program substantially as outlined in this Staff Summary and consistent with the process currently used under the Local Water System Assistance Program.

### DISCUSSION:

MWRA's goal in providing financial assistance to member communities is to improve local water systems so that the high quality water MWRA delivers can make it all the way to the consumer's tap. The presence of a lead service line connecting a home to the main in the street can lead to elevated lead levels in tap water, especially if that water sits stagnant for an extended period. MWRA's stable water quality and effective corrosion control treatment reduce the risk that a lead service line will cause elevated lead levels, and measured lead levels in high risk homes have decreased by 90 percent since corrosion control was brought on-line in 1996. However, the risk of elevated levels remains as long as lead service lines are in use.

The program will provide 10-year zero-interest loans to communities to create local programs to fully remove lead service lines from the community water main all the way to the home or business. Each community will develop its own program, tailored to their local circumstances. Staff anticipate that there will be a range of different approaches to encourage local customers to participate in lead service line removal programs. Applications under the Lead Loan Program are likely to begin with smaller projects and ramp up as communities develop their individual

programs, enhance existing inventories/records, and engage individual customers via outreach and education. Future EPA requirements may stimulate lead service line removal work over the next few years.

Based on community applications, Lead Loan Program funds will be distributed in either of two ways:

1. Together with Local Water System Assistance Program funds for local projects that combine a water pipeline rehabilitation/replacement project jointly with lead service line identifications/replacements; or,
2. Separate from Local Water System Assistance Program funds for local projects that specifically target lead service line identification and/or replacements.

### **Outline of Program Guidelines**

Program Guidelines for the Lead Service Line Replacement Loan Program have been vetted through the Advisory Board's Operation Committee, Executive Committee, and full Advisory Board. As noted in the attached letter, the Advisory Board is in support of the Program Guidelines as outlined below.

- The MWRA Lead Service Line Replacement Loan Program will be referenced as the "Lead Loan Program" or "LLP" for short.
- The 45 full and partial MWRA water communities<sup>1</sup> that are currently eligible for water loans under MWRA's Local Water System Assistance Program will be eligible under the Lead Loan Program.
- The approved \$100 million in loan funds will be provided as a pool of funds available to all eligible communities for distribution beginning in FY17 for local lead service line identification/removal projects.
- Community projects to identify and replace water service lines so that all lead pipes are fully removed from both the public and private portions of the service line will be eligible under the Lead Loan Program. As part of the application process, the community will be required to describe how they will address private lead service lines.
- While the Program's major objective is funding construction projects that will replace the public and private portions of lead service lines; related records inventories, database development, public education outreach, planning, design, construction inspection, police details, Bond Counsel costs, etc. required to implement appropriate local projects will also be

---

<sup>1</sup> MWRA has a total of 50 water communities (with Dedham/Westwood Water District counted as one), of which 45 will be eligible for financial assistance under the Lead Loan Program and are allocated loan funds under the Local Water System Assistance Program. The five ineligible water communities have special case consideration, these include: Cambridge, which receives MWRA water on an emergency-only basis; Lynn, which receives MWRA water only for the GE plant; as well as Clinton, Leominster (emergency only), and Worcester (emergency only) that draw untreated (raw) water from the Wachusett Reservoir.

eligible for loan assistance. For force account work such as summer interns or contract employees, only direct labor costs (not including overhead or overtime costs) will be eligible.

- Community projects that provide a homeowner incentive for lead service line replacement will be eligible.
- MWRA Lead Loan Program funds will not be used for replacement or upgrade of plumbing inside homes or buildings beyond the normal service line connection from the water main to the building that generally terminates a short distance inside the foundation wall at the water meter.
- The financial assistance application, staff review, funding distribution, and loan repayment process currently used for the Local Water System Assistance Program will be generally followed for the Lead Loan Program. Loan funds will be available beginning in FY17 and distribution of funds will be targeted to the middle of each fiscal quarter (mid-August, November, February, and May). The initial date for determining community project costs that may be eligible to receive funding is July 1, 2016.
- Binding commitments to provide financial assistance for local lead service line replacement projects will be issued by MWRA in the form of a Financial Assistance Agreement. The Financial Assistance Agreement will stipulate all applicable terms and conditions of the loan funding provided by MWRA for the community's project, including, but not limited to: scope of work, schedule, project inspection and reporting, audit and closeout provisions; etc.
- Appended to the Financial Assistance Agreement will be a separate Loan Agreement. The Loan Agreement process includes: (1) an opinion of the community's Bond Counsel stating that the loan is a valid general obligation of the municipality; and (2) a Water Bond (or similar instrument approved by MWRA) prepared by the community's Bond Counsel that stipulates the loan repayment schedule. Community loan repayments will be interest-free over ten years.
- Once a proposed project has been approved and an award amount designated, MWRA and the community will cooperatively schedule execution of the Financial Assistance and Loan Agreements and distribution of loan funds via electronic fund transfer into a specific community Massachusetts Municipal Depository Trust (or similar) account.
- With implementation of the Lead Loan Program beginning in FY17, MWRA will expand the recommended *Community Water System Maintenance and Improvement Programs* to cover lead service line replacements. Under the Local Water System Assistance Program application process for both Lead Loan Program Projects and Water Projects, communities will need to acknowledge the MWRA recommended components for a **“Community Lead Service Line Replacement Program.”** The MWRA recommended program incorporates at least the following:
  1. Communities should clearly establish that it is their goal to fully remove all lead pipe from both publicly-owned and privately-owned water service line connections;



2. Communities should commit to a comprehensive lead service line inventory program to compile a listing of properties with full or partial lead service lines that will be made available to the public via web page or other similar public access vehicle (subject to disclaimer for accuracy based on best available information);
  3. Communities should target proactive outreach to customers with lead service lines to provide educational information regarding the risks of lead exposure and information encouraging the customer to participate in the community lead service line replacement program so that the privately-owned portion is replaced concurrent with the publicly-owned portion;
  4. Communities should maintain ongoing proactive outreach to customers with known privately-owned lead service lines;
  5. Communities should include a unit cost bid item for public and private portion service line replacement in all water pipeline projects so that a mechanism exists for full removal of lead service lines; and,
  6. As a secondary measure, communities' lead service line replacement programs should include replacement of lead gooseneck connections when encountered during infrastructure rehabilitation or construction.
- The EPA continues to review the Lead and Copper Rule and is expected to propose a number of substantial changes. As revisions to the Lead and Copper Rule evolve, MWRA will consider bringing to the Board recommendations to modify (as needed) the *Community Water System Maintenance and Improvement Programs* to be consistent with EPA regulations regarding lead service line replacements.
  - MWRA staff will track the community's utilization of loan funds and coordinate submittal of progress reports documenting eligible cost spending to account for the loan funds distributed.
  - The community, the community's engineer(s), and the community's contractor(s) are required to maintain books, records, documents, and other evidence directly related to the performance of all work receiving funding under the Financial Assistance Agreement in accordance with generally accepted professional practice and appropriate accounting procedures and practices. MWRA may audit these records up to seven years after completion of the project.
  - The Guidelines Section 6 – Equal Employment, Antidiscrimination, and Affirmative Action Goals will be consistent with those established for the Local Water System Assistance Program.
  - Annual progress reports to the Board will detail funds distributed, progress on local projects, what is working, what may need improvement, and potential recommendations for program enhancements that make sense.
  - As with other community financial assistance programs, only funds already distributed to communities are guaranteed, and all funding programs are subject to Board reconsideration.

With overall community water system needs in mind, MWRA staff will continue to work closely with the Advisory Board to develop sound recommendations for future enhancements to both the new Lead Loan Program and the existing Local Water System Assistance Program.

**BUDGET/FISCAL IMPACT:**

The pace of spending, and thus MWRA borrowing for the program, will depend on the level of interest by both communities and homeowners, and on any future regulatory requirements for lead service line replacement. Staff believe it is very likely EPA will amend the Lead and Copper Rule to require removal of all lead services when it publishes the draft regulations in 2017. The estimated average cost to replace a lead service is typically between \$3,000 and \$5,000. Based on that estimate, staff believe that the \$100 million program is sufficient to result in removal of all lead services in the MWRA service area.

Estimates for funding distributions and associated repayments over time for the new Lead Loan Program will be included in the Final FY17 Capital Improvement Program (CIP) that will be presented to the Board for discussion and approval in June.

The CIP includes an overall net budget of zero dollars for water system financial assistance programs because community loans are offset by repayments over time, and are not included within the CIP cap. As with the current Local Water System Assistance Program, the cost of interest will be included in each year's Current Expense Budget. Assuming a yearly borrowing of \$10 million, implementation of a \$100 million zero interest loan program for lead service line removal would have a first year interest cost of approximately \$450,000. Over the life of the program, it would cost the Authority an estimated total of \$11 to \$26 million in interest expenses depending on market conditions at the time of borrowing.

**MBE/WBE PARTICIPATION:**

For the Local Water System Assistance Program, MBE/WBE goals for community projects are established in the Program Guidelines. The same MBE/WBE goals will be established for the Lead Service Line Replacement Loan Program. Due to the specialized nature of community projects under the Lead Loan Program, MBE/WBE goals may be difficult to meet. The Program Guidelines will recommend communities make positive efforts to use MBE and WBE businesses for professional services, non-professional services, and construction related work that receives loan funding from MWRA.

**ATTACHMENTS:**

Attachment 1 - Letter from MWRA Advisory Board

Attachment 2 - Local Water System Assistance Program, Program Guidelines for Lead Service Line Replacement Loan Program Projects



May 3, 2016

Mr. Fred Laskey, Executive Director  
Massachusetts Water Resource Authority  
100 First Avenue, Building 39  
Boston, Massachusetts 02129-2043

Dear Mr. Laskey;

Since the lead water service pipe issue surfaced earlier this year in Flint, Michigan, both the Authority and Advisory Board have proactively worked to insure our communities are provided with necessary resources to stay ahead of this issue.

In February, out of a discussion that emerged by my Executive Committee members and you, the concept of a Lead Water Service Line Replacement Loan Program was debated and endorsed by the MWRA Board of Directors. We jointly held an informational workshop on lead water service pipes for our communities, as well as working with the Commonwealth to develop a School Lead Water Testing Program. The Advisory Board looks forward to commencing these programs.

To that end, at the April Advisory Board Meeting, our members unanimously voted to approve guidelines, as presented by your staff, for the \$100 million Lead Water Service Line Replacement Program (as included in your Board Summary). The Advisory Board thanks MWRA staff and the Board of Directors for their leadership in this issue. We look forward to working with the MWRA in eliminating lead water service lines in our communities.

If you have any additional questions and/or comments please contact Joe Favaloro.

Sincerely,

Louis M. Taverna, P.E.  
Chairman, MWRA Advisory Board

# MASSACHUSETTS WATER RESOURCES AUTHORITY



## LOCAL WATER SYSTEM ASSISTANCE PROGRAM

### PROGRAM GUIDELINES FOR LEAD SERVICE LINE REPLACEMENT LOAN PROGRAM PROJECTS

**July 2016**

MASSACHUSETTS WATER RESOURCES AUTHORITY  
CHARLESTOWN NAVY YARD  
100 FIRST AVENUE  
BOSTON, MA 02129

## TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1 INTRODUCTION	
1.1 Establishment of Massachusetts Water Resources Authority Lead Service Line Replacement Loan Program	1
1.2 Purpose	1
1.3 Term of the Program and Annual Review	1
1.4 Definitions and Abbreviations	1
2 FINANCIAL ASSISTANCE APPLICATION AND DISTRIBUTION OF FUNDS	
2.1 Overview	2
2.2 Pool of Funds for Lead Loan Program	2
2.3 MWRA Water Communities Eligible for the Lead Loan Program	2
2.4 Application for Financial Assistance	3
2.5 Initiation Date for Eligible Project Costs	3
2.6 Financial Assistance Agreement, Loan Agreement, and Distribution/Repayment of Funds	4
2.7 Eligible Project Costs	5
2.8 Ineligible Project Costs	6
2.9 MWRA Recommended Community Lead Service Line Replacement Program	7
2.10 Multiple Financial Assistance Distributions	8
2.11 Limitation on Financial Assistance Award	9
2.12 Interaction With Other MWRA Funding Programs, the State Revolving Fund, and Other Programs of Assistance	9
2.13 Massachusetts Municipal Depository Trust (MMDT) Account and Use of Earned Interest	9
3 FINANCIAL ASSISTANCE AGREEMENT	
3.1 Overview	10
3.2 Projects With Retroactive Funding	10
3.3 Assignment of Agreement Requirements to a Third Party	11
4 LOAN REPAYMENT REQUIREMENTS	
4.1 Repayment of Interest-Free Loan	12

**TABLE OF CONTENTS (Continued)**

<u>SECTION</u>	<u>PAGE</u>
5 EXPENDITURE VERIFICATION REQUIREMENTS, PROJECT INSPECTION, PROJECT CLOSEOUT, AND AUDIT PROVISIONS	
5.1 Expenditure Verification Requirements	13
5.2 Project Inspection	13
5.3 Project Closeout Provisions	13
5.4 Project Audit Provisions	14
6 EQUAL EMPLOYMENT OPPORTUNITY, ANTIDISCRIMINATION, AND AFFIRMATIVE ACTION	
6.1 Overview	15
6.2 Goals for Professional Services	15
6.3 Goals for Non-Professional Services	16
6.4 Goals for Construction	16
6.5 Force Account Work	16
7 INSTRUCTIONS FOR COMPLETING FINANCIAL ASSISTANCE APPLICATION	
7.1 Application Instructions	17
 <u>APPENDICES</u>	
Appendix A - Definition of Terms	21
Appendix B - Abbreviations	22
 <u>ATTACHMENTS</u>	
Attachment 1 -MWRA Lead Service Line Replacement Loan Program Financial Assistance Application	A-1

## SECTION 1 - INTRODUCTION

### 1.1 Establishment of Massachusetts Water Resources Authority's Lead Service Line Replacement Loan Program

The Massachusetts Water Resources Authority (MWRA) Board of Directors, by their vote on March 16, 2016, authorized the enhancement of the Local Water System Assistance Program to provide up to \$100 million in 10-year zero-interest loans to communities under the MWRA Lead Service Line Replacement Loan Program. The program will also be referenced as the “Lead Loan Program” or “LLP” for short. This interest-free loan program is designed to assist member water communities to rehabilitate or replace water service lines so that all lead pipe is fully removed. The program will help upgrade local water systems to reduce the potential for elevated lead levels at customer taps and maintain high water quality conditions throughout the system. The review of applications for financial assistance, the determination of eligible projects, and the distribution and repayment of funds will be performed in accordance with the provisions of the Lead Loan Program, as presented in this "Program Guidelines for Lead Service Line Replacement Loan Program Projects" document. These Guidelines were approved by the Board of Directors on xxxx (add date) xxxx.

### 1.2 Purpose

The purpose of the MWRA Lead Loan Program is to provide incentives in the form of interest-free loans to MWRA's water service area communities in order to upgrade both community-owned and privately-owned portions of local water systems to reduce the potential for elevated lead levels at customer taps and maintain high water quality conditions throughout the system. The presence of lead service lines connecting homes and businesses to local water mains can lead to elevated lead levels in tap water, especially if water sits stagnant in a lead service for an extended period. MWRA's stable water quality and effective corrosion control treatment reduce the risk that lead service lines will cause elevated lead levels. However, the risk of elevated levels remains as long as lead service lines are in use. While the Program's major objective is funding construction projects that will replace the public and private portions of lead service lines, related records research, identification, planning, design, and construction inspection costs required to implement appropriate lead service line replacement projects are also eligible for loan assistance. Eligible and ineligible project costs are listed in Sections 2.7 and 2.8, respectively.

### 1.3 Term of the Program and Annual Review

The MWRA Lead Loan Program provides up to \$100,000,000 in interest-free loans to communities beginning in FY17 (July 1, 2016). The end date for the program has not been established. MWRA staff will provide the Board of Directors annual updates on progress of lead service line replacements and loan distributions. In the future, the MWRA Board of Directors will establish an end date to conclude the Lead Loan Program. All loan assistance commitments made prior to the conclusion of the Program shall be fulfilled under the conditions established in each Financial Assistance and Loan Agreement.

### 1.4 Definitions and Abbreviations

Definitions and abbreviations are listed in APPENDIX A and APPENDIX B, respectively.

## SECTION 2 - FINANCIAL ASSISTANCE APPLICATION AND DISTRIBUTION OF FUNDS

### 2.1 Overview

Binding commitments to provide financial assistance for local lead service line replacement projects will be issued by MWRA's Executive Director, Director of Finance, or Treasurer in the form of a "Financial Assistance Agreement." An offer for financial assistance will be made by MWRA following the review of a "Financial Assistance Application" and the determination by MWRA that the project is eligible for financial assistance. The filing of a Financial Assistance Application by a community will not constitute a binding commitment by MWRA to provide financial assistance. A Financial Assistance Agreement may be executed at the discretion of MWRA subject to the availability of Program funds. Financial Assistance Agreements will be executed with communities and project funds will be distributed on quarterly funding distribution dates. **The target distribution dates will be on or about February 15, May 15, August 15, and November 15 of each year.** The actual distribution dates will vary and will be determined by MWRA when the Financial Assistance Application is finalized. To be eligible to execute a Financial Assistance Agreement on a particular funding distribution date, the community must have submitted a complete Financial Assistance Application in sufficient time to be reviewed and approved by MWRA staff at least thirty (30) calendar days prior to the proposed funding distribution date. It must also be the community's intent to begin the project within ninety (90) calendar days of execution of the agreement. A Financial Assistance Application may be approved by MWRA if the proposed project meets the eligibility criteria in Section 2.7 and 2.8.

### 2.2 Pool of Funds for Lead Loan Program

The approved \$100 million in loan funds will be provided as a pool of funds available to all eligible communities (see Section 2.3 below) to draw from beginning in FY17 via the financial assistance application process for local lead service line identification/removal projects. The funds will be available for community loans until the MWRA Board of Directors establishes an end date to conclude the Lead Loan Program.

### 2.3 MWRA Water Communities Eligible for the Lead Loan Program

The 45 full and partial MWRA water communities that are currently eligible for water loans under MWRA's Local Water System Assistance Program are also eligible under the Lead Loan Program. These include 32 fully-supplied communities: Arlington, Belmont, Boston, Brookline, Chelsea, Chicopee, Everett, Framingham, Lexington, Lynnfield Water District, Malden, Marblehead, Medford, Melrose, Milton, Nahant, Newton, Norwood, Quincy, Reading, Revere, Saugus, Somerville, South Hadley Fire District #1, Southborough, Stoneham, Swampscott, Waltham, Watertown, Weston, Wilbraham, and Winthrop; and 13 partially-supplied communities: Bedford, Canton, Dedham/Westwood Water District, Marlborough, Needham, Northborough, Peabody, Stoughton, Wakefield, Wellesley, Wilmington, Winchester, and Woburn. Five special case water communities are not eligible for Lead Loan Program funds: Cambridge, which receives MWRA water on an emergency-only basis; Lynn, which receives MWRA water only for the GE plant; as well as Clinton, Leominster (emergency only), and Worcester (emergency only) that draw untreated (raw) water from the Wachusett Reservoir.



## 2.4 Application for Financial Assistance

Each eligible (see Section 2.3) MWRA water service area community may apply for financial assistance funding under the Lead Loan Program. Based on the type of community project and application submitted to MWRA, Lead Loan Program funds will be distributed in either of two ways:

1. Under a Local Water System Assistance Program joint application for a *Water Project* and *Lead Loan Program Project*, MWRA Lead Loan Program funds will be distributed together with Local Water System Assistance Program Water Project funds to finance local projects that combine lead service line identifications/replacements with a water pipeline rehabilitation/replacement project; or,
2. Under a Local Water System Assistance Program application for a *Lead Loan Program Project* only, MWRA Lead Loan Program funds will be distributed (separate from any *Water Project* funds) for local projects that specifically target lead service line identification and/or replacements.

Financial Assistance Applications should be submitted to:

Massachusetts Water Resources Authority  
Charlestown Navy Yard  
100 First Avenue  
Boston, MA 02129  
Attn: Planning - Community Support Program

The Lead Loan Program Financial Assistance Application is provided as Attachment 1. An electronic copy (MS Word) of the application is available at:

<http://www.mwra.com/comsupport/communitysupportmain.html>, or from:

- Elaine M. Donahue, Project Manager, [elaine.donahue@mwra.com](mailto:elaine.donahue@mwra.com) or (617) 788-4824, or
- Kristen Hall, Project Manager, [kristen.hall@mwra.com](mailto:kristen.hall@mwra.com) or (617) 788-4831.

The direct link to the Lead Loan Program web page is: xxxx (add link) xxxx. The applicant should provide as complete information as possible on the proposed project. The information provided will be reviewed by MWRA staff to determine if the project is a viable Lead Service Line Replacement Loan Program project and assess eligible project costs. Once a proposed project has been approved and an award amount designated, MWRA and the community will cooperatively schedule execution of the Financial Assistance and Loan Agreements and distribution of loan funds on or about one of the quarterly funding distribution dates.

## 2.5 Initiation Date for Eligible Project Costs

The initial date for determining community project costs that are eligible to receive funding under the MWRA Lead Loan Program is July 1, 2016. All costs incurred for eligible lead service line replacement work performed within eligible MWRA service area communities on or after July 1, 2016, regardless of the beginning date of the project, will be considered for eligibility during review of a Financial Assistance Application. If projects were substantially completed before July 1, 2016 they will not be eligible. Eligible and ineligible project costs are outlined in Sections 2.7 and 2.8, respectively.

## 2.6 Financial Assistance Agreement, Loan Agreement, and Distribution/Repayment of Funds

All project information submitted as part of the Financial Assistance Application will be used by MWRA to determine the portion of the total project cost eligible under the Lead Loan Program. Based on the determined eligible project cost, an appropriate "Award Amount" will be established for each project. For MWRA Lead Loan Program funding, one hundred percent (100%) of the total Award Amount will be provided as an interest-free loan.

Financial Assistance and Loan Agreements will be executed by MWRA's Executive Director, Director of Finance, or Treasurer on behalf of MWRA and an appropriate representative of the community who has been authorized to act as the municipality's agent. Documentation of this authorization will be made part of the executed Financial Assistance Agreement. **Throughout the term of the Program, Financial Assistance and Loan Agreements will be executed on (or about) the following quarterly funding distribution dates: February 15, May 15, August 15, and November 15.**

The Loan Agreement will incorporate an opinion from the community's Bond Counsel stating that the loan portion of the financial assistance is a valid general obligation of the municipality. The community must also certify that all actions required by the municipality to expend the financial assistance funds have been obtained; that all permits, easements, and all other project requirements and approvals have been obtained; and that implementation of the project is intended to begin within ninety (90) calendar days of execution of the agreement. The Financial Assistance Agreement will contain the project scope of work, project schedule, and additional project specific terms and conditions. Following execution of the Financial Assistance and Loan Agreements, MWRA will have the entire financial assistance award amount electronically transferred into a Massachusetts Municipal Depository Trust (MMDT) account (or similar account approved by MWRA) designated and arranged by the community. If the community has an existing MMDT account used for previous Local Water System Assistance Program loans, that account can also be used for the Lead Loan Program. **All financial assistance funds distributed by MWRA for lead service line replacement projects, shall be applied to the cost of approved community lead service line replacement projects. All earnings (interest) from the MMDT account shall be applied either to an approved lead service line replacement project or other approved community water system rehabilitation project. If all lead service line replacement projects are completed and loan funds and/or interest remain in the MMDT account, those funds must be utilized on MWRA approved community water system rehabilitation projects.**

The interest-free loan will be repaid to MWRA in ten equal payments, over a ten-year period, beginning one year from the original quarterly funding distribution date. For example, if a community receives \$1,000,000 from the MWRA Lead Loan Program during the November 2016 funding quarter, then the community would repay to MWRA a total of \$1,000,000 in ten equal payments of \$100,000 each. The ten repayments would be made on November 15 in the years 2017 through 2026. The loan can be repaid over a shorter period, if the community so desires. Loan repayment requirements are presented in Section 4.

## 2.7 Eligible Project Costs

Financial assistance awarded by MWRA under this program shall be solely for the purpose of rehabilitating or replacing water service lines so that all lead pipe is fully removed. MWRA's Lead Loan Program will help upgrade local water systems to reduce the potential for elevated lead levels at customer taps and maintain high water quality conditions throughout the system. While the Program's major objective is funding construction projects that will replace the public and private portions of lead service lines, related records research, identification, planning, design, and construction inspection costs required to implement appropriate lead service line replacement projects are also eligible for loan assistance. Costs that are eligible under MWRA's Lead Loan Program include, but are not limited to:

- (a) Identification of water service connections (or portions of service connections) constructed of lead including related records research, inventory/database development, house to house inspection, development of outreach/education materials, mapping of lead service lines, and other planning activities incidental thereto.
- (b) Construction, reconstruction, rehabilitation, alteration, remodeling or other improvements to replace lead water service lines to fully remove all lead pipe. Costs for water pipeline rehabilitation incidental to the replacement of lead service lines are eligible. The replacement of lead gooseneck connections is eligible, either when encountered during water system rehabilitation/construction or if targeted through a specific rehabilitation project. Slip lining of lead water services will not be eligible. For each local water service line, all lead service pipe (both public and private) must be fully removed to be eligible.
- (c) Community projects that provide a homeowner incentive for lead service line replacement through rebates for privately funded lead service line replacements or other similar incentive program will be eligible.
- (d) Costs that are reasonable and necessary to repair private property areas directly impacted by eligible construction work so that the private property is as near as practical to existing conditions. Eligibility of work on private property may need to be reviewed on a project by project basis. Work to improve private property will not be eligible.
- (e) Paving costs that are reasonable and necessary to repair the roadway and/or sidewalk areas directly impacted by eligible construction work will also be eligible and be reviewed on a project by project basis. Eligibility of trench width pavement versus full width overlay pavement will be reviewed on a project by project basis. Cost for full depth roadway reconstruction will not be eligible.
- (f) Police details associated with eligible project work.
- (g) Engineering services, in connection with project design including surveying, subsurface exploration, test pits, preparation of plans, specifications, and public bidding documents, for eligible lead service line replacement projects and activities incidental thereto.

- (h) Resident engineer inspection and construction administration services in connection with eligible lead service line replacement projects required to ensure that the work is accomplished in accordance with the design drawings and specifications and applicable State laws and activities incidental thereto.
- (i) Direct labor only (not including overhead or overtime costs) for force account work associated with planning, design, construction, or construction inspection of eligible lead service line replacement projects.
- (j) Establishment of a Massachusetts Municipal Depository Trust (MMDT) or similar account used solely for the deposit, withdrawal, and tracking of financial assistance funds.
- (k) Bond counsel services, or other legal services, in connection with review of the Loan Agreement, Water Bond, and opinion of Bond Counsel.

**Please See Section 2.8 (f) and 2.8 (g), below:** Any and all costs associated with the testing, handling, management, and disposal of hazardous waste, as defined under 310 CMR 30.000 are ineligible costs. Any and all costs associated with the testing, handling, management, and disposal of other contaminated or hazardous material (not meeting the definition of hazardous waste, as defined under 310 CMR 30.000) and determined to not be suitable for trench refill shall be limited to ten percent (10%) of the total eligible project cost.

## 2.8 Ineligible Project Costs

Costs which are ineligible under the Lead Loan Program shall include, but are not limited to:

- (a) Costs in excess of the approved financial assistance Award Amount.
- (b) Costs for services outside the scope of the approved project, except as modified by an MWRA approved revised project scope of services.
- (c) Ordinary operating expenses of public works departments, water departments, water commissions, water districts, or local government, and overtime and overhead costs associated with eligible force account work.
- (d) Excessive paving costs that are not reasonable and necessary to repair the roadway and/or sidewalk areas directly impacted by eligible construction work.
- (e) Excessive costs to repair private property or costs to improve private property that are not reasonable and necessary as directly impacted by eligible construction work.
- (f) Any and all costs associated with the testing, handling, management, and disposal of hazardous waste, as defined under 310 CMR 30.000.

- (g) Any and all costs associated with the testing, handling, management, and disposal of other contaminated or hazardous material (not meeting the definition of hazardous waste, as defined under 310 CMR 30.000) and determined to not be suitable for trench refill that exceeds ten percent (10%) of the total eligible project cost.
- (h) Costs incurred under third party agreements, absent specific contract language which conveys the applicable terms and conditions of the Financial Assistance Agreement to the third party.
- (i) Costs for which payment has been or will be received under any other MWRA, state, or federal grant or loan funding assistance program.
- (j) Costs for the preparation of an MWRA Financial Assistance Application or preparation of funding applications for any other agency.
- (l) Costs for sewer system maintenance or rehabilitation, except sewer repair work required due to construction conflicts with work directly related to eligible lead service line replacement work.
- (m) Charges for the use of vehicles or equipment owned by the applicant.
- (n) Costs for obtaining permits or licenses by the applicant.
- (n) Bonus payments to contractors for completion of construction earlier than contracted completion date.
- (o) Personal injury compensation, claims related to wrongful deaths, or property damages arising out of the project, however determined.
- (p) Costs of equipment or material procured in violation of state or federal law.
- (q) Fines and penalties.
- (r) Costs of the purchase of real property.

## 2.9 MWRA Recommended Community Lead Service Line Replacement Program

Under the Local Water System Assistance Program application process for both Lead Loan Program Projects and Water Projects, communities will need to acknowledge the MWRA recommended components for a **“Community Lead Service Line Replacement Program.”** The MWRA recommended program incorporates at least the following:

1. Communities should clearly establish that it is their goal to fully remove all lead pipe from both publicly-owned and privately-owned water service line connections;

2. Communities should commit to a comprehensive lead service line inventory program to compile a listing of properties with full or partial lead service lines that will be made available to the public via web page or other similar public access vehicle (subject to disclaimer for accuracy based on best available information);
3. Communities should target proactive outreach to customers with lead service lines to provide educational information regarding the risks of lead exposure and information encouraging the customer to participate in the community lead service line replacement program so that the privately-owned portion is replaced concurrent with the publicly-owned portion;
4. Communities should maintain ongoing proactive outreach to customers with known privately-owned lead service lines;
5. Communities should include a unit cost bid item for public and private portion service line replacement in all water pipeline projects so that a mechanism exists for full removal of lead service lines; and,
6. As a secondary measure, communities' lead service line replacement programs should include replacement of lead gooseneck connections when encountered during infrastructure rehabilitation or construction.

Applicant communities must acknowledge these six recommended components for a **Community Lead Service Line Replacement Program**. This acknowledgement is intended to make sure communities understand that implementing a lead service line replacement program, combined with other water system rehabilitation projects, will help maintain high water quality in the distribution systems and at the customer's tap.

#### 2.10 Multiple Financial Assistance Distributions

If a community seeks additional MWRA funding for additional eligible project costs on a previously funded project, a separate Financial Assistance Application may be submitted to MWRA. Financial assistance for additional community project costs or additional projects will be provided through execution of a separate Financial Assistance Agreement. Communities may receive financial assistance through the execution of multiple Financial Assistance Agreements. The repayment amount and schedule established in each Loan Agreement shall not be modified due to the execution of a second (or multiple) Loan Agreements. The repayment amount and schedule for each Financial Assistance Agreement shall be established independently.

## 2.11 Limitation on Financial Assistance Award

The award of financial assistance by MWRA shall not constitute a commitment for approval of financial assistance for a subsequent project or additional work under the initial project. If a subsequent project or additional work under the initial project is initiated prior to execution of a Financial Assistance Agreement, the applicant proceeds at its own risk. However, all costs incurred for community lead service line replacement projects on or after July 1, 2016 will be considered for eligibility under the Lead Loan Program, even if the project is underway prior to submittal of the Financial Assistance Application.

## 2.12 Interaction With Other MWRA Funding Programs, the State Revolving Fund, and Other Programs of Assistance

All costs for which payment has been or will be received under MWRA's Local Water System Assistance Program, MWRA's CSO Program, MWRA's I/I Local Financial Assistance Program, the State Clean Water or Drinking Water Revolving Fund, or any other state, federal, or other program of assistance shall not be considered an "eligible" cost under the MWRA Lead Loan Program. However, a community's acquisition of other grant or loan funds which are not requested for eligibility under the MWRA Lead Loan Program, shall not adversely influence the award of MWRA financial assistance.

## 2.13 Massachusetts Municipal Depository Trust (MMDT) Account and Use of Earned Interest

The applicant is required to establish a Massachusetts Municipal Depository Trust (MMDT) account (or similar account approved by MWRA) for the program. If the community has an existing MMDT account used for previous Local Water System Assistance Program loans, that account can also be used for the Lead Loan Program. MWRA will deposit the financial assistance funds into the MMDT account. The financial assistance funds must remain separated from other community funds and accounts. No other community funds may be deposited to this account. **Funds must be drawn from the MMDT account to pay project expenses, or to reimburse other municipal accounts that have been used to pay project expenses. The MMDT account must be drawn down in parallel with project expenses throughout the life of the project. Investment reports or monthly statements from the account shall be furnished to MWRA on a regular basis. All interest earned on the financial assistance funds shall be used by the community to cover eligible project costs, additional phases of the community's lead service line replacement program, or other community water system rehabilitation projects as approved by MWRA. If all lead service line replacement projects are completed and loan funds and/or interest remain in the MMDT account, those funds must be utilized on MWRA approved community water system rehabilitation projects.**

## SECTION 3 - FINANCIAL ASSISTANCE AGREEMENT

### 3.1 Overview

Following review of a community's Financial Assistance Application, MWRA will determine the eligible project cost and establish the project Award Amount. Once the Award Amount is determined, MWRA will draft a Financial Assistance Agreement. Prior to the distribution of funds to any community under the Lead Loan Program, both MWRA and the community will be required to execute a Financial Assistance Agreement. The Financial Assistance Agreement will stipulate all applicable terms and conditions of the loan funding provided by MWRA for the community's lead service line replacement project, including, but not limited to: project scope of work (Attachment A); project schedule (Attachment B); documentation that the community representative who executes the agreement is authorized to act as the municipality's agent (Attachment C); project inspection, reporting, audit, and closeout provisions; and project specific special conditions. The applicant shall signify its acceptance of the terms and conditions through execution of the Financial Assistance Agreement.

Appended to the Financial Assistance Agreement will be a separate Loan Agreement. The Loan Agreement process includes: (1) an Opinion of the Community's Bond Counsel stating that the loan is a valid general obligation of the municipality; and (2) a Water Bond prepared by the Community's Bond Counsel and executed by authorized community representatives. The loan repayment amount and schedule will be stipulated in the Water Bond.

The Financial Assistance and Loan Agreements will not be executed by the Authority until such time as a draft Water Bond and Opinion of the Community's Bond Counsel have been received by the Authority. Financial assistance funds will not be distributed by the Authority until such time as the original Water Bond and Opinion of the Community's Bond Counsel have been received by the Authority.

### 3.2 Projects With Retroactive Funding

For projects where a community seeks to apply for MWRA loan funds to retroactively reimburse project costs previously advanced via community funds, the community is advised that local authorization (via Town Meeting approval, City Council vote, etc.) approving repayment to MWRA is generally required to have occurred **prior** to the expenditure of project costs. With appropriate approvals, community funds may provide bridge financing for some portion of the project, while awaiting permanent MWRA loan funding. As with all community financing options, the community's financial advisor and Bond Counsel representative should be consulted for advice on proper authorization language and appropriate timing of authorization/borrowings to ensure each community's unique legal requirements are met.



### 3.3 Assignment of Agreement Requirements to a Third Party

For cost efficiencies, some portion of local projects may be performed under an agreement with a separate agency (third party). Examples of this type of arrangement include water pipeline rehabilitation work contained in contracts performed by Massachusetts DPW, DCR, MBTA, BRA, Boston Public Works, etc. Absent specific contract language, the third party would not generally be subject to the terms and conditions of the Financial Assistance Agreement. If the applicant demonstrates to MWRA that an agreement exists between the local community and the third party which conveys the applicable terms and conditions of the Financial Assistance Agreement to the third party, then the costs for the lead service line replacement work will be considered for eligibility. If no such agreement exists, then project costs incurred under third party agreements will be considered ineligible.

## SECTION 4 - LOAN REPAYMENT REQUIREMENTS

### 4.1 Repayment of Interest-Free Loan

For each funding award under the MWRA Lead Loan Program, one hundred percent (100%) of the total Award Amount will be provided as an interest-free loan. The interest-free loan will be repaid to MWRA, in ten equal payments, over a ten-year period, beginning one year after the original quarterly funding distribution date (as established in Section 2.6). Each loan repayment will be due to MWRA annually on the quarterly distribution date.

Forty-five (45) days prior to each annual loan repayment date, MWRA will send the community an invoice that will include the following:

- (1) the terms that will be 45 days from the invoice date;
- (2) the loan repayment due date;
- (3) the annual loan repayment amount;
- (4) a description of the charge;
- (5) the remit address for checks and wires; and,
- (6) the phone number of the MWRA Treasury Office and contact person to call with questions on repayment procedures.

The loan may be repaid early, in less than ten years, if the community so desires. Payments should continue to be made on the anniversary date of the loan, but the amount can be increased if the community wishes to pay off the loan early. If a community wishes to pay an amount in advance of the anniversary date and prior to receiving an invoice, identifying correspondence should accompany the payment in order for MWRA's Treasury Department to properly credit the remaining balance due the proper account. All payments should be clearly identified on the remittance copy of the invoice, especially if the amount paid differs from the amount of the invoice.

## **SECTION 5 - EXPENDITURE VERIFICATION REQUIREMENTS, PROJECT INSPECTION, PROJECT CLOSEOUT, AND AUDIT PROVISIONS**

### **5.1 Expenditure Verification Requirements**

The community shall submit progress reports to MWRA that outline the overall progress of the project, the progress of key project tasks, and the financial status of the project relative to the initial project budget. MWRA will provide standardized forms for progress reporting. Progress reports will be submitted to a designated MWRA Project Manager who will be the key MWRA contact person for all community inquiries regarding the MWRA Lead Loan Program. To enable MWRA to track project expenditures, the community shall append to each progress report appropriate backup information that will document the costs specific to the funded project. Appropriate cost backup information shall include, but not be limited to, consultant and/or contractor invoices, purchase orders, force account time sheets, etc. The frequency of progress reporting will depend on the project cost, duration, and schedule. Most progress reports are expected to be semi-annual.

### **5.2 Project Inspection**

A community receiving funding under MWRA's Lead Loan Program shall make the project site and all project records available to MWRA staff for review during the course of the project. MWRA staff will periodically monitor the progress of work for which MWRA financial assistance has been provided. The intent of these periodic inspections will be to insure that the project is: (1) proceeding substantially as defined in the Scope of Work (Attachment A) and Project Schedule (Attachment B) of the executed Financial Assistance Agreement; and (2) proceeding in a manner which will produce a successful project as proposed in the Financial Assistance Application. Appropriate wording which will allow MWRA staff access to the project site and project records shall be included in the Financial Assistance Agreement and project contracts related to performance of work for which the community is receiving financial assistance funding.

### **5.3 Project Closeout Provisions**

Upon completion of the project, the community shall notify MWRA that the project is complete and shall certify that all work included in the Scope of Work section of the executed Financial Assistance Agreement has been completed and performed in accordance with said Agreement. MWRA will provide the community with a project closeout package that includes a summary of all project expenditures and identifies the final project cost. The community shall review, execute, and return the project closeout package to MWRA. Prior to project closeout, MWRA will work cooperatively with the community to make every effort to expend the total project financial assistance Award Amount on project related expenditures (or other approved lead service line replacement eligible costs). To ensure that the total project financial assistance Award Amount is expended, MWRA will consider allowing: (1) an increase in the quantity of existing eligible items in the project Scope of Work, (2) additions to the project Scope of Work, or (3) the transfer of unused funding to a second (or future) funded project which has additional eligible project costs which were not already funded under a separate Financial Assistance Agreement.

#### 5.4 Project Audit Provisions

The community, the community's engineer(s), and the community's contractor(s) shall maintain books, records, documents, and other evidence directly related to the performance of all work receiving funding under the Financial Assistance Agreement in accordance with generally accepted professional practice and appropriate accounting procedures and practices. The community, the community's engineer(s), and the community's contractor(s) shall also maintain the financial information and data used by the engineer(s) and contractor(s) in the preparation or support of the cost submission and a copy of the cost summary submitted to the community. MWRA shall have access to such books, records, documents, and other evidence for inspection, audit, and copying during normal business hours, upon ten (10) days notice and at MWRA's expense. The community, the community's engineers, and the community's contractors shall provide proper facilities for such access and inspection. All of the documents shall be kept for at least seven (7) years after the final payment to the engineer or contractor, or at least seven (7) years after closeout of the project, whichever is later.

The community shall agree to include the wording of the above paragraph in all contracts and subcontracts related to performance of work for which the community is receiving MWRA financial assistance funding.

Audits conducted by MWRA, or its duly authorized representatives, shall be in accordance with generally accepted auditing standards and established procedures and guidelines of MWRA. Such audits shall be conducted at the expense of MWRA upon ten (10) days notice to the community.

The community agrees to provide MWRA with a copy of the community's annual audited financial statements within a reasonable time after the issuance thereof, together with a certificate of the community stating that the community is in compliance with its obligations under this agreement.

## SECTION 6 - EQUAL EMPLOYMENT OPPORTUNITY, ANTIDISCRIMINATION, AND AFFIRMATIVE ACTION

### 6.1 Overview

The community shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, age, handicap status or national origin. The community, the community's engineer(s), and the community's contractor(s) shall comply with all applicable laws and regulations pertaining to nondiscrimination, equal opportunity and affirmative action, including without limitation, executive orders and rules and regulations of federal and state agencies of competent jurisdiction. As detailed below, the community shall make positive efforts to use minority-owned business enterprises (MBE) and woman-owned business enterprises (WBE) for professional services, non-professional services and construction related work that has received funding under the MWRA Lead Loan Program. The community shall also require all construction contractors and subcontractors to make positive efforts to meet the percentage goal for minority employee work force hours and woman employee work force hours, as detailed below. Minority and women-owned businesses (MBEs and WBEs) who participate as part of this Program should be certified as such by the Supplier Diversity Office (SDO).

For the purpose of establishing MBE/WBE participation goals and minority/woman employee work force hour goals for projects receiving funding under the MWRA Lead Loan Program, all eligible project costs should be designated to one of the following four categories of work:

- (a) Professional Services (see Section 6.2);
- (b) Non-professional Services (see Section 6.3);
- (c) Construction (see Section 6.4); and,
- (d) Force Account Work (see Section 6.5).

The goals for MBE/WBE participation and minority/woman employee work force hour percentages are specific to the category of work being performed. The goals for each category of work are detailed below.

### 6.2 Goals for Professional Services

A community that receives MWRA Lead Loan Program funds for a project under the Professional Services category of work should make positive efforts to achieve a goal of 7.18 percent participation of Minority-owned Business Enterprise(s) and 5.77 percent participation of Woman-owned Business Enterprise(s) within the project contracts. At a minimum, the community should allow MBEs and WBEs the maximum feasible opportunity to compete for subagreements to be performed under the project. The community will not be required to include MWRA's MBE/WBE Compliance Forms or MWRA's Requirements for Minority and Woman Business Enterprise and Equal Employment Opportunity Consultant Services Forms within its professional services contracts.

### 6.3 Goals for Non-Professional Services

A community that receives MWRA Lead Loan Program funds for a project under the Non-Professional Services category of work should make positive efforts to achieve a goal of 5.61 percent participation of Minority-owned Business Enterprise(s) and a goal of 4.88 percent participation of Woman-owned Business Enterprise(s) within project contracts. At a minimum, the community should allow MBEs and WBEs the maximum feasible opportunity to compete for subagreements to be performed under the project. The community will not be required to include MWRA's Supplemental Provisions for Equal Employment Opportunity, Antidiscrimination and Affirmative Action Forms within its construction contracts/specifications or non-professional services contracts.

The community shall agree to include the wording of the above paragraph in all contracts and subcontracts related to performance of work for which the community is receiving MWRA financial assistance funding.

### 6.4 Goals for Construction

A community which receives MWRA Lead Loan Program funds for a project under the Construction category of work should make positive efforts to achieve: (1) a minority employee work force goal of 15.3 percent, (2) a woman employee work force goal of 6.90 percent, (3) a goal of 7.24 percent participation of Minority-owned Business Enterprise(s), and (4) a goal of 3.60 percent participation of Woman-owned Business Enterprise(s) within project contracts. At a minimum, the community should allow MBEs and WBEs the maximum feasible opportunity to compete for subagreements to be performed under the project. The community will not be required to include MWRA's Supplemental Provisions for Equal Employment Opportunity, Antidiscrimination and Affirmative Action Forms within its construction contracts/specifications or non-professional services contracts.

The community shall agree to include the wording of the above paragraph in all contracts and subcontracts related to performance of work for which the community is receiving MWRA financial assistance funding.

### 6.5 Force Account Work

The Community shall strive to achieve on the MWRA's Lead Loan Program the labor participation goals contained herein. Said participation goals shall apply in each job category on this program including but not limited to bricklayers, carpenters, cement masons, electricians, ironworkers, operating engineers and those classes of work enumerated in Section 44F of Chapter 149 of the Massachusetts General Laws. The participation goals for this project shall be **15.3%** for minorities and **6.9%** for women. The participation goals, as set forth herein, shall not be construed as quotas or set-asides; rather, such participation goals will be used to measure the progress of the Commonwealth's equal opportunity, non-discrimination and affirmative action program.

## SECTION 7 - INSTRUCTIONS FOR COMPLETING FINANCIAL ASSISTANCE APPLICATION

### 7.1 Application Instructions

Each eligible MWRA water community, as set forth in Section 2.3, may apply to MWRA for funding under MWRA's Lead Loan Program by completing and filing a Financial Assistance Application. MWRA will review each submitted application to determine the adequacy, accuracy and completeness of the information contained therein. MWRA may request the applicant provide additional project information and/or request the applicant attend a meeting to review details of the proposed project.

Based on the type of community project, one of the two MWRA Local Water System Assistance Program applications should be submitted to MWRA, as explained below:

1. Under a Local Water System Assistance Program joint application for a *Water Project* and *Lead Loan Program Project*, MWRA Lead Loan Program funds will be distributed together with Local Water System Assistance Program Water Project funds to finance local projects that combine lead service line identifications/replacements with a water pipeline rehabilitation/replacement project. To apply for MWRA financial assistance for a joint *Water Project* and *Lead Loan Program Project*, use the Financial Assistance Application for Water Projects (Note that Water Projects may include a Lead Service Line Replacement Component). The Financial Assistance Application for Water Projects is presented as Attachment 1 to the Program Guidelines for Water Projects.
2. Under a Local Water System Assistance Program application for a *Lead Loan Program Project* only, MWRA Lead Loan Program funds will be distributed (separate from any *Water Project* funds) for local projects that specifically target lead service line identification and/or replacements. To apply for MWRA financial assistance for a *Lead Loan Program Project* only, use the Financial Assistance Application for Lead Service Line Replacement Loan Program Projects that is presented as Attachment 1 to this document.

All questions within the application must be answered completely and accurately. The application and all supporting documentation should be submitted to:

Massachusetts Water Resources Authority  
Charlestown Navy Yard  
100 First Avenue  
Boston, MA 02129  
Attn: Planning - Community Support Program

An electronic copy (MS Word) of the application is available at:  
<http://www.mwra.com/comsupport/communitysupportmain.html>, or from:

- Elaine M. Donahue, Project Manager, [elaine.donahue@mwra.com](mailto:elaine.donahue@mwra.com) or (617) 788-4824, or
- Kristen Hall, Project Manager, [kristen.hall@mwra.com](mailto:kristen.hall@mwra.com) or (617) 788-4831.

The direct link to the Lead Loan Program web page is: xxxx (insert link) xxxx. The applicant should provide as complete information as possible on the proposed project. The information provided will be reviewed by MWRA staff to determine if the project is a viable Lead Service Line Replacement Loan Program project and assess eligible project costs.

A discussion of each section of the Financial Assistance Application is presented below.

### **Section 1 - Financial Assistance Requested**

This section is self-explanatory.

### **Section 2 – Acknowledge MWRA Recommended Community Water System Maintenance and Improvement Programs**

Each community participating in the Lead Loan Program must acknowledge the MWRA recommended components for a **Community Lead Service Line Replacement Program** as part of the Financial Assistance Application Process.

### **Section 3 - Project Description**

The applicant should provide as complete and detailed information as possible on the proposed project. The information provided will be reviewed by MWRA staff to determine if the project is a viable lead service line replacement project and assess the eligible project costs. It is important that the project proponent state the estimated number of lead service connections anticipated to be removed from completion of the project construction phase.

### **Section 4 - Documentation of Project Need**

Identify records that document the project's need, including, but not limited to: existing community lead service line inventories, water system records, physical surveys and internal inspections; housing stock age, and other pertinent DPW/Water Department maintenance records.

### **Section 5 - Project Schedule**

The application must contain a realistic schedule outlining important milestones in the planning, design, or construction phases of the project. If final paving and/or project closeout are anticipated to be delayed due to winter season, please note this in the project schedule. The estimated project start date must be included and must be within ninety days of the distribution of funds.

### **Section 6 - Map of Project**

As appropriate, the application should be accompanied by a project map denoting the general area of work. If no map or plan is submitted with the application, please explain why a map is not appropriate.



## Section 7 - Project Funding

The applicant must identify if 100 percent of the proposed project funding will come from MWRA's Lead Loan Program or if a portion of the project funds will come from other funding sources. If additional funds are required to perform the project, the applicant must identify them in this section of the application. Documentation of the availability of the additional funds should be included with the application or, if the additional funding is anticipated through a future action, the anticipated availability date of the additional funds should be provided.

## Section 8 - Summary of Costs

In the space provided (or as an attachment) list each project phase (i.e. Inventory/Planning, Design, Construction, Construction Services, etc.). Under each phase list the major tasks of work required to complete the project. **Note that if construction paving costs represent more than ten percent (10%) of the project cost, they should be identified as a separate project phase or subtask in Section 8 - Summary of Costs.**

At the bottom of the Summary of Costs section, provide the date of the cost estimate, the appropriate Engineering News Record (ENR) Construction Cost Index, and the name of the person or firm who developed the cost estimate. Engineering costs should be broken down into the major engineering tasks as outlined in a standard engineering agreement. The following information should be provided for each engineering task: staff labor category, staff hours, hourly rates, direct labor costs, indirect labor costs, other direct costs and/or expenses, etc. For ease of preparation, a cost spreadsheet form may be submitted. Construction costs should be documented through an engineering cost estimate or bid tabulation, if available.

## Section 9 - Interdependent Projects

The application must note whether financing has been received or is being requested for this project, or a separate phase of the project, from a non-MWRA grant, the Drinking Water State Revolving Fund (DWSRF) program, or any other federal, state or other funding program. The applicant must specify interdependent projects or portions of projects. For example, if the applicant is performing the design phase of a project under State grant or DWSRF funding, and MWRA financial assistance is being requested for the construction phase, then the construction phase is dependent on completion of the design.

## Section 10 - Intermunicipal Projects

If the project will serve two or more municipalities, or one community's project extends into another community, the applicant must explain the circumstances. State whether the municipalities have, or propose to have, an intermunicipal agreement or another legally binding document covering financing, construction, and/or operation of the proposed improvements. If not, detail historic cooperative service relationships between the parties.

### **Section 11 - Project Permits and Certificates**

The applicant should specify permits and/or certificates that have been obtained or may be required prior to initiation of the proposed project. A list of permits and certificates, which may be applicable, is provided in the application. Additional permits and/or certificates may be required which are not shown on the list provided.

### **Section 12 - Construction Plans, Specifications, and Bidding Documents**

For proposed construction projects and equipment/material purchases, the applicant should outline the status of the plan, specification, and bidding document preparation, and the time schedule for completion. If these documents are not required for the project, an explanation should be included in this section.

### **Section 13 - Engineering Agreement**

For proposed planning and design projects, the applicant should outline the status of an engineering agreement and time schedule for its completion. If no engineering agreement is required for the project, an explanation should be included in this section.

### **Section 14 - Force Account Work**

If the applicant proposes to perform any funding eligible portion of the project (inventory/planning, design, construction services, construction activities, etc.) using its own staff (City, Town, District, or Commission employees), interns, or temporary employees (force account work), a description of the proposed activities must be provided. The use of the applicant's own employees is defined as "force account work".

Only direct labor costs associated with force account work may be approved as eligible costs if documentation of the direct labor hours and cost per hour are provided to MWRA. Charges for overhead, overtime, and/or the use of vehicles or equipment owned by the applicant and staff time to obtaining permits or licenses are ineligible.

To document Force Account Work, MWRA requires detailed records of staff hours worked on the project. As part of its regular project progress reports to MWRA, the community must provide a breakdown of staff names, titles, job duties, hours worked on the project, and hourly pay rates. Detailed records such as weekly time sheets should be submitted as backup to summary spreadsheet information. If weekly time sheet information is not available for submittal, an appropriate community representative with direct knowledge of the project activities will be required to certify via signed statement that the force account hours being submitted to MWRA as eligible work are authentic.

### **Section 15 - Other Project Information**

The applicant is encouraged to provide any other additional information that may enable MWRA to determine that the project is a viable lead service line replacement project and assess the eligible project costs.

**APPENDIX A - DEFINITION OF TERMS**

Authority - Massachusetts Water Resources Authority

Board of Directors - Board of Directors of the Massachusetts Water Resources Authority

Director of Finance – Director of Finance of the Massachusetts Water Resources Authority

Executive Director - Executive Director of the Massachusetts Water Resources Authority

Financial Assistance - Monies provided to public entities

Grant - Monies provided to public entities that do not require repayment

Loan - Monies provided to public entities that are required to be repaid over a specified time period

Service Area Communities - All municipalities, water districts and commissions served by the MWRA's Waterworks System

Treasurer - Treasurer of the Massachusetts Water Resources Authority

**APPENDIX B - ABBREVIATIONS**

BRA:	Boston Redevelopment Authority
CMR:	Commonwealth of Massachusetts Regulation
CSO:	Combined Sewer Overflow
CVA:	Chicopee Valley Aqueduct
DCR:	Department of Conservation and Recreation
DPW:	Department of Public Works
DOT:	Massachusetts Department of Transportation
DWSRF:	Drinking Water State Revolving Fund
EIR:	Environmental Impact Report
ENF:	Environmental Notification Form
ENR:	Engineering News Record
EPA:	United States Environmental Protection Agency
FY:	Fiscal Year
GIS:	Geographic Information System
LLP:	Lead Loan Program
LWSAP:	Local Water System Assistance Program
MassDEP:	Massachusetts Department of Environmental Protection
MBE:	Minority-owned Business Enterprise
MBTA:	Massachusetts Bay Transit Authority
MMDT:	Massachusetts Municipal Depository Trust
MWRA:	Massachusetts Water Resources Authority
O&M:	Operation and Maintenance
SOMWBA:	State Office of Minority and Women Business Assistance
WBE:	Woman-owned Business Enterprise

**ATTACHMENT 1**

**MWRA LOCAL WATER SYSTEM ASSISTANCE PROGRAM**

**FINANCIAL ASSISTANCE APPLICATION  
FOR  
LEAD SERVICE LINE REPLACEMENT LOAN PROGRAM PROJECTS**

**July 2016**

**MASSACHUSETTS WATER RESOURCES AUTHORITY  
CHARLESTOWN NAVY YARD, 100 FIRST AVENUE, BOSTON, MA 02129  
Attn: Planning – Community Support Program**

**MWRA LOCAL WATER SYSTEM ASSISTANCE PROGRAM**

**FINANCIAL ASSISTANCE APPLICATION  
FOR  
LEAD SERVICE LINE REPLACEMENT LOAN PROGRAM PROJECTS  
“Lead Loan Program or LLP”  
Updated July 2016**

FOR MWRA USE ONLY	
PROJECT NO.:	APPLICANT:
NAME OF PROJECT:	
DATE RECEIVED:	

**Section 1 - Financial Assistance Requested**

Name of Applicant: \_\_\_\_\_

Address of Applicant: \_\_\_\_\_

Name of Authorized Representative: \_\_\_\_\_

Telephone Number of Representative: \_\_\_\_\_

Name of Applicant's Consultant Firm and Representative (if applicable):

\_\_\_\_\_ Telephone No.: \_\_\_\_\_

The following attached exhibits are hereby made part of this application for financial assistance under the MWRA's Local Water System Assistance Program – Lead Service Line Replacement Loan Program and the undersigned representative of the Applicant certifies that the information presented in this application and its exhibits is true, correct and complete to the best of their knowledge:

\_\_\_\_\_  
(Date)                      (Signature of Authorized Representative)                      (Title)

**Section 2 – Acknowledge MWRA Recommended Community Lead Service Line Replacement Program**

Under the Local Water System Assistance Program application process for both Lead Loan Program Projects and Water Projects, communities need to acknowledge the MWRA recommended components for a **“Community Lead Service Line Replacement Program.”** The MWRA recommended program incorporates at least the following:

1. Communities should clearly establish that it is their goal to fully remove all lead pipe from both publicly-owned and privately-owned water service line connections;
2. Communities should commit to a comprehensive lead service line inventory program to compile a listing of properties with full or partial lead service lines that will be made available to the public via web page or other similar public access vehicle (subject to disclaimer for accuracy based on best available information);
3. Communities should target proactive outreach to customers with lead service lines to provide educational information regarding the risks of lead exposure and information encouraging the customer to participate in the community lead service line replacement program so that the privately-owned portion is replaced concurrent with the publicly-owned portion;
4. Communities should maintain ongoing proactive outreach to customers with known privately-owned lead service lines;
5. Communities should include a unit cost bid item for public and private portion service line replacement in all water pipeline projects so that a mechanism exists for full removal of lead service lines; and,
6. As a secondary measure, communities’ lead service line replacement programs should include replacement of lead gooseneck connections when encountered during infrastructure rehabilitation or construction.

Applicant communities must acknowledge these six recommended components for a **Community Lead Service Line Replacement Program**. This acknowledgement is intended to make sure communities understand that implementing a lead service line replacement program, combined with other water system rehabilitation projects, will help maintain high water quality in the distribution systems and at the customer's tap.

Community Acknowledgement

\_\_\_\_\_ ,  
Signature

\_\_\_\_\_  
Title

Please note below and attach to the application any additional information on the status of the **Community Lead Service Line Replacement Program**.

**Additional Information:**

---



---

**Section 3 - Project Description**

Describe the proposed lead service line replacement project, including the following as applicable, but not limited to:

- a. Type and Objective of Project, such as inventory, planning, design, construction, or a combination. The applicant must describe how private portions of lead service lines will be removed under the comprehensive program. Estimate the number of lead services to be fully removed or how the project will lead to the future removal of lead services.
- b. Location of the Project, such as a list of building addresses, street names or a specific section of the community. Please submit lead service inventory list or area maps with the application.
- c. Phased Program. Is the project part of a phased program of lead service line replacements and, if so, what are the other components and potential schedule for the overall program the community is pursuing?

---



---



---



---



---



---



---



---



---



---

Provide attachments if necessary



**Section 4 - Documentation of Project Need**

Identify records that document the project's need, including, but not limited to: existing community lead service line inventories, water system records, physical surveys and internal inspections; housing stock age, and other pertinent DPW/Water Department maintenance records. Provide attachments as needed.

---

---

---

---

---

---

---

---

**Section 5 - Project Schedule**

Provide a realistic schedule outlining important milestones in the planning, design, and/or construction phase. If final paving and/or project closeout are anticipated to be delayed due to winter season, please note this in the project schedule. If a schedule is attached to the financial assistance application separate from this section, please note the attachment here. The estimated project start date must be included and must be within six months of the distribution of funds.

---

---

---

---

---

---

---

---

---

---

**Section 6 - Map of Project**

As appropriate, the application should be accompanied by a project map denoting the general area of work. If no map or plan is submitted with the application, please explain why a map is not appropriate.

---



---



---



---



---

**Section 7 - Project Funding**

The applicant must list the sources of funding proposed for the project and, if funding through the MWRA Lead Loan Program will not cover 100 percent of the project costs, the applicant must demonstrate that sufficient funds are available to cover the additional project costs from other resources. **Documentation of the availability of other resources may be in the form of a Town Meeting Action, City Council Vote, or other binding action and, if available, should be attached to the application.** Sources of funding for the project include:

<u>Source</u>	<u>Amount</u>	<u>Date Available</u>
a. MWRA Lead Loan Program		N/A
b. Community Cash		
c. General Obligation Bond		
d. Other (Non-MWRA) Grant or Loan		
e. Drinking Water State Revolving Fund		
f. Other (Specify Source)		

---

TOTAL \$

**Section 8 - Summary of Costs**

Provide a detailed tabulation of the estimated cost of each project phase (i.e. Inventory/Planning, Design, Construction, Construction Services, etc.) and major tasks under each project phase. Major tasks to be detailed below may include those listed as eligible project costs in Section 2.7 of the MWRA Program Guidelines for Lead Service Line Replacement Loan Program Projects or other project tasks that may or may not be eligible for MWRA financial assistance funding. For ease of preparation, a cost spreadsheet may be submitted as an attachment.

**Note that if construction paving costs represent more than ten percent (10%) of the project cost, they should be identified as a separate project phase or subtask in the list below.**

The total project cost and estimated total eligible project cost should be provided at the bottom of the table.

<u>Project Phases and Subtask</u>	<u>Estimated Total Project Cost</u>	<u>Estimated Eligible Project Cost</u>
_____		
_____		
_____		
_____		
_____		
_____		
_____		
_____		
_____		
_____		
_____		
_____		

TOTAL COST:

Date of Cost Estimate: \_\_\_\_\_ ENR Index: \_\_\_\_\_

Source of Cost Estimate: \_\_\_\_\_

**Section 9 - Interdependent Projects**

Explain whether financing has been received or is being requested for this project, or a separate phase of the project, from a Non-MWRA grant, the Drinking Water State Revolving Fund (DWSRF) program, or another grant/loan program.

Specify related and/or interdependent projects or portions of projects. For example, if the applicant is performing the design phase of a project under State grant or DWSRF funding, and MWRA financial assistance is being requested for the construction phase under this application, then the construction phase is dependent on completion of the design phase.

---

---

---

---

---

---

---

---

**Section 10 – Intermunicipal Projects**

If the project will serve two or more municipalities, or one community's project extends into another community, the applicant must explain the circumstances. State whether the municipalities have, or propose to have an intermunicipal agreement or another legally binding document covering financing, construction, and/or operation of the proposed improvements. If not, detail historic cooperative service relationships between the parties.

---

---

---

---

---

**Section 11 - Project Permits and Certificates**

Check the list below or note additional permits or certificates which: (1) have been obtained, (2) will be obtained, or (3) may be required prior to initiation of the project.

	<u>Has been Obtained</u>	<u>Will be Obtained</u>	<u>May be Required</u>
U. S. ARMY CORPS OF ENGINEERS	_____	_____	_____
MA DIVISION OF WATERWAYS Chapter 91 License	_____	_____	_____
LOCAL CONSERVATION COMMISSION	_____	_____	_____
DEP - DIVISION OF AIR QUALITY	_____	_____	_____
DPW HIGHWAY PERMIT	_____	_____	_____
DCR CONSTRUCTION PERMIT	_____	_____	_____
MBTA/CONRAIL LICENSE	_____	_____	_____
DWPC (401) WATER QUALITY CERT.	_____	_____	_____
MEPA - Environment Notification Form (ENF) and/or Environmental Impact Report (EIR)	_____	_____	_____
FLOOD INSURANCE PARTICIPATION	_____	_____	_____
HISTORIC - Mass. Historical Commission	_____	_____	_____
LEGISLATION - Legislation from the Mass. General Court could be required prior to: construction in dedicated conservation land, construction by one community within the municipal boundaries of another, and easements in state owned land.	_____	_____	_____
OTHER _____	_____	_____	_____

**Section 12 - Construction Plans, Specifications, and Bidding Documents**

For proposed construction projects and equipment/materials purchases, the applicant should outline the status of the plan, specification, and bidding document preparation and the time schedule for completion. If these documents are not required for the project, an explanation should be included in this section.

If available, a copy of the final engineering plans, specifications, and bidding documents for each contract or equipment/material purchase should be submitted with the application.

---

---

---

---

---

---

---

**Section 13 - Engineering Agreement**

For proposed planning, design, and/or construction projects, the applicant should outline the status of an engineering agreement and time schedule for its completion (if a Consulting Engineer will be used for any portion of the project). If no engineering agreement is required for the project, an explanation should be included in this section.

If available, a copy of the proposed or executed engineering agreement for each contract should be submitted with the application.

---

---

---

---

---

**Section 14 - Force Account Work**

If the applicant proposes to perform any funding eligible portion of the project (inventory/planning, design, construction services, construction activities, etc.) using its own staff, interns, or temporary employees (force account work), a description of the force account activities must be provided. List the type of force account task, staff titles, affiliated Department, estimated hours to perform task, direct labor rates (or range) for each title, etc. **Please note that charges for overhead, overtime, and/or the use of vehicles or equipment owned by the applicant, and staff time to obtain permits or licenses are ineligible.**

---

---

---

---

---

---

**Section 15 - Other Project Information**

The applicant is encouraged to provide any other additional information that may enable the Authority to determine that the project is a viable lead service line replacement project and assess the eligible project costs.

---

---

---

---

---

---

---

---

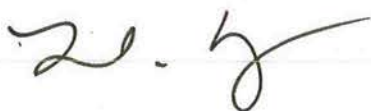
---

---


STAFF SUMMARY

W A.3  
IV A.5  
5/11/16

TO: Board of Directors  
FROM: Frederick A. Laskey, Executive Director  
DATE: May 11, 2016  
SUBJECT: Approval of Revisions to the Program Guidelines for the MWRA Local Water System Assistance Program to be Consistent with the Lead Service Line Replacement Loan Program Guidelines



COMMITTEE: Water Policy & Oversight

\_\_\_\_ INFORMATION  
X VOTE  
  
\_\_\_\_  
Michael J. Hornbrook  
Chief Operating Officer

Carl H. Leone, Senior Program Manager  
Carolyn M. Fiore, Deputy Chief Operating Officer  
Stephen Estes-Smargiassi, Dir. Of Planning and Sustainability  
Preparer/Title

*A separate Staff Summary recommends for approval the Program Guidelines that will be used to allow communities to apply for and receive MWRA loans for community lead service line replacement projects. This Staff Summary recommends minor revisions to the existing Program Guidelines for Water Projects under the MWRA Local Water System Assistance Program to be consistent with the Lead Service Line Replacement Loan Program Guidelines.*

**RECOMMENDATION:**

To approve the Revised Program Guidelines for Water Projects under the MWRA Local Water System Assistance Program to be consistent with the Lead Service Line Replacement Loan Program Guidelines as outlined in this Staff Summary.

**DISCUSSION:**

MWRA's goal in providing financial assistance to member communities is to improve local water systems so that the high quality water MWRA delivers can make it all the way to the consumer's tap. Continued improvement of local water systems was a critical element of MWRA's Integrated Water Supply Improvement Program, which focused on cost-effective investment in water quality upgrades. Older water mains, particularly those constructed of unlined cast-iron pipe, need to be replaced or cleaned and lined to prevent tuberculation (rust build-up), loss of disinfectant residual, and potential bacteria growth.

The Phase 2 - Local Water System Assistance Program (LWSAP) commenced in FY11 and is approved through FY20. The Phase 2 expansion of the water loan program added \$210 million in 10-year, zero-interest loans for member water community's local projects. Through February 2016, \$95 million has been distributed to 36 member communities and seven communities have been distributed their entire funding allocation under Phase 2 of the LWSAP program (see Attachment 1).



By its vote on March 16, 2016, the Board approved an enhancement to the Local Water System Assistance Program to provide up to \$100 million in 10-year zero-interest loans to communities solely for efforts to fully replace lead service lines. A separate Staff Summary recommends for approval the Program Guidelines for communities to apply for and receive MWRA loans for community lead service line replacement projects.

Based on community applications, Local Water System Assistance Program funds will be distributed in either of two ways:

1. Communities can apply for Local Water System Assistance Program funds for local projects that combine a water rehabilitation/replacement project jointly with lead service line identifications/replacements; or,
2. Communities can apply separately for water pipeline rehabilitation/replacement projects or lead service line identifications/replacements projects.

### **Outline of Revisions to the Program Guidelines for Water Projects**

To make the Local Water System Assistance Program Guidelines for Water Projects consistent with the Lead Service Line Replacement Loan Program Guidelines the following revisions are recommended:

- With implementation of the Lead Loan Program beginning in FY17, MWRA will expand the recommended *Community Water System Maintenance and Improvement Programs* to cover lead service line replacements. Under the Local Water System Assistance Program application process for both Water Projects and Lead Loan Program Projects, communities will need to acknowledge the MWRA recommended components for a “**Community Lead Service Line Replacement Program.**” The MWRA recommended program incorporates at least the following:
  1. Communities should clearly establish that it is their goal to fully remove all lead pipe from both publicly-owned and privately-owned water service line connections;
  2. Communities should commit to a comprehensive lead service line inventory program to compile a listing of properties with full or partial lead service lines that will be made available to the public via web page or other similar public access vehicle (subject to disclaimer for accuracy based on best available information);
  3. Communities should target proactive outreach to customers with lead service lines to provide educational information regarding the risks of lead exposure and information encouraging the customer to participate in the community lead service line replacement program so that the privately-owned portion is replaced concurrent with the publicly-owned portion;
  4. Communities should maintain ongoing proactive outreach to customers with known privately-owned lead service lines;

5. Communities should include a unit cost bid item for public and private portion service line replacement in all water pipeline projects so that a mechanism exists for full removal of lead service lines; and,
  6. As a secondary measure, communities' lead service line replacement programs should include replacement of lead gooseneck connections when encountered during infrastructure rehabilitation or construction.
- The Guidelines Section 6 – Equal Employment, Antidiscrimination, and Affirmative Action Goals will be revised to include:
    - 6.1 Overview:
 

Replace reference to the State Office of Minority and Women Business Assistance (SOMWBA) with Supplier Diversity Office (SDO).
    - 6.4 Goals for Construction:
 

(1) a minority employee work force goal of 15.3 percent (*revised from 10.0 percent*).
    - 6.5 Force Account Work:

The Community shall strive to achieve on the MWRA's Lead Loan Program the labor participation goals contained herein. Said participation goals shall apply in each job category on this program including but not limited to bricklayers, carpenters, cement masons, electricians, ironworkers, operating engineers and those classes of work enumerated in Section 44F of Chapter 149 of the Massachusetts General Laws. The participation goals for this project shall be **15.3%** for minorities and **6.9%** for women. The participation goals, as set forth herein, shall not be construed as quotas or set-asides; rather, such participation goals will be used to measure the progress of the Commonwealth's equal opportunity, non-discrimination and affirmative action program.

With overall community water system needs in mind, MWRA staff will continue to work closely with the Advisory Board to develop sound recommendations for future enhancements to Local Water System Assistance Program.

#### **BUDGET/FISCAL IMPACT:**

The FY16 CIP includes an overall net budget of zero dollars for water system financial assistance because community loans are offset by repayments over time. The Phase 2 Program budget is \$210 million for both loan distributions and repayments. To date, \$95 million in loans have been distributed and the program has a remaining balance of \$115 million in future community loans (through FY20). Community loan repayments to date are \$18.5 million, leaving a remaining balance of \$191.5 million in future repayments (through FY30). As community loans are repaid, the funds are deposited into MWRA's construction fund. The FY16 CEB budget includes \$4.1 million for the cost of the interest as a separate line item under Debt Service.

**MBE/WBE PARTICIPATION:**

MBE/WBE goals for community projects are established in the Program Guidelines.

**ATTACHMENTS:**

Attachment 1 - Phase 2 - LWSAP Allocation and Fund Utilization by Community

Attachment 2 - Local Water System Assistance Program, Program Guidelines for Water Projects

ATTACHMENT I  
 MWRA LOCAL WATER SYSTEM ASSISTANCE PROGRAM  
 ALLOCATION AND FUND UTILIZATION BY COMMUNITY  
 THROUGH FEBRUARY 2016

Community	Community Total Allocation	Community Annual Allocation	Allocation To Date (Year 6)	Funds Distributed Thru Feb 16	Percent Distributed (Year 6)	Total Remaining Funds	Funds Currently Available
Arlington	\$6,225,000	\$622,500	\$3,735,000	\$1,300,000	35%	\$4,925,000	\$2,435,000
Bedford *	\$2,418,000	\$500,000	\$2,418,000	\$2,418,000	100%	\$0	\$0
Belmont	\$3,477,000	\$500,000	\$3,000,000	\$3,000,000	100%	\$477,000	\$0
Boston	\$38,754,000	\$3,875,400	\$23,252,400	\$23,252,400	100%	\$15,501,600	\$0
Brookline	\$3,426,000	\$500,000	\$3,000,000		0%	\$3,426,000	\$3,000,000
Canton *	\$3,216,000	\$500,000	\$3,000,000	\$2,000,000	67%	\$1,216,000	\$1,000,000
Chelsea	\$3,814,000	\$500,000	\$3,000,000	\$1,441,200	48%	\$2,372,800	\$1,558,800
Dedham/Westwood *	\$503,000	\$503,000	\$503,000	\$503,000	100%	\$0	\$0
Everett	\$4,672,000	\$500,000	\$3,000,000	\$2,500,000	83%	\$2,172,000	\$500,000
Framingham	\$7,357,000	\$735,700	\$4,414,200	\$3,678,500	83%	\$3,678,500	\$735,700
Lexington	\$3,024,000	\$500,000	\$3,024,000	\$1,145,015	38%	\$1,878,985	\$1,878,985
Lynnfield Water Dist.	\$1,396,000	\$500,000	\$1,396,000	\$250,000	18%	\$1,146,000	\$1,146,000
Malden	\$7,272,000	\$727,200	\$4,363,200	\$1,774,000	41%	\$5,498,000	\$2,589,200
Marblehead	\$4,237,000	\$500,000	\$3,000,000		0%	\$4,237,000	\$3,000,000
Marlborough *	\$1,917,000	\$500,000	\$1,917,000	\$1,283,800	67%	\$633,200	\$633,200
Medford	\$6,959,000	\$695,900	\$4,175,400		0%	\$6,959,000	\$4,175,400
Melrose	\$3,988,000	\$500,000	\$3,000,000	\$2,440,000	81%	\$1,548,000	\$560,000
Milton	\$4,123,000	\$500,000	\$3,000,000	\$850,000	28%	\$3,273,000	\$2,150,000
Nahant	\$1,490,000	\$500,000	\$1,490,000	\$884,000	59%	\$606,000	\$606,000
Needham *	\$794,000	\$500,000	\$794,000		0%	\$794,000	\$794,000
Newton	\$13,602,000	\$1,360,200	\$8,161,200	\$6,801,000	83%	\$6,801,000	\$1,360,200
Northborough *	\$1,048,000	\$500,000	\$1,048,000		0%	\$1,048,000	\$1,048,000
Norwood	\$4,395,000	\$500,000	\$3,000,000	\$3,000,000	100%	\$1,395,000	\$0
Peabody *	\$1,089,000	\$500,000	\$1,089,000	\$1,089,000	100%	\$0	\$0
Quincy	\$10,505,000	\$1,050,500	\$6,303,000	\$4,651,835	74%	\$5,853,165	\$1,651,165
Reading	\$4,146,000	N/A **	\$4,146,000	\$4,146,000	100%	\$0	\$0
Revere	\$5,034,000	\$503,400	\$3,020,400	\$1,850,000	61%	\$3,184,000	\$1,170,400
Saugus	\$6,621,000	\$662,100	\$3,972,600	\$3,529,844	89%	\$3,091,156	\$442,756
Somerville	\$7,419,000	\$741,900	\$4,451,400	\$1,557,234	35%	\$5,861,766	\$2,894,166
Southborough	\$1,512,000	\$500,000	\$1,512,000		0%	\$1,512,000	\$1,512,000
Stoneham	\$2,339,000	\$500,000	\$2,339,000	\$2,339,000	100%	\$0	\$0
Stoughton*	\$2,506,000	\$500,000	\$2,506,000	\$2,506,000	100%	\$0	\$0
Swampscott	\$3,755,000	\$500,000	\$3,000,000	\$1,849,468	62%	\$1,905,532	\$1,150,532
Wakefield *	\$2,325,000	\$500,000	\$2,325,000	\$1,400,000	60%	\$925,000	\$925,000
Waltham	\$10,293,000	\$1,029,300	\$6,175,800	\$1,798,370	29%	\$8,494,630	\$4,377,430
Watertown	\$2,978,000	\$500,000	\$2,978,000	\$2,000,000	67%	\$978,000	\$978,000
Wellesley *	\$2,350,000	\$500,000	\$2,350,000	\$241,569	10%	\$2,108,431	\$2,108,431
Weston	\$1,625,000	\$500,000	\$1,625,000	\$1,005,000	62%	\$620,000	\$620,000
Wilmington *	\$611,000	\$500,000	\$611,000		0%	\$611,000	\$611,000
Winchester *	\$882,000	\$500,000	\$882,000	\$500,000	57%	\$382,000	\$382,000
Winthrop	\$3,312,000	N/A **	\$3,312,000	\$3,312,000	100%	\$0	\$0
Woburn *	\$2,591,000	\$500,000	\$2,591,000	\$1,000,000	39%	\$1,591,000	\$1,591,000
Chicopee	\$7,153,000	\$715,300	\$4,291,800	\$2,085,000	49%	\$5,068,000	\$2,206,800
South Hadley F.D. 1	\$1,538,000	\$500,000	\$1,538,000		0%	\$1,538,000	\$1,538,000
Wilbraham	\$1,309,000	\$500,000	\$1,309,000		0%	\$1,309,000	\$1,309,000
<b>TOTAL</b>	<b>\$210,000,000</b>			<b>\$95,381,235</b>		<b>\$114,618,765</b>	<b>\$54,638,165</b>

\* Partially Served Communities

\*\* Exempt by Board Approval

# MASSACHUSETTS WATER RESOURCES AUTHORITY



## LOCAL WATER SYSTEM ASSISTANCE PROGRAM

## PROGRAM GUIDELINES FOR WATER PROJECTS

**July 2016**

MASSACHUSETTS WATER RESOURCES AUTHORITY  
CHARLESTOWN NAVY YARD  
100 FIRST AVENUE  
BOSTON, MA 02129

## TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE</u>
1 INTRODUCTION	
1.1 Establishment of Massachusetts Water Resources Authority Local Water System Assistance Program	1
1.2 Purpose	1
1.3 Term of the Program	1
1.4 Definitions and Abbreviations	1
2 FINANCIAL ASSISTANCE APPLICATION AND DISTRIBUTION OF FUNDS	
2.1 Overview	2
2.2 Application for Financial Assistance	2
2.3 Initiation Date for Eligible Project Costs	3
2.4 Financial Assistance Allocation Per Community	3
2.5 Maximum Financial Assistance Award Amount Per Project	5
2.6 Financial Assistance Loan Apportionment	5
2.7 Eligible Project Costs	5
2.8 Ineligible Project Costs	9
2.9 MWRA Recommended Community Water System Maintenance/Improvement Programs	10
2.10 Commitment and Distribution of Funds	11
2.11 Multiple Financial Assistance Distributions	12
2.12 Limitation on Financial Assistance Award	12
2.13 Interaction With Other MWRA Funding Programs, the State Revolving Fund, and Other Programs of Assistance	12
2.14 Massachusetts Municipal Depository Trust (MMDT) Account and Use of Earned Interest	13
3 FINANCIAL ASSISTANCE AGREEMENT	
3.1 Overview	14
3.2 Projects With Retroactive Funding	14
3.3 Assignment of Agreement Requirements to a Third Party	15
4 LOAN REPAYMENT REQUIREMENTS	
4.1 Repayment of Interest-Free Loan	16

**TABLE OF CONTENTS (Continued)**

<u>SECTION</u>	<u>PAGE</u>
5 EXPENDITURE VERIFICATION REQUIREMENTS, PROJECT INSPECTION, PROJECT CLOSEOUT, AND AUDIT PROVISIONS	
5.1 Expenditure Verification Requirements	17
5.2 Project Inspection	17
5.3 Project Closeout Provisions	17
5.4 Project Audit Provisions	18
6 EQUAL EMPLOYMENT OPPORTUNITY, ANTIDISCRIMINATION, AND AFFIRMATIVE ACTION GOALS	
6.1 Overview	19
6.2 Goals for Professional Services	19
6.3 Goals for Non-Professional Services	20
6.4 Goals for Construction	20
6.5 Force Account Work	20
7 INSTRUCTIONS FOR COMPLETING FINANCIAL ASSISTANCE APPLICATION	
7.1 Application Instructions	21
<u>APPENDICES</u>	
Appendix A - Definition of Terms	25
Appendix B - Abbreviations	26
<u>ATTACHMENTS</u>	
Attachment 1 -MWRA Local Water System Assistance Program Financial Assistance Application	A-1

## SECTION 1 - INTRODUCTION

### 1.1 Establishment of Massachusetts Water Resources Authority's Local Water System Assistance Program

The Massachusetts Water Resources Authority (MWRA) Board of Directors, by their vote on June 9, 2010, authorized the development of the MWRA Local Water System Assistance Program (LWSAP). This interest-free loan program is designed to assist member water communities to rehabilitate or replace water pipelines, improve local water quality conditions, and upgrade local water systems. The allocation of funds to each community, the review of applications for financial assistance, the determination of eligible projects, and the distribution and repayment of funds will be performed in accordance with the provisions of the LWSAP, as presented in this "Program Guidelines for Water Projects" document. These Guidelines were approved by the MWRA Board of Directors on xxxx (add date) xxxx.

### 1.2 Purpose

The purpose of the MWRA LWSAP is to provide incentives in the form of interest-free loans to MWRA's water service area communities in order to improve water quality conditions in community-owned distribution systems. In addition to improving water quality, these improvements will help provide more reliable water service and reduce water pipeline leakage. While the Program's major objective is funding local water system improvement construction projects, planning and design costs and construction inspection costs required to implement such projects are also eligible for financial assistance. Listings of eligible and ineligible project costs are provided in Sections 2.7 and 2.8, respectively.

### 1.3 Term of the Program

The MWRA LWSAP provides \$210,000,000 in interest-free loans to communities during the 10-year period FY11 through FY20. In the event the MWRA Board of Directors votes to conclude the Program prior to the end of FY20, all financial assistance commitments made prior to the conclusion of the Program shall be fulfilled under the conditions established in each Financial Assistance and Loan Agreement.

### 1.4 Definitions and Abbreviations

A listing of relevant definitions and abbreviations are presented as APPENDIX A and APPENDIX B, respectively.



## SECTION 2 - FINANCIAL ASSISTANCE APPLICATION AND DISTRIBUTION OF FUNDS

### 2.1 Overview

Binding commitments to provide financial assistance for local water system improvement projects will be issued by MWRA's Executive Director or Treasurer in the form of a "Financial Assistance Agreement." An offer for financial assistance will be made by the MWRA following the review of a "Financial Assistance Application" and the determination by MWRA that the project is eligible for financial assistance. The filing of a Financial Assistance Application by a community will not constitute a binding commitment by MWRA to provide financial assistance. A Financial Assistance Agreement may be executed at the discretion of MWRA subject to the availability of Program funds. Financial Assistance Agreements will be executed with communities and project funds will be distributed on quarterly funding distribution dates. **The distribution dates will be on or about February 15, May 15, August 15, and November 15 of each year.** To be eligible to execute a Financial Assistance Agreement on a particular funding distribution date, the community must have submitted a complete Financial Assistance Application in sufficient time to be reviewed and approved by MWRA staff thirty (30) calendar days prior to the proposed funding distribution date and must agree to begin the project within ninety (90) calendar days of execution of the agreement. Financial Assistance Applications may be approved by MWRA if the proposed project meets the eligibility criteria in Section 2.7 and 2.8.

### 2.2 Application for Financial Assistance

Each MWRA water service area community (with a funding allocation set forth in Section 2.4) may apply for funding under the LWSAP by submitting one or more "Financial Assistance Applications" to:

Massachusetts Water Resources Authority  
Community Support Program  
Charlestown Navy Yard  
100 First Avenue  
Boston, MA 02129  
Attn: Planning - Community Support Program

A sample Financial Assistance Application is provided as Attachment 1. An electronic copy (MS Word) of the application is available at [www.mwra.com](http://www.mwra.com), or from Elaine M. Donahue, Project Manager, at [Elaine.Donahue@mwra.com](mailto:Elaine.Donahue@mwra.com) or (617) 788-4824. The direct link to the LWSAP web page is: <http://www.mwra.com/comsupport/lwsap/lwsaprogram.html>. The applicant should provide as complete information as possible on the proposed project. The information provided will be reviewed by MWRA staff to determine if the project is a viable water system rehabilitation project and assess eligible project costs. Once a proposed project has been approved and an award amount designated, MWRA and the community will cooperatively schedule the execution of a Financial Assistance Agreement on or about one of the quarterly funding distribution dates.

### 2.3 Initiation Date for Eligible Project Costs

The initial date for determining community project costs that are eligible to receive funding under the MWRA LWSAP is January 1, 2010. All costs incurred for water system rehabilitation work performed within MWRA service area communities on or after January 1, 2010, regardless of the beginning date of the project, will be considered for eligibility during review of a community's Financial Assistance Application. If projects were substantially completed before January 1, 2010 they will not be eligible. For Lead Service Line Replacement Loan Program project costs, the initiation date for eligible project costs is July 1, 2016. Eligible and ineligible project costs are outlined in Sections 2.7 and 2.8, respectively of both the Water Projects Guidelines and the Lead Service Line Replacement Loan Program Guidelines.

### 2.4 Financial Assistance Allocation Per Community

The \$210 million LWSAP budget is allocated among 42 metro-Boston member water communities and three Chicopee Valley Aqueduct (CVA) member water communities, as outlined below. \$200 million is allocated to participating member water communities based on the following three part formula: (1) \$35.5 million allocated as \$1.0 million to each of the 29 fully supplied communities and \$0.5 million to each of the 13 partially supplied communities; (2) \$82.25 million allocated based on share of MWRA water assessment for FY11; and (3) \$82.25 million allocated based on share of miles of unlined water pipe as determined through a 2010 survey of member communities by MWRA staff. Partially served communities' miles of unlined pipe are prorated based on use of MWRA versus total water use for calendar year 2009. \$10 million LWSAP loan funds are allocated to the three member CVA communities based on share of MWRA CVA water assessment for FY11.

The 45 member communities that are allocated funds under the LWSAP include 29 fully-supplied communities: Arlington, Belmont, Boston, Brookline, Chelsea, Everett, Framingham, Lexington, Lynnfield Water District, Malden, Marblehead, Medford, Melrose, Milton, Nahant, Newton, Norwood, Quincy, Reading, Revere, Saugus, Somerville, Southborough, Stoneham, Swampscott, Waltham, Watertown, Weston, and Winthrop; 13 partially-supplied communities: Bedford, Canton, Dedham/Westwood Water District, Marlborough, Needham, Northborough, Peabody, Stoughton, Wakefield, Wellesley, Wilmington, Winchester, and Woburn; and three fully-supplied Chicopee Valley Aqueduct communities: Chicopee, South Hadley Fire District #1, and Wilbraham. Five special case communities are not allocated funds: Cambridge, which receives MWRA water on an emergency-only basis; Lynn, which receives water only for the GE plant; as well as Clinton, Leominster (emergency only), and Worcester (emergency only) that draw untreated (raw) water from the Wachusett Reservoir.

Distribution of Program funds is spread over a 10-year period FY11 through FY20. Each community's annual allocation is restricted to the larger of (1) 10 percent of their total allocation or (2) \$500,000. If not utilized in a given year, annual allocations roll-over and accumulate up to the community's total allocation. The annual allocation restrictions are intended to limit MWRA loan distributions to about \$21 million per year. Each community's total financial assistance allocation, annual allocation, and funds distributed as of July 2014 are listed on TABLE 1 – ALLOCATION AND FUNDING UTILIZATION BY COMMUNITY on page 4. Note that this table is updated quarterly, see <http://www.mwra.com/comsupport/communitysupportmain.html>.

**TABLE 1**  
**MWRA LOCAL WATER SYSTEM ASSISTANCE PROGRAM**  
**ALLOCATION AND FUND UTILIZATION BY COMMUNITY**  
**THROUGH FEBRUARY 2016**

Community	Community Total Allocation	Community Annual Allocation	Allocation To Date (Year 6)	Funds Distributed Thru Feb 16	Percent Distributed (Year 6)	Total Remaining Funds	Funds Currently Available
Arlington	\$6,225,000	\$622,500	\$3,735,000	\$1,300,000	35%	\$4,925,000	\$2,435,000
Bedford *	\$2,418,000	\$500,000	\$2,418,000	\$2,418,000	100%	\$0	\$0
Belmont	\$3,477,000	\$500,000	\$3,000,000	\$3,000,000	100%	\$477,000	\$0
Boston	\$38,754,000	\$3,875,400	\$23,252,400	\$23,252,400	100%	\$15,501,600	\$0
Brookline	\$3,426,000	\$500,000	\$3,000,000		0%	\$3,426,000	\$3,000,000
Canton *	\$3,216,000	\$500,000	\$3,000,000	\$2,000,000	67%	\$1,216,000	\$1,000,000
Chelsea	\$3,814,000	\$500,000	\$3,000,000	\$1,441,200	48%	\$2,372,800	\$1,558,800
Dedham/Westwood *	\$503,000	\$503,000	\$503,000	\$503,000	100%	\$0	\$0
Everett	\$4,672,000	\$500,000	\$3,000,000	\$2,500,000	83%	\$2,172,000	\$500,000
Framingham	\$7,357,000	\$735,700	\$4,414,200	\$3,678,500	83%	\$3,678,500	\$735,700
Lexington	\$3,024,000	\$500,000	\$3,024,000	\$1,145,015	38%	\$1,878,985	\$1,878,985
Lynnfield Water Dist.	\$1,396,000	\$500,000	\$1,396,000	\$250,000	18%	\$1,146,000	\$1,146,000
Malden	\$7,272,000	\$727,200	\$4,363,200	\$1,774,000	41%	\$5,498,000	\$2,589,200
Marblehead	\$4,237,000	\$500,000	\$3,000,000		0%	\$4,237,000	\$3,000,000
Marlborough *	\$1,917,000	\$500,000	\$1,917,000	\$1,283,800	67%	\$633,200	\$633,200
Medford	\$6,959,000	\$695,900	\$4,175,400		0%	\$6,959,000	\$4,175,400
Melrose	\$3,988,000	\$500,000	\$3,000,000	\$2,440,000	81%	\$1,548,000	\$560,000
Milton	\$4,123,000	\$500,000	\$3,000,000	\$850,000	28%	\$3,273,000	\$2,150,000
Nahant	\$1,490,000	\$500,000	\$1,490,000	\$884,000	59%	\$606,000	\$606,000
Needham *	\$794,000	\$500,000	\$794,000		0%	\$794,000	\$794,000
Newton	\$13,602,000	\$1,360,200	\$8,161,200	\$6,801,000	83%	\$6,801,000	\$1,360,200
Northborough *	\$1,048,000	\$500,000	\$1,048,000		0%	\$1,048,000	\$1,048,000
Norwood	\$4,395,000	\$500,000	\$3,000,000	\$3,000,000	100%	\$1,395,000	\$0
Peabody *	\$1,089,000	\$500,000	\$1,089,000	\$1,089,000	100%	\$0	\$0
Quincy	\$10,505,000	\$1,050,500	\$6,303,000	\$4,651,835	74%	\$5,853,165	\$1,651,165
Reading	\$4,146,000	N/A **	\$4,146,000	\$4,146,000	100%	\$0	\$0
Revere	\$5,034,000	\$503,400	\$3,020,400	\$1,850,000	61%	\$3,184,000	\$1,170,400
Saugus	\$6,621,000	\$662,100	\$3,972,600	\$3,529,844	89%	\$3,091,156	\$442,756
Somerville	\$7,419,000	\$741,900	\$4,451,400	\$1,557,234	35%	\$5,861,766	\$2,894,166
Southborough	\$1,512,000	\$500,000	\$1,512,000		0%	\$1,512,000	\$1,512,000
Stoneham	\$2,339,000	\$500,000	\$2,339,000	\$2,339,000	100%	\$0	\$0
Stoughton*	\$2,506,000	\$500,000	\$2,506,000	\$2,506,000	100%	\$0	\$0
Swampscott	\$3,755,000	\$500,000	\$3,000,000	\$1,849,468	62%	\$1,905,532	\$1,150,532
Wakefield *	\$2,325,000	\$500,000	\$2,325,000	\$1,400,000	60%	\$925,000	\$925,000
Waltham	\$10,293,000	\$1,029,300	\$6,175,800	\$1,798,370	29%	\$8,494,630	\$4,377,430
Watertown	\$2,978,000	\$500,000	\$2,978,000	\$2,000,000	67%	\$978,000	\$978,000
Wellesley *	\$2,350,000	\$500,000	\$2,350,000	\$241,569	10%	\$2,108,431	\$2,108,431
Weston	\$1,625,000	\$500,000	\$1,625,000	\$1,005,000	62%	\$620,000	\$620,000
Wilmington *	\$611,000	\$500,000	\$611,000		0%	\$611,000	\$611,000
Winchester *	\$882,000	\$500,000	\$882,000	\$500,000	57%	\$382,000	\$382,000
Winthrop	\$3,312,000	N/A **	\$3,312,000	\$3,312,000	100%	\$0	\$0
Woburn *	\$2,591,000	\$500,000	\$2,591,000	\$1,000,000	39%	\$1,591,000	\$1,591,000
Chicopee	\$7,153,000	\$715,300	\$4,291,800	\$2,085,000	49%	\$5,068,000	\$2,206,800
South Hadley F.D. 1	\$1,538,000	\$500,000	\$1,538,000		0%	\$1,538,000	\$1,538,000
Wilbraham	\$1,309,000	\$500,000	\$1,309,000		0%	\$1,309,000	\$1,309,000
<b>TOTAL</b>	<b>\$210,000,000</b>			<b>\$95,381,235</b>		<b>\$114,618,765</b>	<b>\$54,638,165</b>

\* Partially Served Communities

\*\* Exempt by Board Approval

## 2.5 Maximum Financial Assistance Award Amount Per Project

All project information submitted as part of the Financial Assistance Application shall be used by MWRA to determine the portion of the total project cost eligible under MWRA's LWSAP. Based on the determined eligible project cost, an "Award Amount" will be established for each project. The financial assistance Award Amount for each community water project shall, in no case, exceed the lesser of:

- (1) the total cost of the project determined by the MWRA to be eligible for financial assistance, or;
- (2) the total Community Financial Assistance Allocation established in Section 2.4.

If Lead Service Line Replacement Loan Program funds are added to a water project, the total Award Amount may exceed the LWSAP allocation established in Section 2.4.

## 2.6 Financial Assistance Loan Apportionment

For MWRA LWSAP funding, one hundred percent (100%) of the total Award Amount will be provided as an interest-free loan. The interest-free loan will be repaid to MWRA in ten equal payments, over a ten-year period, beginning one year from the original quarterly funding distribution date (as established in Section 2.9). For example, if a community receives \$1,000,000 from the LWSAP during the February 2011 funding quarter, then the community would repay a total of \$1,000,000 in ten equal payments of \$100,000 each. The ten repayments would be made on February 15 in the years 2012 through 2021. The loan can be repaid over a shorter period, if the community so desires. Loan repayment requirements are presented in Section 4.

## 2.7 Eligible Project Costs

Financial assistance awarded by MWRA under this program shall be solely for the purpose of rehabilitating community water systems. Costs that are necessary for the effective rehabilitation of local water distribution systems and are eligible under MWRA's LWSAP include, but are not limited to:

- (a) Construction, reconstruction, rehabilitation, alteration, remodeling or other improvements to water distribution facilities, including but not limited to:
  - Replacement or abandonment of unlined water mains;
  - Sliplining of unlined water mains;
  - Water main cleaning and lining of unlined water mains;
  - Replacement or abandonment of asbestos cement pipe or other water pipeline work performed for water quality purposes;
  - Identification and replacement of water service connections constructed of lead or other water services in poor condition;
  - Looping of dead-end water mains;
  - Water valve and hydrant installation or replacement;
  - Water storage tank installation, rehabilitation, or replacement; and,
  - Paving costs that are reasonable and necessary to repair the roadway and/or sidewalk areas directly impacted by eligible construction work.

**Please See Section 2.8 (e). and Note:** Any and all costs associated with the testing, handling, management, and disposal of hazardous waste, as defined under 310 CMR 30.000 are ineligible costs. Any and all costs associated with the testing, handling, management, and disposal of other contaminated or hazardous material (not meeting the definition of hazardous waste, as defined under 310 CMR 30.000) and determined to not be suitable for trench refill shall be limited to ten percent (10%) of the total eligible project cost. Costs associated with the removal, replacement, handling, and disposal of asbestos cement water pipe and/or lead paint from a water tank incidental to an eligible LWSAP project shall be eligible.

- (b) Engineering services, in connection with the inspection of eligible construction/rehabilitation, to ensure that the work is accomplished in accordance with the design drawings and specifications and applicable State laws and activities incidental thereto, including but not limited to:
  - Resident inspection; and,
  - Contract/construction administration.
- (c) Engineering services, in connection with the preparation of plans, specifications, and public bidding documents, for eligible water system construction/rehabilitation projects, including but not limited to:
  - Engineering design services;
  - Surveying; and,
  - Subsurface exploration.
- (d) Post rehabilitation certification and activities incidental thereto associated with eligible water system improvements.
- (e) Direct labor only (not including overhead or overtime costs) for force account work associated with planning, design, construction, or construction inspection of eligible water system improvements;
- (f) Police details associated with eligible project work.
- (g) Establishment of a Massachusetts Municipal Depository Trust (MMDT) or similar account used solely for the deposit, withdrawal, and tracking of financial assistance funds.
- (h) Bond counsel services, or other legal services, in connection with review of the Loan Agreement, Water Bond, and opinion of Bond Counsel.

- (i) To provide communities some flexibility with regard to utilization of the LWSAP funds, additional community projects (known as “Tier Two” projects) that target water system efficiency are eligible for LWSAP loan funding based on the restrictions defined in this paragraph. To emphasize the program’s goal of improving water quality, there shall be a direct correlation between the maximum amount of LWSAP funds that may be used for Tier Two projects and the percentage of lined water main miles in each community.

Specifically, the amount of LWSAP funds that may be used for Tier Two projects shall be restricted to the percent of lined water main miles times the community’s total LWSAP allocation. The percent lined water main miles used to calculate the Tier Two restrictions will be reviewed by MWRA staff and frozen at the time the community is awarded LWSAP loan funds for their first Tier Two project.

Tier Two eligible projects include:

- Water meter purchase and installation;
- Water meter reading system purchase and installation;
- Water booster pump station installation and/or upgrades;
- GIS mapping and system modeling; and,
- Engineering planning, design and construction services associated with the above items.

Each community’s potential Tier Two Allocation and Tier Two funds distributed was established as of July 2014 and is listed on TABLE 2 – TIER TWO FUNDING SUMMARY on page 8.

**TABLE 2**  
**MWRA LOCAL WATER SYSTEM ASSISTANCE PROGRAM**  
**TIER 2 FUNDING SUMMARY**  
**AS OF JULY 2014**

Community	2010 Total Miles	2010 Unlined Miles	2010 Lined Miles	% Lined Miles	Community Total Allocation for 10 years	Potential Tier Two Allocation Restriction	Tier Two Funds Distributed As of July 14
Arlington	131.5	67.8	63.7	48.4%	\$6,225,000	\$3,015,456	
Bedford *	84.6	32.2	52.4	61.9%	\$2,418,000	\$1,497,674	
Belmont	88.0	29.5	58.5	66.5%	\$3,477,000	\$2,311,415	
Boston	1009.0	139.0	870.0	86.2%	\$38,754,000	\$33,415,243	
Brookline	140.0	0.0	140.0	100.0%	\$3,426,000	\$3,426,000	
Canton *	121.0	33.7	87.3	72.1%	\$3,216,000	\$2,320,304	
Chelsea	58.7	27.7	31.0	52.8%	\$3,814,000	\$2,014,208	\$175,000
Dedham/Westwood *	190.0	49.0	141.0	74.2%	\$503,000	\$373,279	
Everett	68.2	35.4	32.8	48.1%	\$4,672,000	\$2,246,944	\$500,000
Framingham	274.0	68.0	206.0	75.2%	\$7,357,000	\$5,531,175	
Lexington	156.8	7.2	149.6	95.4%	\$3,024,000	\$2,885,143	
Lynnfield Water District	29.4	4.6	24.8	84.4%	\$1,396,000	\$1,177,578	
Malden	118.0	75.0	43.0	36.4%	\$7,272,000	\$2,649,966	
Marblehead	79.6	48.1	31.5	39.6%	\$4,237,000	\$1,676,702	
Marlborough *	168.0	13.5	154.5	92.0%	\$1,917,000	\$1,762,955	
Medford	120.0	72.7	47.3	39.4%	\$6,959,000	\$2,743,006	
Melrose	80.3	40.5	39.8	49.6%	\$3,988,000	\$1,976,618	
Milton	138.2	41.4	96.8	70.0%	\$4,123,000	\$2,887,890	
Nahant	23.0	7.0	16.0	69.6%	\$1,490,000	\$1,036,522	\$750,000
Needham *	133.0	42.5	90.5	68.0%	\$794,000	\$540,278	
Newton	318.5	171.9	146.6	46.0%	\$13,602,000	\$6,260,764	
Northborough *	65.0	3.8	61.2	94.2%	\$1,048,000	\$986,732	
Norwood	118.3	41.5	76.8	64.9%	\$4,395,000	\$2,853,221	
Peabody *	170.0	115.0	55.0	32.4%	\$1,089,000	\$352,324	
Quincy	238.0	104.0	134.0	56.3%	\$10,505,000	\$5,914,580	
Reading	110.0	47.0	63.0	57.3%	\$4,146,000	\$2,374,527	
Revere	91.0	43.2	47.8	52.5%	\$5,034,000	\$2,644,233	
Saugus	125.0	85.0	40.0	32.0%	\$6,621,000	\$2,118,720	
Somerville	120.0	73.7	46.3	38.6%	\$7,419,000	\$2,862,498	
Southborough	87.0	4.5	82.5	94.8%	\$1,512,000	\$1,433,793	
Stoneham	78.0	2.0	76.0	97.4%	\$2,339,000	\$2,279,026	\$1,000,000
Stoughton*	147.6	99.4	48.2	32.7%	\$2,506,000	\$818,355	
Swampscott	55.3	41.6	13.7	24.8%	\$3,755,000	\$930,262	
Wakefield *	114.0	26.0	88.0	77.2%	\$2,325,000	\$1,794,737	\$1,400,000
Waltham	157.0	115.7	41.3	26.3%	\$10,293,000	\$2,707,649	
Watertown	80.0	15.0	65.0	81.3%	\$2,978,000	\$2,419,625	
Wellesley *	136.2	73.1	63.1	46.3%	\$2,350,000	\$1,088,730	
Weston	105.0	0.0	105.0	100.0%	\$1,625,000	\$1,625,000	
Wilmington *	126.0	26.5	99.5	79.0%	\$611,000	\$482,496	
Winchester *	105.0	0.0	105.0	100.0%	\$882,000	\$882,000	
Winthrop	45.0	34.8	10.2	22.7%	\$3,312,000	\$750,720	\$750,000
Woburn *	182.2	78.1	104.1	57.1%	\$2,591,000	\$1,480,368	
<b>SUBTOTAL</b>	<b>5985.4</b>	<b>2036.6</b>			<b>\$200,000,000</b>	<b>\$120,548,715</b>	<b>\$4,575,000</b>
Chicopee	262.0	54.0	208.0	79.4%	\$7,153,000	\$5,678,718	
South Hadley F.D. 1	82.0	50.0	32.0	39.0%	\$1,538,000	\$600,195	
Wilbraham	74.0	54.0	20.0	27.0%	\$1,309,000	\$353,784	
<b>SUBTOTAL</b>	<b>418.0</b>	<b>158.0</b>			<b>\$10,000,000</b>	<b>\$6,632,696</b>	
<b>TOTAL</b>	<b>6403.4</b>	<b>2194.6</b>			<b>\$210,000,000</b>	<b>\$127,181,411</b>	

\* Partially Served Communities

## 2.8 Ineligible Project Costs

Costs which are ineligible under the LWSAP shall include, but are not limited to:

- (a) Costs in excess of the approved financial assistance Award Amount;
- (b) Costs for services outside the scope of the approved project, except as modified by an MWRA approved revised project scope of services;
- (c) Ordinary operating expenses of public works departments, water departments, water commissions and water districts, or local government, and overtime and overhead costs associated with eligible force account work;
- (d) Excessive paving costs that are not reasonable and necessary to repair the roadway and/or sidewalk areas directly impacted by eligible construction work.
- (e)
  1. Any and all costs associated with the testing, handling, management, and disposal of hazardous waste, as defined under 310 CMR 30.000;
  2. Any and all costs associated with the testing, handling, management, and disposal of other contaminated or hazardous material (not meeting the definition of hazardous waste, as defined under 310 CMR 30.000) and determined to not be suitable for trench refill that exceeds ten percent (10%) of the total eligible project cost;
  3. **Please Note:** The removal, replacement, handling, and disposal of asbestos cement water pipe and/or lead paint from a water tank incidental to an eligible LWSAP project shall be eligible costs;
- (f) Costs incurred under third party agreements, absent specific contract language which conveys the applicable terms and conditions of the Financial Assistance Agreement to the third party;
- (g) Costs for which payment has been or will be received under any other MWRA, state, or federal grant or loan funding assistance program;
- (h) Costs for the preparation of an MWRA Financial Assistance Application or preparation of funding applications for any other agency;
- (i) Costs for the development or printing of operation and maintenance manuals;
- (j) Costs for development of, or revisions to, water use ordinances, water use rules and regulations, or water user charge systems;
- (k) Costs for sewer system maintenance or rehabilitation (except sewer repair work required due to construction conflicts work directly related to eliminating cross connections to the water distribution system as part of an eligible LWSAP project);



- (l) Costs for the purchase of water pipeline cleaning or inspection equipment;
- (m) Charges for the use of vehicles or equipment owned by the applicant;
- (n) Costs for obtaining permits or licenses by the applicant;
- (o) Bonus payments to contractors for completion of construction earlier than contracted completion date;
- (p) Personal injury compensation, claims related to wrongful deaths, or property damages arising out of the project, however determined;
- (q) Costs of equipment or material procured in violation of state or federal law;
- (r) Fines and penalties;
- (s) Costs of the purchase of real property; and,
- (t) Costs for improving existing or developing new local water supplies or providing treatment to existing supplies.

## 2.9 MWRA Recommended Community Water System Maintenance/Improvement Programs

The LWSAP requires that participating communities acknowledge the MWRA recommended community water system maintenance and improvement programs as part of the Financial Assistance Application Process. The recommended programs include:

- a. **Unidirectional Flushing Program:** MWRA recommends member water communities develop and utilize a Unidirectional Flushing Program. Unidirectional flushing will help to restore and maintain chlorine residual, eliminate taste and odor, dislodge biofilm, reduce bacteria counts, remove colored water and reduce turbidity.
- b. **Distribution System Improvement Plan:** MWRA recommends member water communities identify and compile physical information (pipe size, age, material, etc.) on the local distribution system, develop a base map of the distribution system, and prioritize water quality and hydraulic trouble spots for correction (e.g., system improvement plan, master plan, capital improvement plan, etc.).
- c. **Water Quality Testing:** MWRA recommends member water communities conform to MA Drinking Water Regulations 310 CMR 22.05 that require local sampling based on a DEP approved written sample site plan.
- d. **Cross Connection Control Program Development:** MWRA recommends member water communities conform to MA Drinking Water Regulations 310 CMR 22.20 that require a legally-enforceable cross connection control program with certified cross connection control inspectors on staff.

- e. Community Lead Service Line Replacement Program:** MWRA recommends community programs incorporates at least the following:
1. Communities should clearly establish that it is their goal to fully remove all lead pipe from both publicly-owned and privately-owned water service line connections;
  2. Communities should commit to a comprehensive lead service line inventory program to compile a listing of properties with full or partial lead service lines that will be made available to the public via web page or other similar public access vehicle (subject to disclaimer for accuracy based on best available information);
  3. Communities should target proactive outreach to customers with lead service lines to provide educational information regarding the risks of lead exposure and information encouraging the customer to participate in the community lead service line replacement program so that the privately-owned portion is replaced concurrent with the publicly-owned portion;
  4. Communities should maintain ongoing proactive outreach to customers with known privately-owned lead service lines;
  5. Communities should include a unit cost bid item for public and private portion service line replacement in all water pipeline projects so that a mechanism exists for full removal of lead service lines; and,
  6. As a secondary measure, communities' lead service line replacement programs should include replacement of lead gooseneck connections when encountered during infrastructure rehabilitation or construction.

Applicant communities must acknowledge these five maintenance practices recommended by MWRA in the Financial Assistance Application. This acknowledgement is intended to make sure that communities understand that implementing maintenance programs, combined with water system rehabilitation projects, will help maintain high water quality in the distribution systems and at the customer's tap.

#### 2.10 Commitment and Distribution of Funds

**Throughout the term of the Program, Financial Assistance and Loan Agreements will be executed on (or about) the following quarterly funding distribution dates: February 15, May 15, August 15, and November 15.** Financial Assistance and Loan Agreements will be executed by MWRA's Executive Director, Director of Finance, or Treasurer on behalf of MWRA and an appropriate representative of the community who has been authorized to act as the municipality's agent. Documentation of this authorization will be made part of the executed Financial Assistance Agreement. The Loan Agreement will incorporate an opinion from the community's bond counsel stating that the loan portion of the financial assistance is a valid general obligation of the municipality. The community must also certify that all actions required by the municipality to expend the financial assistance funds have been obtained; that all permits, easements, and all other project requirements and approvals have been obtained; and that implementation of the project is intended to begin within ninety (90) calendar days of execution of the agreement.

The Financial Assistance Agreement will contain a number of additional project specific terms and conditions that the municipality will agree to upon execution of the agreement. Following execution of the Financial Assistance and Loan Agreements, MWRA will have the entire financial assistance award amount electronically transferred into a Massachusetts Municipal Depository Trust (MMDT) account (or similar account approved by MWRA) designated and arranged by the community. **All financial assistance funds, together with the earnings (interest) from the MMDT account, shall be applied to the cost of MWRA approved community water system rehabilitation projects.**

#### 2.11 Multiple Financial Assistance Distributions

If a community seeks additional MWRA funding for additional eligible project costs on a previously funded project, a separate Financial Assistance Application may be submitted to MWRA. Financial assistance for additional community project costs or additional projects will be provided through execution of a separate Financial Assistance Agreement. Communities may receive financial assistance through the execution of multiple Financial Assistance Agreements as long as the total Financial Assistance Allocation (established in Section 2.4) is not exceeded. The repayment amount and schedule established in each Financial Assistance Agreement shall not be modified due to the execution of a second (or multiple) Financial Assistance Agreement. The repayment amount and schedule for each Financial Assistance Agreement shall be established independently.

#### 2.12 Limitation on Financial Assistance Award

The award of financial assistance by MWRA shall not constitute a commitment for approval of financial assistance for a subsequent project or additional work under the initial project. If a subsequent project or additional work under the initial project is initiated prior to execution of a Financial Assistance Agreement, the applicant proceeds at its own risk. However, all costs incurred for community water system rehabilitation projects on or after January 1, 2010 will be considered for eligibility under the LWSAP, even if the project is underway prior to submittal of the Financial Assistance Application.

#### 2.13 Interaction With Other MWRA Funding Programs, the State Revolving Fund, and Other Programs of Assistance

All costs for which payment has been or will be received under MWRA's Lead Service Line Replacement Loan Program, MWRA's CSO Program, MWRA's I/I Local Financial Assistance Program, the State Clean Water or Drinking Water Revolving Fund, the State Water Conservation Grant Program, or any other state, federal, or other program of assistance shall not be considered an "eligible" cost under the MWRA LWSAP. However, a community's acquisition of other grant or loan funds which are not requested for eligibility under the MWRA Assistance Program, shall not adversely influence the award of MWRA financial assistance.

#### 2.14 Massachusetts Municipal Depository Trust (MMDT) Account and Use of Earned Interest

The applicant is required to establish a Massachusetts Municipal Depository Trust (MMDT) account (or similar account approved by MWRA) for the program. MWRA will deposit the financial assistance funds into the MMDT account. The financial assistance funds must remain separated from other community funds and accounts. No other community funds may be deposited to this account. **Funds must be drawn from the MMDT account to pay project expenses, or to reimburse other municipal accounts that have been used to pay project expenses. The MMDT account must be drawn down in parallel with project expenses throughout the life of the project. Investment reports from the account shall be furnished to MWRA on a regular basis. All interest earned on the financial assistance funds shall be used by the community to cover eligible project costs or additional phases of the community's water system rehabilitation program, as approved by MWRA.**

## SECTION 3 - FINANCIAL ASSISTANCE AGREEMENT

### 3.1 Overview

Following review of a community's Financial Assistance Application, MWRA will determine the eligible project cost and establish the project Award Amount. Once the Award Amount is determined, MWRA will draft a Financial Assistance Agreement. Prior to the distribution of funds to any community under the Program, both MWRA and the community will be required to execute a Financial Assistance Agreement. The Financial Assistance Agreement will stipulate all applicable terms and conditions of the loan funding provided by MWRA for the community's water system rehabilitation project, including, but not limited to: project scope of work (Attachment A); project schedule (Attachment B); documentation that the community representative who executes the agreement is authorized to act as the municipality's agent (Attachment C); project inspection, reporting, audit, and closeout provisions; and project specific special conditions. The applicant shall signify its acceptance of the terms and conditions through execution of the Financial Assistance Agreement.

Appended to the Financial Assistance Agreement will be a separate Loan Agreement. The Loan Agreement process includes: (1) an Opinion of the Community's Bond Counsel stating that the loan is a valid general obligation of the municipality; and (2) a Water Bond prepared by the Community's Bond Counsel and executed by authorized community representatives. The loan repayment amount and schedule is stipulated in the Water Bond.

The Financial Assistance and Loan Agreements will not be executed by the Authority until such time as a draft Water Bond and Opinion of the Community's Bond Counsel have been received by the Authority. Financial assistance funds will not be distributed by the Authority until such time as the original Water Bond and Opinion of the Community's Bond Counsel have been received by the Authority.

### 3.2 Projects With Retroactive Funding

For projects where a community seeks to apply for MWRA loan funds to retroactively reimburse project costs previously advanced via community funds, the community is advised that prior local authorization (via Town Meeting approval, City Council vote, etc.) approving repayment to MWRA is generally required to have occurred **prior** to the expenditure of project costs. With appropriate approvals, community funds may provide bridge financing for some portion of the project, while awaiting permanent MWRA loan funding. As with all community financing options, the community's financial advisor and Bond Counsel representative should be consulted for advice on proper authorization language and appropriate timing of authorization/borrowings to ensure each community's unique legal requirements are met.

### 3.3 Assignment of Agreement Requirements to a Third Party

For cost efficiencies, some portion of local projects may be performed under an agreement with a separate agency (third party). Examples of this type of arrangement include water pipeline rehabilitation work contained in contracts performed by Massachusetts DPW, DCR, MBTA, BRA, Boston Public Works, etc. Absent specific contract language, the third party would not generally be subject to the terms and conditions of the Financial Assistance Agreement. If the applicant demonstrates to MWRA that an agreement exists between the local community and the third party which conveys the applicable terms and conditions of the Financial Assistance Agreement to the third party, then the costs for the water pipeline work will be considered for eligibility. If no such agreement exists, then project costs incurred under third party agreements will be considered ineligible.

## SECTION 4 - LOAN REPAYMENT REQUIREMENTS

### 4.1 Repayment of Interest-Free Loan

For each funding award under the MWRA LWSAP, one hundred percent (100%) of the total Award Amount will be provided as an interest-free loan. The interest-free loan will be repaid to MWRA, in ten equal payments, over a ten-year period, beginning one year after the original quarterly funding distribution date (as established in Section 2.10). Each loan repayment will be due to MWRA annually on the quarterly distribution date.

Forty-five (45) days prior to each annual loan repayment date, MWRA will send the community an invoice that will include the following:

- (1) the terms that will be 45 days from the invoice date;
- (2) the loan repayment due date;
- (3) the annual loan repayment amount;
- (4) a description of the charge;
- (5) the remit address for checks and wires; and,
- (6) the phone number of the MWRA Treasury Office and contact person to call with questions on repayment procedures.

The loan may be repaid early, in less than ten years, if the community so desires. Payments should continue to be made on the anniversary date of the loan, but the amount can be increased if the community wishes to pay off the loan early. If a community wishes to pay an amount in advance of the anniversary date and prior to receiving an invoice, identifying correspondence should accompany the payment in order for MWRA's Treasury Department to properly credit the remaining balance due the proper account. All payments should be clearly identified on the remittance copy of the invoice, especially if the amount paid differs from the amount of the invoice.

## **SECTION 5 - EXPENDITURE VERIFICATION REQUIREMENTS, PROJECT INSPECTION, PROJECT CLOSEOUT, AND AUDIT PROVISIONS**

### **5.1 Expenditure Verification Requirements**

The community shall submit progress reports to MWRA that outline the overall progress of the project, the progress of key project tasks, and the financial status of the project relative to the initial project budget. MWRA will provide standardized forms for progress reporting. Progress reports will be submitted to a designated MWRA Project Manager who will be the key MWRA contact person for all community inquiries regarding the MWRA LWSAP. To enable MWRA to track project expenditures, the community shall append to each progress report appropriate backup information that will document the costs specific to the funded project. Appropriate cost backup information shall include, but not be limited to, consultant and/or contractor invoices, purchase orders, force account time sheets, etc. The frequency of progress reporting will depend on the project cost, duration, and schedule. Most progress reports are expected to be semi-annual.

### **5.2 Project Inspection**

A community receiving funding under MWRA's LWSAP shall make the project site and all project records available to MWRA staff for review during the course of the project. MWRA staff will periodically monitor the progress of work for which MWRA financial assistance has been provided. The intent of these periodic inspections will be to insure that the project is: (1) proceeding substantially as defined in the Scope of Work (Attachment A) and Project Schedule (Attachment B) of the executed Financial Assistance Agreement; and (2) proceeding in a manner which will produce the water system improvements which the community estimated would be achieved in the Financial Assistance Application. Appropriate wording which will allow MWRA staff access to the project site and project records shall be included in the Financial Assistance Agreement and project contracts related to performance of work for which the community is receiving financial assistance funding.

### **5.3 Project Closeout Provisions**

Upon completion of the project, the community shall notify MWRA that the project is complete and shall certify that all work included in the Scope of Work section of the executed Financial Assistance Agreement has been completed and performed in accordance with said Agreement. MWRA will provide the community with a project closeout package that includes a summary of all project expenditures and identifies the final project cost. The community shall review, execute, and return the project closeout package to MWRA. Prior to project closeout, MWRA will work cooperatively with the community to make every effort to expend the total project financial assistance Award Amount on project related (or other approved water system project) expenditures. To ensure that the total project financial assistance Award Amount is expended, MWRA will consider allowing: (1) an increase in the quantity of existing eligible items in the project Scope of Work, (2) additions to the project Scope of Work, or (3) the transfer of unused funding to a second (or future) funded project which has additional eligible project costs which were not already funded under a separate Financial Assistance Agreement.



#### 5.4 Project Audit Provisions

The community, the community's engineer(s), and the community's contractor(s) shall maintain books, records, documents, and other evidence directly related to the performance of all work receiving funding under the Financial Assistance Agreement in accordance with generally accepted professional practice and appropriate accounting procedures and practices. The community, the community's engineer(s), and the community's contractor(s) shall also maintain the financial information and data used by the engineer(s) and contractor(s) in the preparation or support of the cost submission and a copy of the cost summary submitted to the community. MWRA shall have access to such books, records, documents, and other evidence for inspection, audit, and copying during normal business hours, upon ten (10) days notice and at MWRA's expense. The community, the community's engineers, and the community's contractors shall provide proper facilities for such access and inspection. All of the documents shall be kept for at least seven (7) years after the final payment to the engineer or contractor, or at least seven (7) years after closeout of the project, whichever is later.

The community shall agree to include the wording of the above paragraph in all contracts and subcontracts related to performance of work for which the community is receiving MWRA financial assistance funding.

Audits conducted by MWRA, or its duly authorized representatives, shall be in accordance with generally accepted auditing standards and established procedures and guidelines of MWRA. Such audits shall be conducted at the expense of MWRA upon ten (10) days notice to the community.

The community agrees to provide MWRA with a copy of the community's annual audited financial statements within a reasonable time after the issuance thereof, together with a certificate of the community stating that the community is in compliance with its obligations under this agreement.

## SECTION 6 - EQUAL EMPLOYMENT OPPORTUNITY, ANTIDISCRIMINATION, AND AFFIRMATIVE ACTION GOALS

### 6.1 Overview

The community shall not discriminate against any employee or applicant for employment because of race, religion, color, sex, age, handicap status or national origin. The community, the community's engineer(s), and the community's contractor(s) shall comply with all applicable laws and regulations pertaining to nondiscrimination, equal opportunity and affirmative action, including without limitation, executive orders and rules and regulations of federal and state agencies of competent jurisdiction. As detailed below, the community shall make positive efforts to use minority-owned business enterprises (MBE) and woman-owned business enterprises (WBE) for professional services, non-professional services and construction related work that has received funding under the MWRA LWSAP. The community shall also require all construction contractors and subcontractors to make positive efforts to meet the percentage goal for minority employee work force hours and woman employee work force hours, as detailed below. Minority and women-owned businesses (MBEs and WBEs) who participate as part of this Program should be certified as such by the Supplier Diversity Office (SDO).

For the purpose of establishing MBE/WBE participation goals and minority/woman employee work force hour goals for projects receiving funding under the MWRA LWSAP, all eligible project costs should be designated to one of the following four categories of work:

- (a) Professional Services (see Section 6.2);
- (b) Non-professional Services (see Section 6.3);
- (c) Construction (see Section 6.4); and,
- (d) Force Account Work (see Section 6.5).

The goals for MBE/WBE participation and minority/woman employee work force hour percentages are specific to the category of work being performed. The goals for each category of work are detailed below.

### 6.2 Goals for Professional Services

A community that receives MWRA LWSAP funds for a project under the Professional Services category of work should make positive efforts to achieve a goal of 7.18 percent participation of Minority-owned Business Enterprise(s) and 5.77 percent participation of Woman-owned Business Enterprise(s) within the project contracts. At a minimum, the community should allow MBEs and WBEs the maximum feasible opportunity to compete for subagreements to be performed under the project. The community will not be required to include MWRA's MBE/WBE Compliance Forms or MWRA's Requirements for Minority and Woman Business Enterprise and Equal Employment Opportunity Consultant Services Forms within its professional services contracts.

### 6.3 Goals for Non-Professional Services

A community that receives MWRA LWSAP funds for a project under the Non-Professional Services category of work should make positive efforts to achieve a goal of 5.61 percent participation of Minority-owned Business Enterprise(s) and a goal of 4.88 percent participation of Woman-owned Business Enterprise(s) within project contracts. At a minimum, the community should allow MBEs and WBEs the maximum feasible opportunity to compete for subagreements to be performed under the project. The community will not be required to include MWRA's Supplemental Provisions for Equal Employment Opportunity, Antidiscrimination and Affirmative Action Forms within its construction contracts/specifications or non-professional services contracts.

The community shall agree to include the wording of the above paragraph in all contracts and subcontracts related to performance of work for which the community is receiving MWRA financial assistance funding.

### 6.4 Goals for Construction

A community which receives MWRA LWSAP funds for a project under the Construction category of work should make positive efforts to achieve: (1) a minority employee work force goal of 15.3 percent, (2) a woman employee work force goal of 6.90 percent, (3) a goal of 7.24 percent participation of Minority-owned Business Enterprise(s), and (4) a goal of 3.60 percent participation of Woman-owned Business Enterprise(s) within project contracts. At a minimum, the community should allow MBEs and WBEs the maximum feasible opportunity to compete for subagreements to be performed under the project. The community will not be required to include MWRA's Supplemental Provisions for Equal Employment Opportunity, Antidiscrimination and Affirmative Action Forms within its construction contracts/specifications or non-professional services contracts.

The community shall agree to include the wording of the above paragraph in all contracts and subcontracts related to performance of work for which the community is receiving MWRA financial assistance funding.

### 6.5 Force Account Work

The Community shall strive to achieve on the MWRA's Lead Loan Program the labor participation goals contained herein. Said participation goals shall apply in each job category on this program including but not limited to bricklayers, carpenters, cement masons, electricians, ironworkers, operating engineers and those classes of work enumerated in Section 44F of Chapter 149 of the Massachusetts General Laws. The participation goals for this project shall be **15.3%** for minorities and **6.9%** for women. The participation goals, as set forth herein, shall not be construed as quotas or set-asides; rather, such participation goals will be used to measure the progress of the Commonwealth's equal opportunity, non-discrimination and affirmative action program.

## SECTION 7 - INSTRUCTIONS FOR COMPLETING FINANCIAL ASSISTANCE APPLICATION

### 7.1 Application Instructions

Each MWRA water service area community meeting the funding eligibility set forth in Section 2.4 may apply to MWRA for funding under MWRA's LWSAP by completing and filing the required application form. MWRA shall review each submitted application to determine the adequacy, accuracy and completeness of the information contained therein. MWRA may request the applicant provide additional project information and/or request the applicant attend a meeting to review details of the proposed project.

MWRA's LWSAP Financial Assistance Application is presented as Attachment 1. All questions within the application must be answered completely and accurately. The application and all supporting documentation should be submitted to:

Massachusetts Water Resources Authority  
Community Support Program  
Charlestown Navy Yard  
100 First Avenue  
Boston, MA 02129  
Attn: Planning - Community Support Program

An electronic copy (MS Word or PDF) is available at [www.mwra.com](http://www.mwra.com), or from Elaine M. Donahue, Project Manager, at [Elaine.Donahue@mwra.com](mailto:Elaine.Donahue@mwra.com) or (617) 788-4824. The direct link to the LWSAP page is: <http://www.mwra.com/comsupport/lwsap/lwsaprogram.html>. A discussion of each section of the Financial Assistance Application is presented below.

#### **Section 1 - Financial Assistance Requested**

This section is self-explanatory.

#### **Section 2 – Acknowledge MWRA Recommended Community Water System Maintenance and Improvement Programs**

Each community participating in the LWSAP must acknowledge certain MWRA recommended water system maintenance practices (see detail in Section 2.9).

#### **Section 3 - Project Description**

The applicant should provide as complete and detailed information as possible on the proposed project. The information provided will be reviewed by MWRA staff to determine if the project is a viable water system rehabilitation project and assess the eligible project costs. It is important that the project proponent state the estimated water system improvements anticipated from completion of the project construction phase.

#### **Section 4 - Documentation of Project Need**

Identify records that document the project's need, including, but not limited to: report recommendations (Facility Plans, leak reports, water quality reports, Water System Evaluation Surveys, local water source protection studies); physical surveys and internal inspections; and other pertinent DPW/Water Department maintenance records.

#### **Section 5 - Project Schedule**

The application must contain a realistic schedule outlining important milestones in the planning, design, or construction phases of the project. If final paving and/or project closeout are anticipated to be delayed due to winter season, please note this in the project schedule. The estimated project start date must be included.

#### **Section 6 - Map of Project**

The application should be accompanied by a project map, denoting the water distribution system and/or general plan of the proposed project site. If no map or plan is submitted with the application, an appropriate explanation must be provided.

#### **Section 7 - Project Funding**

The applicant must identify if 100 percent of the proposed project funding will come from MWRA's LWSAP or if a portion of the project funds will come from other funding sources. If additional funds are required to perform the project, the applicant must identify them in this section of the application. Documentation of the availability of the additional funds should be included with the application or, if the additional funding is anticipated through a future action, the anticipated availability date of the additional funds should be provided.

#### **Section 8 - Summary of Costs**

In the space provided (or as an attachment) list each project phase (i.e. Planning, Design, Construction, Construction Services, etc.). Under each phase list the major tasks of work required to complete the project. For each major task provide an estimate of the total cost and eligible cost under the appropriate heading. Major tasks may include those listed as eligible project costs in Section 2.7 of the Program Guidelines or other costs that may or may not be eligible for financial assistance funding. **Note that if construction paving costs represent more than ten percent (10%) of the project cost, they should be identified as a separate project phase or subtask in Section 8 - Summary of Costs.** At the bottom of the Summary of Costs section, provide the date of the cost estimate, the appropriate Engineering News Record (ENR) Construction Cost Index, and the name of the person or firm who developed the cost estimate. Engineering costs should be broken down into the major engineering tasks as outlined in a standard engineering agreement. The following information should be provided for each engineering task: staff labor category, staff hours, hourly rates, direct labor costs, indirect labor costs, other direct costs and/or expenses, etc. For ease of preparation, a cost spreadsheet form may be submitted. Construction costs should be documented through an engineering cost estimate or bid tabulation, if available.

### **Section 9 - Interdependent Projects**

The application must note whether financing has been received or is being requested for this project, or a separate phase of the project, from a non-MWRA grant, the Drinking Water State Revolving Fund (DWSRF) program, or any other federal, state or other funding program. The applicant must specify interdependent projects or portions of projects. For example, if the applicant is performing the design phase of a project under State grant or DWSRF funding, and MWRA financial assistance is being requested for the construction phase, then the construction phase is dependent on completion of the design.

### **Section 10 - Intermunicipal Projects**

If the project will serve two or more municipalities, or one community's project extends into another community, the applicant must explain the circumstances. State whether the municipalities have, or propose to have, an intermunicipal agreement or another legally binding document covering financing, construction, and/or operation of the proposed improvements. If not, detail historic cooperative service relationships between the parties.

### **Section 11 - Project Permits and Certificates**

The applicant should specify permits and/or certificates that have been obtained or may be required prior to initiation of the proposed project. A list of permits and certificates, which may be applicable, is provided in the application. Additional permits and/or certificates may be required which are not shown on the list provided.

### **Section 12 - Construction Plans, Specifications, and Bidding Documents**

For proposed construction projects and equipment/material purchases, the applicant should outline the status of the plan, specification, and bidding document preparation, and the time schedule for completion. If these documents are not required for the project, an explanation must be included in this section.

### **Section 13 - Engineering Agreement**

For proposed planning and design projects, the applicant should outline the status of an engineering agreement and time schedule for its completion. If no engineering agreement is required for the project, an explanation must be included in this section.

### **Section 14 - Force Account Work**

If the applicant proposes to perform any funding eligible portion of the project (planning, design, construction services, or construction activities) using its own staff (City, Town, District, or Commission employees), a description of the proposed activities must be provided. The use of the applicant's own employees is defined as "force account work".

Only direct labor costs associated with force account work may be approved as eligible costs if documentation of the direct labor hours and cost per hour are provided to MWRA. Charges for overhead, overtime, and/or the use of vehicles or equipment owned by the applicant and staff time to obtaining permits or licenses are ineligible.

To document Force Account Work, MWRA requires detailed records of staff hours worked on the project. As part of its regular project progress reports to MWRA, the community must provide a breakdown of staff names, titles, job duties, hours worked on the project, and hourly pay rates. Detailed records such as weekly time sheets should be submitted as backup to summary spreadsheet information. If weekly time sheet information is not available for submittal, an appropriate community representative with direct knowledge of the project activities will be required to certify via signed statement that the force account hours being submitted to MWRA as eligible work are authentic.

### **Section 15 - Other Project Information**

The applicant is encouraged to provide any other additional information that may enable MWRA to determine that the project is a viable water system rehabilitation project and assess the eligible project costs.

## APPENDIX A - DEFINITION OF TERMS

Authority - Massachusetts Water Resources Authority.

Board of Directors - Board of Directors of the Massachusetts Water Resources Authority.

Executive Director - Executive Director of the Massachusetts Water Resources Authority.

Financial Assistance - Monies provided to public entities.

Grant - Monies provided to public entities that do not require repayment.

Loan - Monies provided to public entities that are required to be repaid over a specified time period.

Service Area Communities - All municipalities, water districts and commissions served by the MWRA's Waterworks System.

Treasurer - Treasurer of the Massachusetts Water Resources Authority.



**APPENDIX B - ABBREVIATIONS**

BRA:	Boston Redevelopment Authority
CMR:	Commonwealth of Massachusetts Regulation
CSO:	Combined Sewer Overflow
CVA:	Chicopee Valley Aqueduct
DCR:	Department of Conservation and Recreation
DPW:	Department of Public Works
DOT:	Massachusetts Department of Transportation
DWSRF:	Drinking Water State Revolving Fund
EIR:	Environmental Impact Report
ENF:	Environmental Notification Form
ENR:	Engineering News Record
EPA:	United States Environmental Protection Agency
FY:	Fiscal Year
GIS:	Geographic Information System
LWSAP:	Local Water System Assistance Program
MassDEP:	Massachusetts Department of Environmental Protection
MBE:	Minority-owned Business Enterprise
MBTA:	Massachusetts Bay Transit Authority
MMDT:	Massachusetts Municipal Depository Trust
MWRA:	Massachusetts Water Resources Authority
O&M:	Operation and Maintenance
SDO:	Supplier Diversity Office
WBE:	Woman-owned Business Enterprise

**ATTACHMENT 1**

**MWRA LOCAL WATER SYSTEM ASSISTANCE PROGRAM**

**FINANCIAL ASSISTANCE APPLICATION  
FOR  
WATER PROJECTS**

**(Water Projects may include a Lead Service Line Replacement Component)**

**July 2016**

MASSACHUSETTS WATER RESOURCES AUTHORITY  
CHARLESTOWN NAVY YARD, 100 FIRST AVENUE, BOSTON, MA 02129

MWRA LOCAL WATER SYSTEM ASSISTANCE PROGRAM  
FINANCIAL ASSISTANCE APPLICATION  
Updated July 2016

FOR MWRA USE ONLY

PROJECT NO.: \_\_\_\_\_ APPLICANT: \_\_\_\_\_

NAME OF PROJECT: \_\_\_\_\_  
\_\_\_\_\_

DATE RECEIVED: \_\_\_\_\_

**Section 1 - Financial Assistance Requested**

Name of Applicant: \_\_\_\_\_

Address of Applicant: \_\_\_\_\_  
\_\_\_\_\_

Name of Authorized Representative: \_\_\_\_\_

Telephone Number of Representative: \_\_\_\_\_

Name of Applicant's Consultant Firm and Representative (if applicable):

\_\_\_\_\_ Telephone No.: \_\_\_\_\_

The following attached exhibits are hereby made part of this application for financial assistance under the MWRA's Local Water System Assistance Program and the undersigned representative of the Applicant certifies that the information presented in this application and its exhibits is true, correct and complete to the best of their knowledge:

\_\_\_\_\_  
(Date) (Signature of Authorized Representative) (Title)

## Section 2 – Acknowledge MWRA Recommended Community Water System Maintenance and Improvement Programs

The Local Water System Assistance Program requires that participating communities acknowledge the MWRA recommended community water system maintenance and improvement programs as part of the Financial Assistance Application Process. The recommended programs include:

- a. **Unidirectional Flushing Program:** MWRA recommends member water communities develop and utilize a Unidirectional Flushing Program. Unidirectional flushing will help to restore and maintain chlorine residual, eliminate taste and odor, dislodge biofilm, reduce bacteria counts, remove colored water and reduce turbidity.
- b. **Distribution System Improvement Plan:** MWRA recommends member water communities identify and compile physical information (pipe size, age, material, etc.) on the local distribution system, develop a base map of the distribution system, and prioritize water quality and hydraulic trouble spots for correction (i.e. system improvement plan, master plan, capital improvement plan, etc.).
- c. **Water Quality Testing:** MWRA recommends member water communities conform to MA Drinking Water Regulations 310 CMR 22.05 that requires local sampling based on a DEP approved written sample site plan.
- d. **Cross Connection Control Program Development:** MWRA recommends member water communities conform to MA Drinking Water Regulations 310 CMR 22.20 that require a legally-enforceable cross connection control program with certified cross connection control inspectors on staff.
- e. **Community Lead Service Line Replacement Program:** MWRA recommends community programs incorporates at least the following:
  1. Communities should clearly establish that it is their goal to fully remove all lead pipe from both publicly-owned and privately-owned water service line connections;
  2. Communities should commit to a comprehensive lead service line inventory program to compile a listing of properties with full or partial lead service lines that will be made available to the public via web page or other similar public access vehicle (subject to disclaimer for accuracy based on best available information);
  3. Communities should target proactive outreach to customers with lead service lines to provide educational information regarding the risks of lead exposure and information encouraging the customer to participate in the community lead service line replacement program so that the privately-owned portion is replaced concurrent with the publicly-owned portion;
  4. Communities should maintain ongoing proactive outreach to customers with known privately-owned lead service lines;
  5. Communities should include a unit cost bid item for public and private portion service line replacement in all water pipeline projects so that a mechanism exists for full removal of lead service lines; and,

6. As a secondary measure, communities' lead service line replacement programs should include replacement of lead gooseneck connections when encountered during infrastructure rehabilitation or construction.

Applicant communities must acknowledge these five maintenance practices recommended by MWRA in the Financial Assistance Application. This acknowledgement is intended to make sure that communities understand that implementing maintenance programs, combined with water system rehabilitation projects, will help maintain high water quality in the distribution systems and at the customer's tap.

Community Acknowledgement

\_\_\_\_\_  
Signature Title

Please provide any additional information on the status of the system maintenance practices, at your discretion.

**Additional Information:**

---

---

---

---

---

---

---

---

---

---



**Section 4 - Documentation of Project Need**

Identify records that document the project's need, including, but not limited to:

- a. Water quality testing results;
- b. Customer complaints;
- c. Water System Evaluation Surveys;
- d. Distribution System Studies;
- e. Hydraulic Analyses;
- f. Physical Surveys;
- g. Internal TV Inspection;
- h. DPW Maintenance Records;
- i. Lead Service Line Inventory;

---

---

---

---

---

---

---

**Section 5 - Project Schedule**

Provide a realistic schedule outlining important milestones in the planning, design, and/or construction phase. If final paving and/or project closeout are anticipated to be delayed due to winter season, please note this in the project schedule. If a schedule is attached to the financial assistance application separate from this section, please note the attachment here. The estimated project start date must be included.

---

---

---

---

---

---

---

**Section 6 - Map of Project**

Attach a project map denoting the distribution system and/or general plan of the proposed project site. A printout of the project area on GIS or AutoCAD would be preferable. If no map or plan is submitted with the application, an explanation must be provided.

---



---



---



---



---

**Section 7 - Project Funding**

The applicant must list the sources of funding proposed for the project and, if funding through the MWRA Local Water System Assistance Program will not cover 100 percent of the project costs, the applicant must demonstrate that sufficient funds are available to cover the additional project costs from other resources. **Documentation of the availability of other resources may be in the form of a Town Meeting Action, City Council Vote, or other binding action and, if available, should be attached to the application.** Sources of funding for the project include:

<u>Source</u>	<u>Amount</u>	<u>Date Available</u>
a. MWRA LWSAP Loan		N/A
b. MWRA Lead Service Line Replacement Loan		N/A
c. Community Cash		
d. General Obligation Bond		
e. Non-MWRA Grant		
f. Drinking Water State Revolving Fund		
g. Other (Specify Source)		

\_\_\_\_\_

TOTAL \$





**Section 9 - Interdependent Projects**

Explain whether financing has been received or is being requested for this project, or a separate phase of the project, from a Non-MWRA grant, the Drinking Water State Revolving Fund (DWSRF) program, or another grant/loan program.

Specify related and/or interdependent projects or portions of projects. For example, if the applicant is performing the design phase of a project under State grant or DWSRF funding, and MWRA financial assistance is being requested for the construction phase under this application, then the construction phase is dependent on completion of the design phase.

---

---

---

---

---

---

---

---

**Section 10 – Intermunicipal Projects**

If the project will serve two or more municipalities, or one community's project extends into another community, the applicant must explain the circumstances. State whether the municipalities have, or propose to have an intermunicipal agreement or another legally binding document covering financing, construction, and/or operation of the proposed improvements. If not, detail historic cooperative service relationships between the parties.

---

---

---

---

**Section 11 - Project Permits and Certificates**

Check the list below or note additional permits or certificates which: (1) have been obtained, (2) will be obtained, or (3) may be required prior to initiation of the project.

	<u>Has been Obtained</u>	<u>Will be Obtained</u>	<u>May be Required</u>
U. S. ARMY CORPS OF ENGINEERS	_____	_____	_____
MA DIVISION OF WATERWAYS Chapter 91 License	_____	_____	_____
LOCAL CONSERVATION COMMISSION	_____	_____	_____
DEP - DIVISION OF AIR QUALITY	_____	_____	_____
DPW HIGHWAY PERMIT	_____	_____	_____
DCR CONSTRUCTION PERMIT	_____	_____	_____
MBTA/CONRAIL LICENSE	_____	_____	_____
DWPC (401) WATER QUALITY CERT.	_____	_____	_____
MEPA - Environment Notification Form (ENF) and/or Environmental Impact Report (EIR)	_____	_____	_____
FLOOD INSURANCE PARTICIPATION	_____	_____	_____
HISTORIC - Mass. Historical Commission	_____	_____	_____
LEGISLATION - Legislation from the Mass. General Court could be required prior to: construction in dedicated conservation land, construction by one community within the municipal boundaries of another, and easements in state owned land.	_____	_____	_____
OTHER _____	_____	_____	_____

**Section 12 - Construction Plans, Specifications, and Bidding Documents**

For proposed construction projects and equipment/materials purchases, the applicant should outline the status of the plan, specification, and bidding document preparation and the time schedule for completion. If these documents are not required for the project, an explanation must be included in this section.

If available, a copy of the final engineering plans, specifications, and bidding documents for each contract or equipment/material purchase should be submitted with the application.

---

---

---

---

---

---

---

**Section 13 - Engineering Agreement**

For proposed planning, design, and/or construction projects, the applicant should outline the status of an engineering agreement and time schedule for its completion (if a Consulting Engineer will be used for any portion of the project). If no engineering agreement is required for the project, an explanation must be included in this section.

If available, a copy of the proposed or executed engineering agreement for each contract should be submitted with the application.

---

---

---

---

---

**Section 14 - Force Account Work**

If the applicant proposes to perform any funding eligible portion of the project (planning, design, construction services or construction activities) using its own staff (force account work), a description of the force account activities must be provided. List the type of force account task, staff titles, affiliated Department, estimated hours to perform task, direct labor rates (or range) for each title, etc. **Please note that charges for overhead, overtime, and/or the use of vehicles or equipment owned by the applicant, and staff time to obtain permits or licenses are ineligible.**

---

---

---

---

---

**Section 15 - Other Project Information**

The applicant is encouraged to provide any other additional information that may enable the Authority to determine that the project is a viable water system rehabilitation project and assess the eligible project costs.

---

---

---

---

---

---

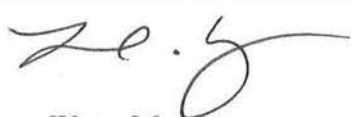
---

---

---


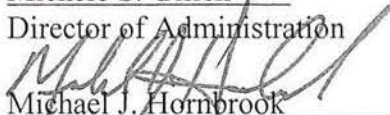
---

STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** May 11, 2016  
**SUBJECT:** Flow Testing Services for MWRA's Revenue Water Meters  
Complete Control Services, Inc.  
Bid WRA-4181

COMMITTEE: Water Policy & Oversight

INFORMATION  
 VOTE

  
Michele S. Gillen  
Director of Administration  
  
Michael J. Hornbrook  
Chief Operating Officer

Steve Estes-Smargiassi, Dir. of Planning & Sustainability  
Carolyn Francisco Murphy, Director of Procurement  
Preparer/Title

**RECOMMENDATION:**

To approve the award of Purchase Order Contract WRA-4181 for flow testing services for MWRA's revenue water meters, to the lowest responsive bidder, Complete Control Services, Inc., and authorize the Executive Director, on behalf of the Authority, to execute said purchase order contract in an amount not to exceed \$274,935 for the time period June 1, 2016 through May 31, 2019.

**DISCUSSION:**

Because the amount of water used by each community is the basis for the allocation of the water rate revenue requirement to each community, delivery of water to the cities and towns in MWRA's service area must be measured with a great degree of accuracy. Most of these meters are Venturi-style meters and are installed in pipes ranging in size from 8 inches to 48 inches in diameter. As an integral part of MWRA's quality control processes, staff regularly use an outside contractor to independently verify the accuracy of some of MWRA's 190 revenue meters.

MWRA has been using an outside contractor to verify meter accuracy for many years. Typically, MWRA procures these services with three year on-call style contracts. Meters are evaluated on an as-needed basis, and MWRA pays only for services used.

The testing performed under this contract, which is in accordance with accepted American Water Works Association standards, will help to verify that all of MWRA's water meters are functioning properly and calibrated accurately, thus resulting in reliable calculations of rate charges. MWRA typically tests about 85 to 90 meters per year. The flow test includes inserting a pitot rod into the water main to measure the flow being recorded on the revenue meter. A 20-hour comparison is made so that the meter is checked for accuracy at different rates of flow.

## Procurement Process

Bid WRA-4181 was advertised in the following publications: Boston Herald, Goods and Services Bulletin, El Mundo, and Banner Publications. In addition, bids were made available for public downloading on MWRA's e-procurement system (Event 2356), and three potential bidders were solicited through the e-Portal.

On March 30, 2016, Event 2356 closed, with the following results:

Vendor	Bid Price
Complete Control Services, Inc.	\$274,935

Staff expected limited participation for this bid based on two factors: first, these services are specialized and there are not many companies that perform this work. Second is economics: MWRA conducts these flow tests periodically throughout the year and without an established local presence, companies have to factor travel and associated other direct costs into their prices, which hinders competitive pricing.

Under the last contract with ADS Environmental Services that expired on January 31, 2016, the contract price for three years was \$246,877.36. ADS's previous unit bid price for each 20-hour meter test was \$815.37; the current unit bid price is \$928.00, which represents an approximate 12% increase. However, this contract price will be held for the entire three-year term of the contract. Staff contacted ADS Environmental Services and they stated that because they were focusing their business on temporary wastewater metering/testing and not water meter testing, they would not be bidding on this year's renewal contract. EST Associates, Inc. was also contacted, but they declined to bid due to a lack of experience with the type of flowmeters as outlined in the bid specifications.

CCS is an instrument service company, headquartered in New Jersey, which works primarily in the water/wastewater industry. The two employees that would be involved in this contract each have 15 to 20 years experience in pitometer meter testing. One had originally worked with Pitometer Associates and the other with ADS. CCS has not previously worked with MWRA; however the employee that worked for ADS did meter testing for the MWRA while employed with ADS.

Staff have reviewed Complete Control Services, Inc.'s bid and have determined that it meets all requirements of the specifications. Despite the cost increase, staff are of the opinion that the bid price is reasonable. Therefore, staff recommend the award of this contract to Complete Control Services, Inc. as the lowest responsive bidder.

### **BUDGET/FISCAL IMPACT:**

There are sufficient funds available for the first portion of this purchase order contract in the FY16 Current Expense Budget. Appropriate funding will be included in subsequent Proposed CEB requests for the remaining term of the contract.

**MBE/WBE PARTICIPATION:**

There are no Minority- or Women-owned businesses available to provide revenue water meters..



## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Fredrick A. Laskey, Executive Director  
**DATE:** May 11, 2016  
**SUBJECT:** Beacon Street Line Water Pipeline Repair  
R. Zoppo Corp.  
Contract 7458



COMMITTEE: Water Policy & Oversight

\_\_\_ INFORMATION

X VOTE



Michele S. Gillen

Director of Administration

John P. Vetere, Deputy Chief Operating Officer  
A. Navanandan, P.E., Chief Engineer  
Patrick E. Smith, P.E., Program Manager  
Preparer/Title



Michael J. Hornbrook

Chief Operating Officer

### RECOMMENDATION:

To approve the award of Contract 7458, Beacon Street Line Water Pipeline Repair, to the lowest responsible and eligible bidder, R. Zoppo Corp., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$1,566,178, with a contract term of 210 calendar days from the Notice to Proceed.

### DISCUSSION:

MWRA's Beacon Street Line water main is a 48-inch diameter cement mortar lined, cast-iron pipe constructed in the 1870s, located in Brookline. It is part of MWRA's Boston Low Service System and a significant portion of it is located underneath the MBTA's Beacon Street Green Line trolley tracks. The Beacon Street Line supplies Boston Meter 44 and provides important water supply redundancy to Boston Meter 60, which services the Longwood Medical area. In 2000, the Beacon Street Line water main was cleaned and mortar lined with cement. In June 2006, a sink hole was found along the trolley tracks near Borland Street which was an indication of a leak. Upon excavation, a longitudinal crack was identified in the 48-inch water main that required



replacement of an eight-foot section with ductile-iron pipe and couplings. The repair caused significant disruption requiring temporary removal of trolley tracks and the use of buses as alternate transportation. In January 2013, a second leak was discovered in the vicinity of the 2006 leak upon which the 48-inch Beacon Street Line water main was taken out of service.

Access into this portion of the Beacon Street Line water main is extremely limited due to the MBTA tracks over the water main from St. Paul Street to St. Mary's Street. Available access points at St. Paul Street and St. Mary's Street are located approximately 3,000 feet apart, with the leak location approximately 1,400 feet from St. Paul Street.

In 2013, alternative methods were evaluated for slip-lining the entire 3,000-foot reach, as well as localized repair alternatives. MWRA requested an alternative that would not disrupt the MBTA's tracks. The engineering report concluded that conventional end-to-end slip-lining alternatives utilizing steel, cured-in-place-pipe, high-density polyethylene, or PVC could not be performed without intermediate access within the 3,000-foot reach, which would disrupt the tracks. Other issues preventing a continuous slipline included the inability to navigate the compound rolling alignment, and the need for intermediate access for grouting locations. Therefore, a localized repair from within the pipe was recommended using a carbon-fiber-reinforced polymer (CFRP) product approved for drinking water systems.

On September 17, 2014, the Board approved the award of Contract 7474 to Green International Affiliates, Inc. to provide design, construction administration and resident inspection services (through a one-year warranty period) for the internal pipe repair of the 48-inch diameter Beacon Street Line water main.

Contract 7458 (See Attachment A – Locus Map) includes 72 linear feet of full-pipe internal circumference carbon-fiber reinforced-polymer (CFRP) structural repair; post-repair precast chambers and valves at both access pits; and associated work to reactivate the Beacon Street Line to the Boston Low Service System. The CFRP internal pipe repair will not require the shutdown of the MBTA Green Line tracks compared to other methods. CFRP repair of water pipelines is a specialized field and requires a team with past experience and success in the manufacture and construction of this product. CFRP repair involves contractor personnel within the pipe (shown on the right) applying multiple layers of a carbon fiber mesh to the interior surface of the existing pipe in conjunction with a resin mixture to form a high strength structural lining that adheres to the existing pipe wall. The existing cement lining and joint seals will be removed and surface cleaned and prepared for the CFRP. The 3,000 feet between access pits will require a detailed health and safety plan to ensure a successful project. The CFRP liner is approved by the National Sanitation Foundation and the American National Standards Institute under Standard 61 for use in potable drinking water pipes.



Many locations throughout the country have utilized this specialized internal repair method for similar pipe sizes (48-inch to 78-inch) and pressures (60 psi to 150 psi). Miami-Dade Water and Sewer has hundreds of CFRP installations; Washington Suburban Sanitary Commission performs CFRP repairs at approximately 70 locations per year; and within New England, CFRP repairs have been conducted by Providence RI Water (30 locations to date) and Springfield Water and Sewer (2 locations in 2011). With this recommended alternative, the Green Line will not be taken out of service, and major disruptions to street traffic will be avoided.

MWRA's consultant, on this project is Green International Affiliates. The project team includes CFRP specialty design consultants Simpson, Gumpertz & Heger, Inc. and CDM Smith, Inc.

### **Procurement Process**

Contract 7458 was advertised and bid in accordance with Massachusetts General Laws, Chapter 30. Bids were received and opened on May 4, 2016 with the following results:

<u>Contractor</u>	<u>Bid Amount</u>
<i>Engineer's Estimate</i>	<i>\$1,475,000</i>
R. Zoppo Corp.	\$1,566,178
P. Gioioso & Sons, Inc.	\$1,688,500
P. Caliacco Corp.	\$1,691,815
RJV Construction, Corp.	\$1,718,000

R. Zoppo Corp.'s bid is the lowest at \$1,566,178, which is \$91,178, (6.2%) above the Engineer's Estimate and \$122,322 (7.2%) below the second lowest bid, and \$125,637 (7.4%) below the third low bidder. The range of bids are within 9.7% of the low bid.

MWRA staff and Green have reviewed R. Zoppo's bid in detail and discussed the major bid items with the company. Based on the bid review and subsequent discussions with R. Zoppo, staff are satisfied that R. Zoppo understands the full scope of work and can perform the work for the bid price, which includes the payment of prevailing wages. R. Zoppo understands and is committed to meet the contract qualification requirements for CFRP installer and manufacturer and will submit the information within the specified 15 days of the notice to proceed. R. Zoppo is a full service general contracting company that has completed many projects in New England. It has been in business for over 90 years.

References were checked and found to be favorable. R. Zoppo has successfully completed many past MWRA projects since 1985, including rehabilitation projects of similar pipe size to the Beacon Street Line Water Pipeline Repair project including the Weston Aqueduct Supply Main 4/South Charles River Valley Sewer Rehabilitation project with excellent evaluation scores on its most recent projects.

Staff are of the opinion that R. Zoppo possesses the skill, ability, and integrity necessary to perform the work under this contract and is qualified to do so. Therefore, staff recommend the award of this contract to R. Zoppo as the lowest responsible and eligible bidder.

**BUDGET/FISCAL IMPACT:**

The approved FY17 CIP includes a budget of \$1,452,000 for Contract 7458. The contract award amount is \$1,566,178 or \$114,178 over budget. This amount will be covered within the five-year CIP spending cap.

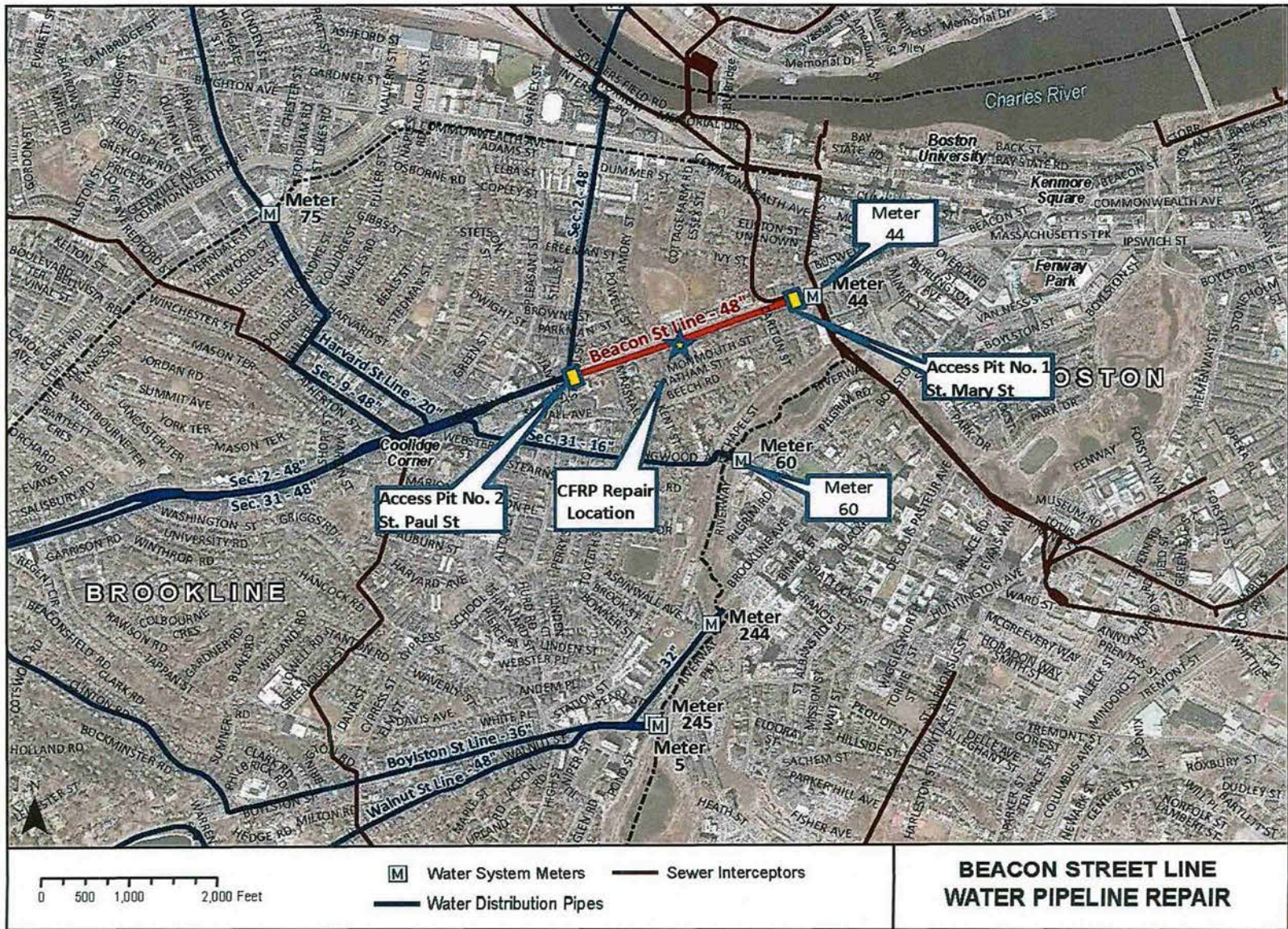
**MBE/WBE PARTICIPATION:**

There were no MBE or WBE participation requirements established for this contract due to the specialized nature of the work and the limited opportunities for subcontracting.

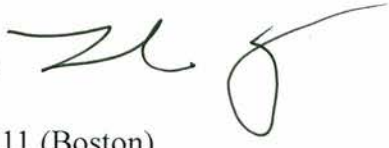
**ATTACHMENT:**

Attachment A – Locus Map of Beacon Street Line Water Pipeline Repair

**Attachment A – Locus Map of Beacon Street Line Water Pipeline Repair**



## STAFF SUMMARY

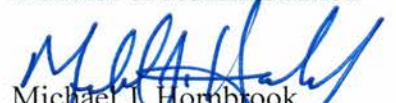
**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** May 11, 2016  
**SUBJECT:** Southern Extra High Pipeline - Section 111 (Boston)  
P. Gioioso and Sons, Inc.  
Contract 6454

COMMITTEE: Water Policy & Oversight

           INFORMATION  
  X   VOTE

  
Michele S. Gillen  
Director of Administration

Paul T. Rullo P.E., Program Manager  
A. Navanandan P.E., Chief Engineer  
Preparer/Title

  
Michael J. Hornbrook  
Chief Operating Officer

### RECOMMENDATION:

To approve the award of Contract 6454, Southern Extra High Pipeline Section 111 (Boston) to the lowest responsible and eligible bidder, P. Gioioso and Sons, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the amount of \$11,770,000, for a contract term of 780 days from the Notice to Proceed.

### DISCUSSION:

MWRA's Southern Extra High service area includes Canton, Dedham, Norwood, Stoughton, Westwood, portions of Brookline and Milton, and the Roslindale and West Roxbury sections of Boston. The five communities in the southern portion of the service area (Canton, Norwood, Dedham, Westwood, and Stoughton) are served by a single 36-inch diameter transmission main (Section 77), which is five miles long. Canton and Stoughton are served by a branch (Section 88) off of Section 77. Although several of these communities are partially supplied by MWRA, the loss of this single transmission main (Section 77) would result in a rapid loss of service in Norwood and Canton, and potential water restrictions for Stoughton and Dedham/Westwood. Correction of this deficiency has been assigned a Priority One in MWRA's Water Master Plan due to the potential critical threat to public health that could result from a failure in this single transmission main.

On November 14, 2012, staff presented to the Board an evaluation of alternatives and a recommendation to proceed with a 5.4 mile redundant pipeline alternative from the Bellevue

Water Storage Tanks in West Roxbury through Dedham to Westwood where the proposed pipeline would interconnect with existing pipeline Section 77 near the Route 95 East Street Rotary. The proposed route is shown on Figure 1. In June 2013, MWRA filed an Environment Notification Form for the project and in July MWRA received a Certificate of the Secretary of Energy and Environmental Affairs stating that the project does not require the preparation of an Environmental Impact Report. Upon completion of the Massachusetts Environmental Policy Act (MEPA) process, staff began to procure a consultant for design, construction administration, and resident inspection services. On January 5, 2014 the Board approved the award of the consultant contract to Fay, Spofford & Thorndike, LLC (now Stantec).

### **Contract Components and Schedule**

The entire project is separated into three construction contracts as follows:

1. Contract 6454, Section 111 (Boston), which is the subject of this Staff Summary, consists of 11,000 linear feet of 36-inch water main all which is primarily located within DCR's Stony Brook Reservation in Boston.
2. Contract 7504, Section 111 (Dedham north) consists of 10,000 linear feet of 36-inch water main of which 3,000 linear feet is within DCR's Stony Brook Reservation in Dedham with the remaining 7,000 linear feet within Dedham local roads. In addition to permitting with DCR, this project requires permitting for two MADOT bridges along the route. Pending permits from MADOT, this project is scheduled for a construction Notice to Proceed in September 2016.
3. Contract 7505, Section 111 (Dedham south) consists of 6,800 linear feet of 36-inch water main in Dedham and in Westwood at the Route 95 East Street Rotary. Permits are required from the MBTA to install piping beneath the railroad tracks at the Dedham Corporate Center MBTA Station and with MADOT for trenchless technology construction work to install piping beneath Route 95. Pending permits from MADOT and the MBTA, this project is scheduled for a construction Notice to Proceed in December 2016.

The Dedham/Westwood Water District (DWWD) has a hydraulic deficiency in its water system at Route 95 because the highway has created a division between portions of the system. To correct this deficiency, save costs, and minimize disruption, the DWWD has asked MWRA to include installation of a 12-inch local water main as part of the crossing of Route 95 (Contract 7505). Planning to accomplish this is ongoing. A Staff Summary to authorize a Memorandum of Agreement with DWWD will be presented to the Board at a future date.

Installation and activation of the pipeline is scheduled for late 2018 with construction contract completion of final surface restoration to occur by July 2019.

## Procurement Process

Contract 6454 was advertised and bid utilizing MWRA's e-procurement system (Event 2366) in accordance with Massachusetts General Laws, Chapter 30. Bids were received and opened on May 5, 2016 from six contractors as follows:

<u>Bidders</u>	<u>Bid Amount</u>
<i>Engineers Estimate</i>	\$13,500,000
Baltazar Contractors Inc.	\$10,880,000*
P. Gioioso and Sons, Inc.	\$11,770,000
RJV Construction Corp.	\$11,915,000
Fed. Corp.	\$12,837,560
Albanese Brothers Inc.	\$14,374,735
Revoli Construction Co., Inc.	\$14,608,000

*\* The contractor, Baltazar Contractors Inc., has requested to withdraw their bid due to a bid error.*

P. Gioioso and Sons, Inc. submitted a bid price that is \$1,730,000 (12.8%) lower than the Engineer's Estimate, and 1.2% less than the next lowest bidder which demonstrates reasonableness of price.

P. Gioioso & Sons, Inc. has completed several large, complex projects for MWRA, including the University Avenue 36-inch Water Main Section 108 (MWRA Contract 6445, \$6.2 million), Spot Pond Supply Mains project involving 48-inch water main rehabilitation and replacement (MWRA Contract 6381, \$20 million) and the Upper Neponset Valley Relief Sewer VFW Interceptor project (MWRA Contract 6191, \$36 million). P. Gioioso & Sons, Inc. performed well on these projects. P. Gioioso & Sons, Inc. also has completed numerous large water, sewer, CSO, and drain projects for BWSC, MADOT, City of Cambridge, Town of Brookline and others. All of which are similar in complexity to the Southern Extra High Pipeline Section 111 (Boston) project. All references were favorable.

MWRA, and Stantec, have concluded that P. Gioioso and Sons, Inc. possesses the skill, ability, and integrity necessary to perform the work under this contract, and is qualified to do so. Staff have determined that the bid price is reasonable, complete and includes the payment of prevailing wage rates, as required. Therefore, staff recommend that Contract 6454 be awarded to P. Gioioso and Sons, Inc. as the lowest responsible and eligible bidder.

### **BUDGET/FISCAL IMPACT:**

The FY16 CIP includes a budget of \$11,792,649 for Contract 6454. The contract award amount is \$11,770,000.



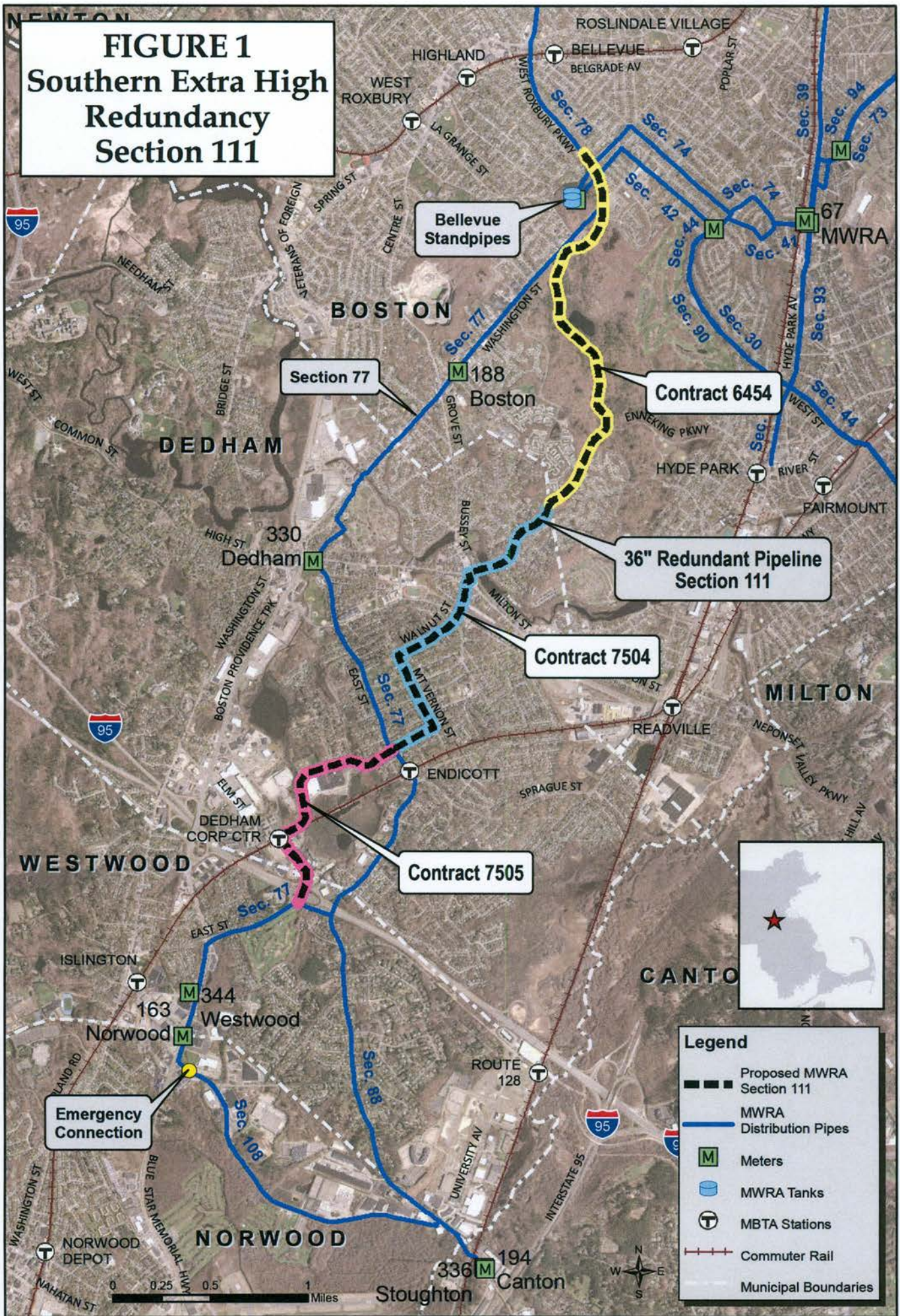
**MBE/WBE PARTICIPATION:**

The D/MBE and WBE participation requirements for this project were established at 3.4% and 3.8%, respectively. The Affirmative Action and Compliance Unit has reviewed the bids and has determined that P. Gioioso and Sons, Inc.'s bid is responsive to these requirements.

**ATTACHMENT:**

Figure 1: Section 111- Southern Extra High Redundancy

**FIGURE 1**  
**Southern Extra High**  
**Redundancy**  
**Section 111**



**Legend**

- Proposed MWRA Section 111
- MWRA Distribution Pipes
- Meters
- MWRA Tanks
- ⊙ MBTA Stations
- Commuter Rail
- Municipal Boundaries



**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** May 11, 2016  
**SUBJECT:** Dam Safety Compliance and Consulting Contract  
GZA GeoEnvironmental, Inc.  
Contract OP-228, Amendment 2



COMMITTEE: Water Policy & Oversight

         INFORMATION

  X   VOTE



Michele S. Gillen

Director of Administration

David Coppes, P.E., Director of Waterworks  
John Gregoire, Program Manager, Reservoir Operations  
Preparer/Title



Michael J. Hornbrook

Chief Operating Officer

**RECOMMENDATION:**

To authorize the Executive Director, on behalf of the Authority, to approve Amendment 2 to Contract OP-228, Dam Safety Compliance and Consulting Services, with GZA GeoEnvironmental, Inc., for an amount not to exceed \$32,117, increasing the contract amount from \$206,500.00 to \$238,617.00, with no increase in the contract term which is scheduled to end August 8, 2016.

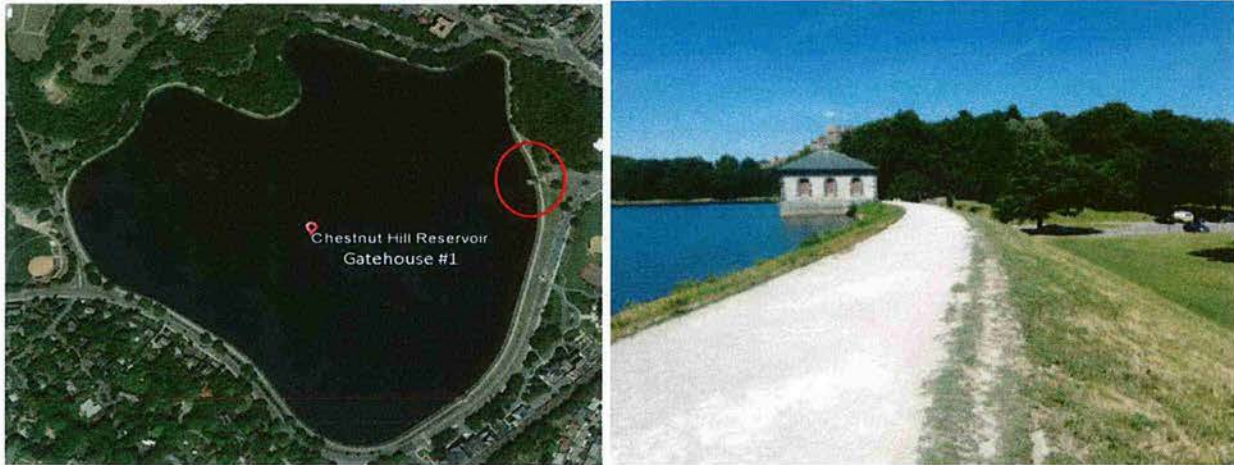
**BACKGROUND:**

On January 15, 2014, the Board approved the award of Contract OP-228 to GZA GeoEnvironmental, Inc., in an amount not to exceed \$166,500, to provide continued dam safety compliance and consulting services, including performance of recurring biennial regulatory inspections at all High Hazard Class dams, design of seepage structures and crack repairs, and related dam safety investigations and services.

One of these dam safety investigations was an Appurtenant Structure Inspection of the abandoned Chestnut Hill Gatehouse 1 (shown in the following photos), constructed in 1870. This structure is a significant penetration in the earthen Chestnut Hill Reservoir Dam, a High Hazard Class<sup>1</sup> dam. Chestnut Hill Reservoir remains a part of MWRA's emergency backup system and was last utilized during the May 2010 water main break near Shaft 5 in Weston.

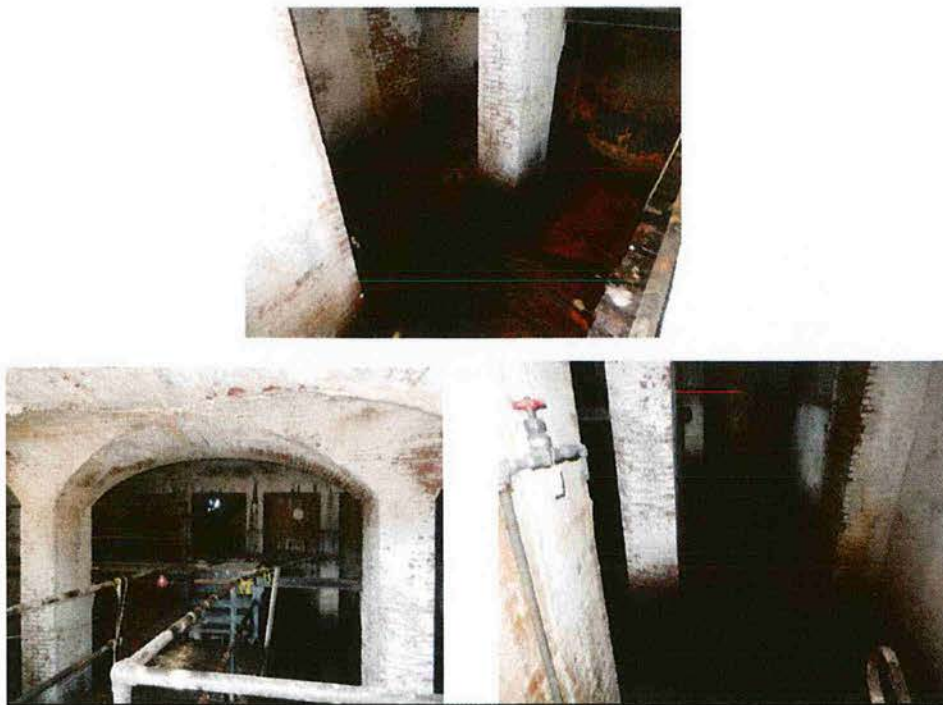
<sup>1</sup> According to 302 CMR 10.06, *High Hazard Class* refers to "Dams located where failure will likely cause loss of life and serious damage to home(s), industrial or commercial facilities, important public utilities, main highway(s) or railroad(s)".

The results of the initial investigation made clear that conditions of Gatehouse 1 require attention for stabilization to preserve overall dam safety. On January 21, 2016, Amendment 1 to Contract OP-228 was approved under the Executive Director's delegated authority for more focused field inspection and design for internal stabilization, as well as an extension of the contract term by six months.

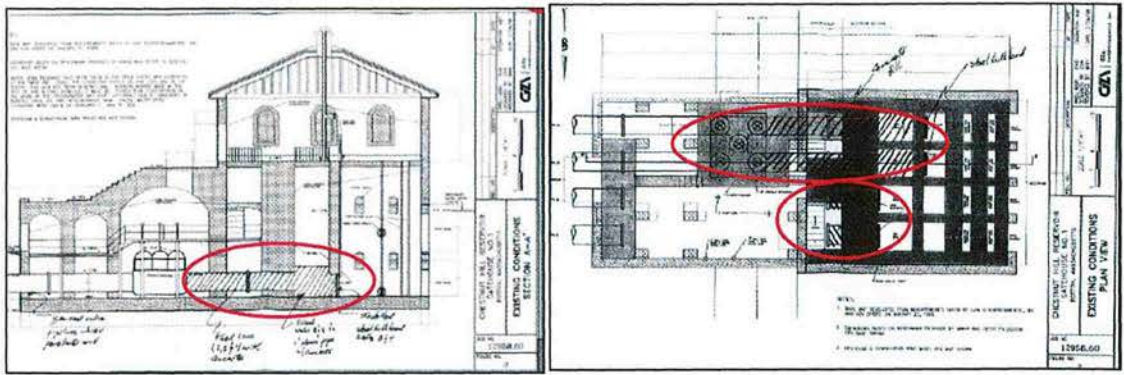


Chestnut Hill Reservoir and Gatehouse 1

The internal conditions of Gatehouse 1 (photos below) show approximately 5 feet of standing water due to seepage into the facility from the reservoir and surrounding earthen dam. Continued deterioration could potentially lead to a worst-case scenario of failure of the structure and loss of the reservoir through this facility.



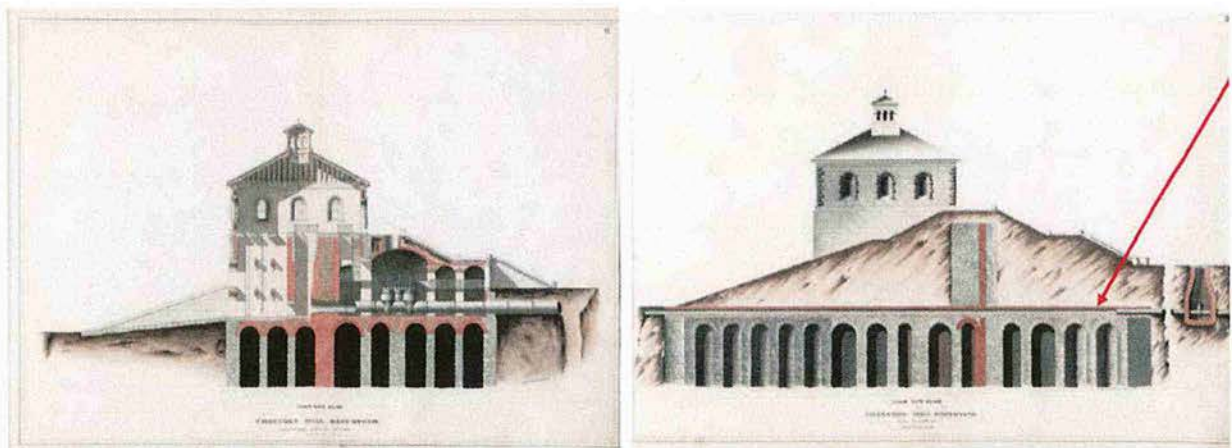
As shown in the drawings below, some limited infilling was performed by MWRA in 2002 to prevent the internal piping from transmitting water through the facility.



### DISCUSSION:

Preliminary design for the internal stabilization of this facility recommended pumping the water out and sealing the upstream wet well openings, followed by infill with flowable concrete in the wet wells and the lower gatehouse floor (above photos). However, since design began, previously unknown original records of the facility were found which will require follow up action to validate the design approach.

These records consist of a book of hand-colored drawings (examples below) of the gatehouse through the foundation of the dam and building that revealed previously unknown chambers below the floor slab of the gatehouse, and two pipe penetrations through the dam. These drawings call into question other drawings which did not show these features, warranting some new geotechnical exploration. Additionally, if these subterranean conditions do exist, it is not clear what condition they are in (i.e., were they back-filled with soil, rubble, or are they full of water?) or whether they will be capable of supporting the flowable concrete fill planned for the facility.



In order to properly design for infill of the upper structure for stabilization of the facility, this subterranean foundation must be understood and included in the overall loading design.

**This Amendment:**

Additional geotechnical exploration and structural analysis is recommended to properly characterize these subterranean chambers and arched piers. Staff worked with the consultant to develop an exploration plan to aid in the structural analysis and ultimate design of infill. This included identifying exploratory methods with a good likelihood of success and then applying costs for equipment and support needed, as well as an agreed-upon level of consultant effort for the field and reporting with associated costs.

The proposed plan includes dewatering the standing water in the lower gatehouse, and performing 15-20 cores through the lower gatehouse floor slab above key features in the 1870 drawings to assess pier construction and presence of chamber fill. Low pressure hydrostatic testing will be performed via the core holes to assess if any connection exists between these subterranean chambers; soundings will be performed to assess bottom conditions; and camera insertion will be performed, where possible, for visual confirmation of the chambers and piers.

As a precaution, prior to penetration coring for the tests listed above, very small diameter holes of ¼ to ½-inch will be drilled near the proposed core locations to assess if any artesian pressures exist. Plugging materials will be on hand to seal these test holes as needed. If excessive hydrostatic pressures are encountered, coring will not be performed, the work will be stopped, and a report issued to MWRA outlining the observed conditions and a recommendation for proceeding with the work.

At the completion of this field exploratory component, a report will be provided with findings and recommendations for filling, monitoring and/or additional investigations as needed. Recommendations will include fill materials, sequencing and procedures, as well as how the lower structure has bearing on the filling of the upper structure. Funds remain under Amendment 1 to complete the stabilization infill design within the remaining contract time if no countervailing conditions are found under this Amendment. However, if artesian conditions, soft bottom conditions, or structural degradation of the arches or foundation elements are encountered, further evaluation will be required. In that event, staff will reevaluate the approach for completing this project.

**CONTRACT SUMMARY:**

	<b>Amount</b>	<b>Time</b>	<b>Dated</b>
Original Contract:	\$166,500.00	730 Days	03/05/14
Amendment 1*:	\$ 40,000.00	180 Days	01/21/16
Proposed Amendment 2:	<u>\$ 32,117.00</u>	<u>0 Days</u>	Pending
Adjusted Contract:	\$238,617.00	910 Days	

\*Approved under delegated authority


**BUDGET/FISCAL IMPACT:**

Funds for Amendment 2 will be absorbed in the FY16 CEB for Contract OP-228.

**MBE/WBE PARTICIPATION:**

GZA GeoEnvironmental, Inc. is not a certified Minority- or Women-owned business.

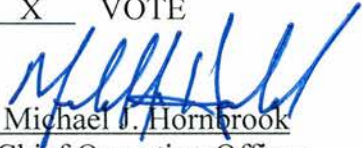
**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** May 11, 2016  
**SUBJECT:** Section 4 Webster Avenue Pipe and Utility Bridge Replacement  
NEL Corporation  
Contract 7335, Change Order 5

---

COMMITTEE: Water Policy & Oversight

John P. Vetere, Deputy Chief Operating Officer  
Corinne Barrett, Director, Construction  
A. Navanandan, P.E., Chief Engineer  
Preparer/Title

INFORMATION  
 VOTE  
  
Michael J. Hornbrook  
Chief Operating Officer

---

**RECOMMENDATION:**

To Authorize the Executive Director, on behalf of the Authority, to approve Change Order 5 to Contract 7335, Section 4 Webster Avenue Pipe and Utility Bridge Replacement, with NEL Corporation, in an amount not to exceed \$2,150,000, increasing the contract cost from \$1,956,727.12 to \$4,106,727.12, and extending the contract term by 245 calendar days from April 30, 2016 to December 31, 2016.

**BACKGROUND:**

As the Board was informed at the April 13, 2016 meeting, the newly constructed Section 4 Webster Avenue 48-inch water main pipeline failed to pass its required internal pressure test. After pressure testing, the pipe line showed evidence of movement and deflected joints with joint gasket displacement and loose locking mechanisms. Staff notified both the designer (Dewberry Engineers, Inc.) and the contractor (NEL) of MWRA's potential cost recovery of deficient work. In a letter dated October 1, 2015 Dewberry took exception to MWRA's findings and denied liability for damages.

**DISCUSSION:**

Staff, working with Dewberry, initially identified a corrective plan to reuse the newly installed pipe and fittings to the extent feasible and utilize new materials only if deemed necessary based on field inspection. Since the pipeline showed evidence of movement and failed joint gasket displacements, it is necessary to remove the newly installed the pipe, pulling the joints apart and inspecting for damage. The original scope of the corrective plan included traffic controls, night



work, excavation and inspection of existing pipe, replacement of some of the pipe assumed to be damaged, pressure testing, and additional paving.

The initial corrective plan also included installation of new tie rods between bends, an additional 75 feet of 48-inch pipe to extend the restrained pipe span on each end of the pipe system (150 feet of new pipe in total – 30% increased length) and 60 feet of additional 20-inch pipe to dissipate thrust forces at the final connection. However, the reuse of existing materials would require removal of the pipe to an offsite location followed by field inspection by an independent contractor to determine the suitability of the pipe and fittings for reuse. The corrective design required tight tolerances on pipe installation using the recently installed HP-LOK joints (specified 1/4 degree maximum deflection which is more stringent than the pipe manufacturer allows) that require additional Quality Assurance /Quality Control (QA/QC) of pipe installation including the use of a surveyor for each pipe segment installation. The pipe and fitting condition review, the tight tolerance on deflection during re-installation, and the double handling of the pipe results in a longer construction period, lower pipe installation production rate, and higher installation costs. After the April Board meeting, staff entered into discussions with the contractor regarding pricing for this corrective plan. A negotiated price for this proposed work was over \$2.33 million dollars.

Staff then considered if full pipe replacement of the newly installed line with an alternative mechanical restraint joint design and new pipe would improve construction timeframes and provide a lower cost. Alternative mechanical restraint joint designs have higher allowable installation deflections (up to 2 degrees) that improve pipe installation production rates and reduce on site QA/QC inspection requirements. This alternative also included installation of new tie rods between bends, an additional 75 feet of 48-inch pipe to extend the restrained pipe span on each end of the pipe system (150 feet of new pipe in total – 30% increased length) and 60 feet of additional 20-inch pipe to dissipate thrust forces at the final connection. This option does not require double handling of the removed potentially damaged pipe and fittings. Although this design provides all new piping, the negotiated contractor pricing for this alternative has a lower cost of \$2.15 million. Staff believes this design provides the highest degree of confidence of success for the piping reconstruction.

A third alternative was considered to retain the HP-LOK mechanical restraint joint piping on the bridge only and replace all other pipe. This option was considered due to the difficulties of the pipe work on the bridge. Although the negotiated cost for this option was \$1.8 million, the multiple pressure test failures and pipe movement has resulted in a lack of confidence by staff in the condition and performance of the installed HP-LOK fittings. Staff do not recommend this alternative.

Staff recommends implementing the second corrective repair method, the full pipe replacement with an alternative mechanical restraint joint design at a cost of \$ 2.15 million.

Once the pipe line is back in service, MWRA intends to initiate cost recovery from the responsible parties. As previously stated, the parties have been put on notice and MWRA's rights for cost recovery remain protected. This approach of performing the corrective work through a change order before commencing cost recovery was successfully used on the John J. Carroll UV

Disinfection project when the header pipe separated from the wall. Both the contractor and the designer were notified of potential responsibility, and the rework progressed by change order. After the construction was completed, the Authority negotiated a cost recovery agreement with the designer. The only difference between the projects is that the Carroll UV designer took responsibility for the design issue and Dewberry has taken exception that there is a design error.

Cost Recovery

Based on staff’s review of documents, correspondence, and several meetings with Dewberry (the designer of record), CDM Smith (MWRA’s independent reviewer), SGH (Dewberry’s independent reviewer) and the contractor (NEL), staff will seek cost recovery against either or both the designer and construction contractor for the cost of the rework associated with the re-design and corrective plan. MWRA has not paid Dewberry for any cost associated with the corrective action designs or evaluations. The pipe material will be inspected at the time of the corrective work to determine if there were any defective materials, components or workmanship. In addition, the contractor and the Dewberry resident engineer allowed changes to the pipe bracing system while increasing the internal pressure on the pipe system during testing. These actions during the pressure test may have caused or contributed to the pipe failure.

Once the failed pipeline is excavated, examined and corrective work is complete and successfully back in service, staff will begin negotiations with Dewberry and NEL and any other potential parties. If these negotiations are unsuccessful, MWRA will file suit to recover all costs associated with the substantial corrective (re-work) needed.

Staff recommends issuing a change order to the existing contract with NEL (MWRA Contract No.7335) to perform the replacement of the new piping in the amount of \$2,150,000. The Section 4 Webster Avenue pipeline provides important redundancy in providing water to Somerville, Medford, Malden Everett, Chelsea’s, Revere, and Boston. Without this line available, there is an increased risk to the Northern Low Service system should any other issue (i.e., water main break or leak) arise requiring the redundant pipeline to be taken out of service. The 20-inch Somerville line also is an integral part of the Somerville distribution system. Both mains should be returned to service in the earliest. The length of time to procure new designers and contractors will extend the risk of loss of service if any of MWRA’s or Somerville’s existing remaining operating lines experience a problem and need to be isolated. Staff are also concerned that no other design consultant would bid on the project (CDM, SGH and Dewberry would not be allowed to propose due their existing involvement); and there may be a lack of potential contractors bidding due to the issues experienced with the initial design and construction and potential cost recovery activities.

CONTRACT SUMMARY:

	Amount	Time	Dated
Original Contract:	\$1,759,000	214 days	4/15/15
Change Orders:			
Change Order 1*	\$18,914	0 days	8/3/15
Change Order 2*	\$50,000	0 days	8/21/15

Change Order 3*	\$0	27 days	12/17/15
Change Order 4*	\$128,813.12	121 days	3/24/16
Change Order 5	<u>\$2,150,000</u>	<u>245 days</u>	Pending
Total of Change Orders:	2,347,727.12	393 days	

Adjusted Contract: \$4,106,727.12 607 days

\*Approved under delegated authority

If Change Order 5 is approved, the cumulative value of all change orders to this contract will be \$2,347,727.12 or 133% of the original contract amount. Work on this contract is approximately 90% complete based upon dollars paid on original contract.

**BUDGET/FISCAL IMPACT:**

The FY16 CIP contains a budget of \$1,759,000 for Contract 7335. Including this change order for \$2,150,000 the adjusted sub-phase total is \$4,106,727.12 or \$2,347,727.12 over budget.

Staff will initiate negotiations with Dewberry and NEL Corporation to recover costs associated with the deficient design and/or construction of the original project.

**MBE/WBE PARTICIPATION:**

There were no MBE/WBE participation requirements for this project. NEL Corporation did subcontract to Dow Company which then subcontracted South Shore Pipeline. These companies are both WBEs and approximately \$600,000 (33% of contract value) has been paid to date to these WBEs.

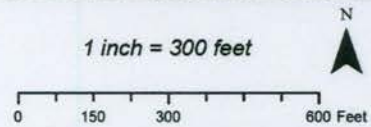
**ATTACHMENTS:**

- Attachment 1 - Webster Avenue Pipe and Utility Bridge Replacement Project Location
- Attachment 2 - Re-Design Drawing C-1



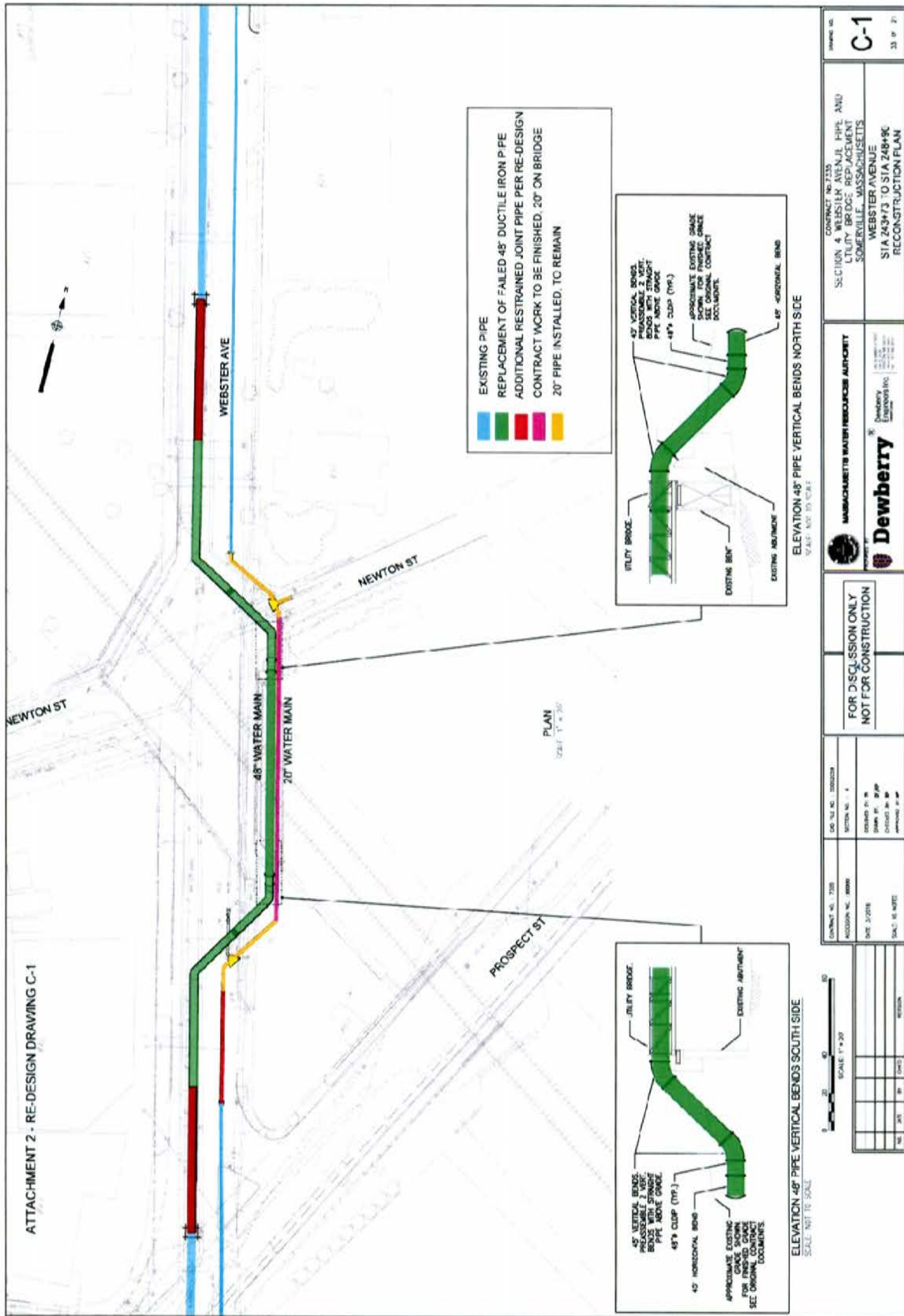
Attachment 1  
 Webster Avenue Pipe and Utility  
 Bridge Replacement Location

1 inch = 300 feet



Date: 3/31/2015 MWRAGIS17811

# Attachment 2 - Re-Design Drawing C-1



CONTRACT NO. 1158 SECTION NO. 1158-1 SECTION 4 RECONSTRUCTION OF UTILITY BRIDGE, RE-ACCEMENT SOMERVILLE, MASSACHUSETTS	CONTRACT NO. 1158 SECTION NO. 1158-1 SECTION 4 RECONSTRUCTION OF UTILITY BRIDGE, RE-ACCEMENT SOMERVILLE, MASSACHUSETTS
DATE: 3/20/18 SCALE: AS SHOWN	DATE: 3/20/18 SCALE: AS SHOWN
DESIGNED BY: [Redacted] CHECKED BY: [Redacted] APPROVED BY: [Redacted]	DESIGNED BY: [Redacted] CHECKED BY: [Redacted] APPROVED BY: [Redacted]
<b>Dewberry</b> INCORPORATED ENGINEERS, ARCHITECTS, PLANNERS AND ENVIRONMENTAL SCIENTISTS	
MASSACHUSETTS WATER RESOURCE AUTHORITY	
SECTION 4 UTILITY BRIDGE, RE-ACCEMENT SOMERVILLE, MASSACHUSETTS SIA 243+73 TO SIA 248+90 RECONSTRUCTION PLAN	
FRAME NO. <b>C-1</b> 33 OF 37	



# MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard  
100 First Avenue, Building 39  
Boston, MA 02129

Frederick A. Laskey  
Executive Director

Telephone: (617) 242-6000  
Fax: (617) 788-4899  
TTY: (617) 788-4971

## **PERSONNEL & COMPENSATION COMMITTEE MEETING**

*Chair:* J. Wolowicz  
*Vice-Chair:* K. Cotter  
*Committee Members:*  
J. Carroll  
P. Flanagan  
J. Foti  
A. Pappastergion  
H. Vitale  
J. Walsh

to be held on

Wednesday, May 11, 2016

Location: 100 First Avenue, 2nd Floor  
Charlestown Navy Yard  
Boston, MA 02129

Time: Immediately following Water Comm.

### **AGENDA**

#### **A. Approvals**

1. PCR Amendments – May 2016
2. Appointment of Manager, Operations Administration
3. Appointment of Network Administrator III, MIS

#### **B. Annual Meeting of the Personnel & Compensation Committee Independent of Management**

1. Authority Accountability and Transparency Act Compliance

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the  
Personnel and Compensation Committee

April 13, 2016

A meeting of the Personnel and Compensation Committee was held on April 13, 2016 at the Authority headquarters in Charlestown. Chair Wolowicz presided. Present from the Board were Messrs. Blackmon, Carroll, Cotter, Flanagan, Foti, Pappastergion, Peña, Vitale and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Karen Gay-Valente, Mike Hornbrook, and Bonnie Hale. The meeting was called to order at 12:25 p.m.

**Approvals**

\*PCR Amendments – April 2016

The Committee recommended approval of amendments to the Position Control Register (ref. agenda item A.1).

Mr. Vitale wished to thank for the record two MWRA employees who have been a big help in advising BWSC: Matt Horan, Treasurer and Russ Murray, MIS Director.

\*Appointment of Manager, Process Control, DITP

The Committee recommended approval of the appointment of Ms. Lisa Wong (ref. agenda item A.2).

\*Appointment of Senior Program Manager, Engineering Services Dept., DITP

The Committee recommended approval of the appointment of Mr. Raymond W. Snyder, P.E. (ref. agenda item A.3).

\*Appointment of Assistant Finance Manager

The Committee recommended approval of the appointment of Mr. Christopher Lam (ref. agenda item A.4).

\*Appointment of Budget Manager

The Committee recommended approval of the appointment of Ms. Louise Miller (ref. agenda item A.5).

The meeting adjourned at 12:30 p.m.

\* Approved as recommended at April 13, 2016 Board of Directors meeting.

STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** May 11, 2016  
**SUBJECT:** May PCR Amendments



COMMITTEE: Personnel and Compensation

Karen Gay-Valente, Director of Human Resources  
Joan C. Carroll, Manager Compensation  
Preparer/Title

     INFORMATION

  X   VOTE

  
Michele S. Gillen  
Director, Administration

**RECOMMENDATION:**

To approve the amendments to the Position Control Register (PCR) included in the attached chart.

**DISCUSSION:**

The Position Control Register lists all positions of the Authority, filled and vacant. It is updated as changes occur and it is published at the end of each month. Any changes to positions during the year are proposed as amendments to the PCR. All amendments to the PCR must be approved by the Personnel Committee of the Board of Directors. All amendments resulting in an upgrade of a position by more than one grade level, and/or an amendment which creates a position increasing annual cost by \$10,000 or more, must be approved by the Board of Directors after review by the Personnel Committee.

**May PCR Amendments**

There are six PCR amendments, five related to changes within the Operations Division and one related to the Administration Division.

The first two amendments are proposed to address staffing needs within the Supervisory Control and Data Acquisition (SCADA) Program. This program is responsible for managing the electronic monitoring and control system for MWRA's water and wastewater facilities. A vacancy in a Program Manager position in the SCADA Maintenance Technician group has created an opportunity to improve the efficiency of the SCADA group and add staff to address increasing needs. The structure of this unit will be changed from being co-managed by two existing Program Manager positions to being managed by a single Program Manager and two new Project Manager positions, resulting in a net increase of one position in this unit. The new Project Managers will directly supervise the field technicians. In addition, they will respond to technical issues and give direction regarding complex issues in the field as they arise.

The third amendment is a change in title and increase in grade to a filled position in the Director's Office at the Deer Island Treatment Plant. This amendment is proposed to ensure appropriate classification of this position based on the addition of new job responsibilities.

The fourth amendment is a proposed change in title and increase in grade to a vacant position at the Southboro garage to ensure appropriate classification of this position based on the addition of



new job responsibilities and consistency with similarly situated positions in other MWRA garages.

The fifth amendment is a proposed change in title and increase in grade to a filled position in Operations Administration. This position is needed to directly support the Chief Operating Officer with planning and implementing administrative coordination activities and special projects.

The last amendment is proposed to create a new position in the MIS Department in the Library. Over the next year, the current Records Management application will be replaced with a new system making it necessary to add an additional staff resource to assist with this implementation and manage the new system.

The amendments are:

1. Title and location change to a vacant position, Senior Staff Engineer, Electrical in the Engineering Department to Project Manager, SCADA Technicians in the SCADA Maintenance Department.
2. Title and location change to a vacant position, Senior Staff Engineer, Electrical in the Capital Engineering Department to Project Manager, SCADA Technicians in the SCADA Maintenance Department.
3. Title and grade change to a filled position, Administrative Manager to Operations Liaison in the Directors Office at the Deer Island Treatment Plant.
4. Title and grade change to a vacant position, Motor Equipment Repair Foreman to Unit Supervisor, Motor Equipment Repair in the Southboro Equipment Maintenance Department.
5. Title and grade change to a filled position, Manager, Contract Administration to Senior Manager, Coordination & Control in the Operations Administration Department.
6. New position, Library Specialist for MIS Department.

Three amendments require approval by the Personnel and Compensation Committee. The last three amendments require Board approval after review by the Personnel and Compensation Committee.

**BUDGET/FISCAL IMPACT:**

The annualized budget impact of these PCR amendments is a cost of between \$50,575 and \$96,581 depending on the individuals selected for the vacant positions upon the completion of the hiring processes. Staff will ensure that any cost increase associated with these PCR amendments will not result in spending over the approved FY16 Wages and Salaries budget.

**ATTACHMENTS:**

New/Old Job Descriptions

**MASSACHUSETTS WATER RESOURCES AUTHORITY  
POSITION CONTROL REGISTER AMENDMENTS  
FISCAL YEAR 2016**

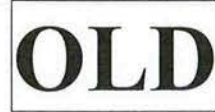
**PCR AMENDMENTS REQUIRING PERSONNEL & COMPENSATION COMMITTEE APPROVAL - May 11, 2016**

Number	Current PCR #	V/F	Type	Current Title	UN	GR	Amended Title	UN	GR	Current/Budget Salary	Estimated New Salary	Estimated Annual \$ Impact	Reason For Amendment		
P20	Operations Engineering 5525019	V	T,L	Sr Staff Engineer, Electrical	9	25	Project Manager, SCADA Technicians	9	25	N/A	N/A - N/A	\$0 - \$0	To align staffing resources with current needs		
P21	Operations Capital Engineering 2971021	V	T,L	Sr Staff Engineer, Electrical	9	25	Project Manager, SCADA Technicians	9	25	N/A	N/A - N/A	\$0 - \$0	To align staffing resources with current needs		
P22	Operations Deer Island Director's Office 2915009	F	T,G	Administrative Manager	6	9	Operations Liaison	6	10	\$78,584	\$86,494 - \$86,494	\$7,910 - \$7,910	To align title and grade with increase in job responsibilities.		
<b>PERSONNEL &amp; COMP COMMITTEE TOTAL=</b>											<b>3</b>	<b>SUBTOTAL:</b>		<b>\$7,910 - \$7,910</b>	

**PCR AMENDMENTS REQUIRING BOARD APPROVAL - May 2016**

Number	Current PCR #	V/F	Type	Current Title	UN	GR	Amended Title	UN	GR	Current/Budget Salary	Estimated New Salary	Estimated Annual \$ Impact	Reason For Amendment
B12	Operations Equipment Maintenance 3396009	V	T,G	Motor Equipment Foreman	2	17	Unit Supervisor, Motor Equipment Repair	2	19	\$72,534	\$57,056 - \$79,692	-\$15,478 - \$7,158	To align title and grade with increase in job responsibilities.
B13	Operations Operations Administration 5210059	F	T,G	Manager, Contract Administration	6	12	Senior Manager, Coordination & Control	6	13	\$84,196	\$94,245 - \$94,245	\$10,049 - \$10,049	To align title and grade with increase in job responsibilities.
B14	Position To be Added	N/A	N/A	N/A	N/A	N/A	Library Specialist	6	8	N/A	\$48,094 - \$71,464	\$48,094 - \$71,464	To address staffing needs in the MIS Department
<b>BOARD TOTAL =</b>					<b>3</b>	<b>SUBTOTAL:</b>					<b>\$42,665 - \$88,671</b>		
<b>GRAND TOTAL =</b>					<b>6</b>	<b>TOTAL ESTIMATED COSTS:</b>					<b>\$50,575 - \$96,581</b>		

MWRA  
POSITION DESCRIPTION



**POSITION:** Senior Staff Engineer, Electrical

**PCR#:**

**DIVISION:** Operations

**DEPARTMENT:** Engineering & Construction

**BASIC PURPOSE:**

Provides electrical engineering assistance in the review and design of Sewerage Division projects. Assists Operations to resolve emergency problems arising from equipment failure or malfunction.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Program Manager of Technical Support/Wastewater Engineering and Construction.

**SUPERVISION EXERCISED:**

Exercises close supervision and direction to engineers and drafters on assigned projects.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Assists in the in-house planning and design of various wastewater repair, improvement and replacement projects, and in the investigation and resolution of construction and operations problems.
- Provides electrical engineering support to the operating departments for the operations and maintenance programs of division facilities. Systems are typically 15 kV or 600 volt class.
- Participates in the design of in-house projects including development of project plans, specifications, cost estimates, schedules, proposals for bid and review of shop drawings.

- Establishes design criteria and applicable code requirements and performs analytical calculations for assigned work.
- Develops procedures to ensure safe and efficient operations, maintenance and testing practices.
- Provides technical review of consultant-prepared reports and design projects and contractor shop drawings.
- Participates in the preparation of standard specifications.
- Participates in field investigations in order to verify and obtain information on existing facilities, structures, systems and equipment.
- Prepares equipment and material quantity takeoffs for cost estimates.
- Develops and maintains records, drawings and maintenance listings as required.

**SECONDARY DUTIES:**

- Performs other related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Knowledge of principles of and practices of electrical engineering as normally attained through a four (4) year college program in engineering or a related field; and
- (B) Demonstrated knowledge of electrical transmission and distribution equipment design as acquired through five (5) to seven (7) years of experience; or
- (C) Any equivalent education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Working knowledge of variable frequency drives and programmable logic controllers required.
- (B) Clear understanding of the National Electric Code and Life Safety Code.
- (C) Proficiency with personal computers and knowledge of word processing, spreadsheets

and engineering applications software required.

- (D) Understanding of and experience with CADD systems required.
- (E) Excellent interpersonal, oral and written communication skills are required.

**SPECIAL REQUIREMENTS:**

Engineer-in-Training certificate preferred.

**TOOLS AND EQUIPMENT USED:**

Office machines as normally associated with the use of telephone, personal computer including word processing and other software, copy and machines.

**PHYSICAL DEMANDS:**

The physical demands described are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to sit and talk or hear. The employee is frequently required to use hands to finger, handle or operate objects, including office equipment, controls and reach with hands and arms. The employee is occasionally required to stand and walk.

The employee may occasionally be required to lift and/or move up to ten pounds. Specific vision abilities required by this job include close vision, distance vision, depth perception, peripheral vision and the ability to adjust focus.

**WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those employee encounters while performing the essential functions of this job. There are no specific environmental conditions noted.

The noise level in the work environment is usually loud in a field setting and moderately quiet in an office setting.

**August 2013**



MWRA  
POSITION DESCRIPTION

**POSITION:** Project Manager, SCADA Technicians

**PCR#:**

**DIVISION:** Operations

**DEPARTMENT:** Field Operations/Operations Support

**BASIC PURPOSE:**

Provides supervision and technical support for the Authority's Supervisory Control and Data Acquisition (SCADA), telecom communications, instrumentation, wiring, radio communications and all hardware control and monitoring aspects of the SCADA system. Is required to be on-call for emergencies twenty-four (24) hours a day, seven (7) days a week.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Program Manager, SCADA

**SUPERVISION EXERCISED:**

Exercises general supervision of SCADA Maintenance Technicians and C&C Technicians.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Supervises SCADA technicians and supports development, implementation and maintenance of the Operations Division's SCADA and telemetry systems.
- Provides advanced level technical support for maintenance, enhancements and troubleshooting on SCADA and related systems
- Identifies areas of need for SCADA system repair or improvement
- Responsible for project management on SCADA projects involving internal staff or external resources
- Prepares technical specifications and budget estimates for SCADA and telemetry systems,

computer systems, local area networks and programmable logic controller equipment.

- Motivates, assists and trains SCADA technicians in the theory and repair of SCADA system components including telemetry equipment, computer systems, programmable logic controllers, instrumentation and associated components.
- Serves as liaison between MWRA and SCADA system consultants and vendors.
- Prepares written and computer generated reports.
- Oversees daily work schedules, preventative maintenance schedules and calibration procedures.
- Monitors and reports on staff productivity and utilization. Recommends and institutes improvements on same using Maximo reporting software.
- Responsible for daily coordination with Technicians & Scheduler Planner to maintain draft dispatch, final and modified dispatch reports
- Creates, Modifies and reviews job plans & safety plans for SCADA technician work orders
- Performs QA/QC review of SCADA Technicians' work
- Responsible for conducting field audits of SCADA technicians
- Responsible for planning, coordination, logistic, parts requisition and technical support in order to facilitate efficiency with SCADA technicians.
- Ensures that the microwave and other data radio equipment, antenna and transmission line systems are properly installed, tested and maintained.
- Maintains hardware & Software for Programmable Logic Controllers (PLC), Remote Terminal Units (RTU), control panels, and instrumentation
- Updates SCADA system documentation including CAD drawings and documents
- Coordinates with vehicle maintenance to ensure assigned vehicles are maintained
- Liaison between the water & wastewater OCC and SCADA technicians
- Coordination with SCADA engineering group

**SECONDARY DUTIES:**

Page 2 of 4

Project Manager, SCADA Technicians-New

- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Four (4) year college program in an engineering discipline (electronic, electrical), control systems, telecommunications engineering or a related field; and/or
- (B) Five (5) to seven (7) years experience in the design, configuration and implementation of PLC control systems as well as the development of Graphic User Interfaces (GUI), and digital communication technology, Pump Station instrumentation and microprocessor control and digital/analog circuit design lines, of which two (2) to four (4) years should be in a supervisory capacity; or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Working knowledge of instrumentation configuration software, radio configuration software, ladder logic programming, and AutoCAD or equivalent CAD design program.
- (B) Working knowledge of EIA RS-232, RS-422, RS-485, V.35, X.25, Ethernet and other communications signaling standards and protocols.
- (C) Ability to test and troubleshoot to the component level using a microwave signal generators, spectrum analyzers, oscilloscopes, transmission line network analyzers, service monitors, power meters, frequency counters, BER test sets and logic analyzers.
- (D) Ability to perform installation, alignment and maintenance of microwave parabolic, omni directional and Yagi antennas on radio towers in excess of 100 feet above ground level.
- (E) Working knowledge of industry standards and best practices for instrument calibration procedures.
- (F) Familiar with cyber security concepts and practices.

**SPECIAL REQUIREMENTS:**

A valid Massachusetts Drivers License required.

Ability to obtain a FCC General Radiotelephone Operators License within six (6) months.

A valid Massachusetts Grade II Water Distribution or Treatment Licenses; or a Grade II



Wastewater Collection System Certification; or a Grade III Wastewater Treatment Plant certification; or the ability to obtain same within six (6) months.

Certification in Confined Space Entry or ability to pass MWRA Confined Space Training within six (6) months

**TOOLS AND EQUIPMENT USED:**

Electronic test equipment, computers, PLCs, hand tools, climbing and fall retrieval equipment, mobile radio, etc.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools, or controls and reach with hands and arms. The employee occasionally is required to sit, stand and walk. The employee is frequently required to climb or balance; stoop, kneel, crouch, or crawl; taste or smell.

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, distance, color vision, peripheral vision, depth perception, and the ability to adjust focus.

**WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly works in an office environment. The employee occasionally works in outside weather conditions. The employee occasionally works near moving mechanical parts and is occasionally exposed to wet and/or humid conditions and vibration. The employee occasionally works in high, precarious places and is occasionally exposed to fumes or airborne particles, toxic or caustic chemicals, and risk of electrical shock.

The noise level in the work environment is usually loud in field settings, and moderately quiet in office settings.

**April 2016**



MWRA  
POSITION DESCRIPTION

**POSITION:** Senior Staff Engineer, Electrical

**PCR#:**

**DIVISION:** Operations

**DEPARTMENT:** Engineering Services/Deer Island

**BASIC PURPOSE:**

Provides electrical engineering assistances in the review, design, construction administration, and oversight for various Deer Island electrical capital and maintenance construction projects and services.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Senior Program Manager, Electrical, Engineering Services Department for Deer Island.

**SUPERVISION EXERCISED:**

May direct and /or manage the work of construction and design firm employees and on occasion internal staff.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Provides field oversight of electrical capital and maintenance work performed by contractors to ensure compliance with contract documents.
- Provides technical review of consultant prepared reports and design projects and construction contractor submittals.
- Develops conceptual sketches, field measurements and reviews manufacturer product data. Compiles designs and drawings, provides first draft layouts and detail options for review by senior staff. Incorporates review comments into a final version with minimal technical guidance, supervision and direction.

- Maintains organized and detailed files on electric design and construction projects including, but not limited to, daily logs, correspondence, field measurements, manufacturer product data, payment requests, schedules and review comments.
- Recommends approval of variations made necessary by contingencies arising during construction and installation. Recommends approval of construction contractor payment requests.
- Maintains documentation of work performed by construction contractors, designers and in-house tradesmen, recommends approval variations made necessary by contingencies arising during construction and installation.
- Assist in the investigation and resolution of construction related and operational electrical issues.
- Prepares and reviews electrical engineering design calculations and technical specifications.
- Develops and maintains files and familiarity with all codes, code addenda, code cases, and industry standards applicable to the electrical field, and ensure that facility specifications comply.
- Provides oral and written reports detailing results of problem investigations and corrective recommendations including economic justification.
- Assists the plant operations staff with technical resolution and recommendations to electrical problems, which arise during normal plant operation.

**SECONDARY DUTIES:**

- Performs other related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Knowledge of principles of and practices of electrical engineering as normally attained through a four (4) year college program in engineering or a related field; and
- (B) Demonstrated knowledge of electrical transmission and distribution equipment design as acquired through five (5) to seven (7) years of experience; or
- (C) Any equivalent education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Working knowledge of variable frequency drives and programmable logic controllers required.
- (B) Clear understanding of the National Electric Code and Life Safety Code.
- (C) Proficiency with personal computers and knowledge of word processing, Excel spreadsheets and engineering applications software required.
- (D) Understanding of and experience with CADD systems required.
- (E) Excellent interpersonal, oral and written communication skills are required.

**SPECIAL REQUIREMENTS:**

Successful completion of the Fundamentals of Engineering (FE) exam is preferred.

**TOOLS AND EQUIPMENT USED:**

Office machines as normally associated with the use of telephone, personal computer including word processing and other software, and copy machines.

**PHYSICAL DEMANDS:**

The physical demands described are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to sit and talk or hear. The employee is frequently required to use hands to finger, handle or operate objects, including office equipment, controls and reach with hands and arms. The employee is occasionally required to stand and walk.

The employee may occasionally be required to lift and/or move up to ten pounds. Specific vision abilities required by this job include close vision, distance vision, depth perception, peripheral vision and the ability to adjust focus.

**WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee occasionally works in outside weather conditions. The employee occasionally works near moving mechanical parts, and is occasionally exposed to wet and/or humid conditions and vibration. The employee occasionally works in high precarious places and is occasionally exposed to fumes or airborne particles, toxic or caustic chemicals and risk of electrical shock.

The noise level in the work environment is usually loud in field settings and moderately quiet in other work facilities.

**August 2013**

MWRA  
POSITION DESCRIPTION

**NEW**

**POSITION:** Project Manager, SCADA Technicians

**PCR#:**

**DIVISION:** Operations

**DEPARTMENT:** Field Operations/Operations Support

**BASIC PURPOSE:**

Provides supervision and technical support for the Authority's Supervisory Control and Data Acquisition (SCADA), telecom communications, instrumentation, wiring, radio communications and all hardware control and monitoring aspects of the SCADA system. Is required to be on-call for emergencies twenty-four (24) hours a day, seven (7) days a week.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Program Manager, SCADA

**SUPERVISION EXERCISED:**

Exercises general supervision of SCADA Maintenance Technicians and C&C Technicians.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Supervises SCADA technicians and supports development, implementation and maintenance of the Operations Division's SCADA and telemetry systems.
- Provides advanced level technical support for maintenance, enhancements and troubleshooting on SCADA and related systems
- Identifies areas of need for SCADA system repair or improvement
- Responsible for project management on SCADA projects involving internal staff or external resources
- Prepares technical specifications and budget estimates for SCADA and telemetry systems,

computer systems, local area networks and programmable logic controller equipment.

- Motivates, assists and trains SCADA technicians in the theory and repair of SCADA system components including telemetry equipment, computer systems, programmable logic controllers, instrumentation and associated components.
- Serves as liaison between MWRA and SCADA system consultants and vendors.
- Prepares written and computer generated reports.
- Oversees daily work schedules, preventative maintenance schedules and calibration procedures.
- Monitors and reports on staff productivity and utilization. Recommends and institutes improvements on same using Maximo reporting software.
- Responsible for daily coordination with Technicians & Scheduler Planner to maintain draft dispatch, final and modified dispatch reports
- Creates, Modifies and reviews job plans & safety plans for SCADA technician work orders
- Performs QA/QC review of SCADA Technicians' work
- Responsible for conducting field audits of SCADA technicians
- Responsible for planning, coordination, logistic, parts requisition and technical support in order to facilitate efficiency with SCADA technicians.
- Ensures that the microwave and other data radio equipment, antenna and transmission line systems are properly installed, tested and maintained.
- Maintains hardware & Software for Programmable Logic Controllers (PLC), Remote Terminal Units (RTU), control panels, and instrumentation
- Updates SCADA system documentation including CAD drawings and documents
- Coordinates with vehicle maintenance to ensure assigned vehicles are maintained
- Liaison between the water & wastewater OCC and SCADA technicians
- Coordination with SCADA engineering group

**SECONDARY DUTIES:**

Page 2 of 4

Project Manager, SCADA Technicians-New

- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Four (4) year college program in an engineering discipline (electronic, electrical), control systems, telecommunications engineering or a related field; and/or
- (B) Five (5) to seven (7) years experience in the design, configuration and implementation of PLC control systems as well as the development of Graphic User Interfaces (GUI), and digital communication technology, Pump Station instrumentation and microprocessor control and digital/analog circuit design lines, of which two (2) to four (4) years should be in a supervisory capacity; or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Working knowledge of instrumentation configuration software, radio configuration software, ladder logic programming, and AutoCAD or equivalent CAD design program.
- (B) Working knowledge of EIA RS-232, RS-422, RS-485, V.35, X.25, Ethernet and other communications signaling standards and protocols.
- (C) Ability to test and troubleshoot to the component level using a microwave signal generators, spectrum analyzers, oscilloscopes, transmission line network analyzers, service monitors, power meters, frequency counters, BER test sets and logic analyzers.
- (D) Ability to perform installation, alignment and maintenance of microwave parabolic, omni directional and Yagi antennas on radio towers in excess of 100 feet above ground level.
- (E) Working knowledge of industry standards and best practices for instrument calibration procedures.
- (F) Familiar with cyber security concepts and practices.

**SPECIAL REQUIREMENTS:**

A valid Massachusetts Drivers License required.

Ability to obtain a FCC General Radiotelephone Operators License within six (6) months.

A valid Massachusetts Grade II Water Distribution or Treatment Licenses; or a Grade II



Wastewater Collection System Certification; or a Grade III Wastewater Treatment Plant certification; or the ability to obtain same within six (6) months.

Certification in Confined Space Entry or ability to pass MWRA Confined Space Training within six (6) months

**TOOLS AND EQUIPMENT USED:**

Electronic test equipment, computers, PLCs, hand tools, climbing and fall retrieval equipment, mobile radio, etc.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools, or controls and reach with hands and arms. The employee occasionally is required to sit, stand and walk. The employee is frequently required to climb or balance; stoop, kneel, crouch, or crawl; taste or smell.

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, distance, color vision, peripheral vision, depth perception, and the ability to adjust focus.

**WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly works in an office environment. The employee occasionally works in outside weather conditions. The employee occasionally works near moving mechanical parts and is occasionally exposed to wet and/or humid conditions and vibration. The employee occasionally works in high, precarious places and is occasionally exposed to fumes or airborne particles, toxic or caustic chemicals, and risk of electrical shock.

The noise level in the work environment is usually loud in field settings, and moderately quiet in office settings.

**April 2016**

MWRA  
POSITION DESCRIPTION

OLD

**POSITION:** Administrative Manager

**PCR#:**

**DIVISION:** Operations, Administration and Finance

**DEPARTMENT:** Environmental Quality, Technical Services/DI, Directors Office/DI, Human Resources, Engineering and Construction

**BASIC PURPOSE:**

Manages all financial and administrative processes including budget and financial analysis and planning, contract administration, accounting, accounts payables, procurement, personnel, and payroll. Assists with development, production, and distribution of documents and publications. Coordinates specific department programs. Provides a range of possible duties, but will not necessarily perform all the duties listed below.

**SUPERVISION RECEIVED:**

Works under the general supervision of the departmental Director, Manager, Program Manager, Project Manager or Manager, Contract Administration.

**SUPERVISION EXERCISED:**

Exercises supervision over administrative support personnel in the department on projects and processes.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Manages the preparation of annual budgets (CEB and CIP) and APPOs. Provides information and assistance to the section managers in budget preparation and trains managers in new policies and procedures.
- Coordinates the activities of administrative support personnel in the performance of a range of department and division wide tasks. Such coordination includes technical support, coaching and training. Provides coordination of support staff that includes prioritizing work assignment and coordinating the assignment of support staff to special projects, as appropriate.

- Assists in the management of the contract administration process for major contracts. Duties include tracking data, analyzing costs, developing systems, reviewing invoices, preparing and tracking accruals, coordinating with the Procurement department, providing assistance on processing amendments and change orders and issuing status reports.
- Manages accounting processes for department including accounts payable, reporting and accruals.
- Manages personnel and payroll function for department with projected staffing of employees. Duties include overseeing PMRS and hiring processes, personnel tracking, payroll administration and implementation of union contract provisions.
- Generates or oversees production of administrative reports required by MWRA divisions, external agencies and the Advisory Board.
- Manages the production of reports and public relations documents. Duties may include technical writing or graphics preparation.
- Coordinates the Sick Leave Oversight Program. Serves as liaison between Human Resources and Operations in regards to sick leave. Prepares and distributes sick leave usage reports for Operations Managers. Reviews completed sick leave reports prepared by Operations Managers. Works in close coordination with Human Resources to monitor the use of sick time by employees on documentation requirements (e.g., determining whether the employee provided satisfactory medical documentation, and coordinating any necessary follow-up).
- Audits written time submissions from operational staff assigned to all shifts in order to ensure that staff are applying time appropriate to use such as leave time, meal breaks, compensatory time, overtime and stand-by.

**SECONDARY DUTIES:**

- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) A four (4) year college program in accounting, business administration, public administration or related field; and
- (B) Understanding of budget, personnel, procurement, accounting, contract, permits or grant administration principles and other administrative areas as acquired by five (5) to seven (7) years in finance and administration of which a minimum of one (1) year must be in a

supervisory capacity; or

- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Familiarity with the use of computerized information systems is required.
- (B) Proficient in MS Office Suite including Word, and Excel required.
- (C) Experience in Public Sector recommended.
- (D) In depth knowledge of the Chapter 30 and Chapter 149 State Bidding Laws as well as extensive knowledge of MWRA procurement with respect to administration such as Service Supply, Professional, Non-Professional and Construction contracts required for position at Deer Island.
- (E) Excellent interpersonal, verbal and written communications skills required.

**SPECIAL REQUIREMENTS:**

None.

**TOOLS AND EQUIPMENT USED:**

Office equipment as normally associated with the use of telephone, personal computer including word processing and other software, copy and fax machine.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools or controls and reach with hands and arms. The employee frequently is required to sit and talk or hear. The employee is occasionally required to walk; stand; climb or balance; stoop, kneel, crouch, or crawl; taste or smell.

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, distance vision, depth perception, peripheral vision and the ability to adjust focus.

**WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly works in an office environment. The noise level in the work environment is moderately quiet.

**November 2013**



MWRA  
POSITION DESCRIPTION

**POSITION:** Operations Liaison  
**DIVISION:** Operations  
**DEPARTMENT:** Deer Island Wastewater Treatment Plant (DIWWTP)

**BASIC PURPOSE:**

Provide management, administrative and technical support for operations, maintenance and administrative activities within the Deer Island Wastewater Treatment Plant .

**SUPERVISION RECEIVED:**

Works under the general supervision of the Director and Deputy Director of the DIWWTP.

**SUPERVISION EXERCISED:**

None.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Assist as directed with the coordination of all DIWWTP activities including facility operations issues, technical support tracking and field activities.
- Coordinate with Section managers to assist in establishing and implementing DIWWTP policies and procedures. Assist in research, review and drafting of proposed new and revised policies and procedures.
- Assists with coordination of staff development training including contractor training. Assist with safety training program delivery.
- Maintain databases in support of operations and maintenance activities related to Deer Island Treatment Plant. Prepares written and computer-generated reports.
- Manage any administrative activities related to DIWWTP including but not limited to personnel matters and submittal of management reports (i.e. Orange and Yellow Notebook).

- Generate and distribute needed DIWWTP reports related to facility performance, regulatory and community issues and personnel matters.
- Coordinate with applicable section management on aspects of DIWWTP operation including responding to correspondence related to community assistance and interdepartmental projects.
- Act as liaison with host communities on matters of odors, operations impacts, community inquiries and information presentations and meetings.
- Assist in various aspects of the Community Assistance Program.
- Perform related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Knowledge of business and management practices and principles normally attained through a 4-year college program in business, public administration or related field, and
- (B) Understanding of the operation of a large municipal wastewater transport system as acquired through five (5) to seven (7) years of experience, or
- (C) Any equivalent combination of education and experience.

**Necessary Knowledge, Skills and Abilities:**

- (A) Excellent interpersonal, oral and written communication skills are required.
- (B) Familiarity with local government systems.
- (C) Knowledge of personal computers required.

**SPECIAL REQUIREMENTS:**

None

**TOOLS AND EQUIPMENT USED:**

Motor vehicle, mobile radio, telephone, beeper.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools, or controls and reach with hands and arms. The employee frequently is required to stoop, kneel, crouch or crawl. The employee occasionally is required to stand, walk, talk or hear, sit, climb, or balance.

The employee must frequently lift and/or move up to 25 pounds. Specific vision abilities required by this job include close vision, distance and peripheral vision, depth perception, and the ability to adjust focus.

### **WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly works in outside weather conditions. The employee regularly works near moving mechanical parts and is occasionally exposed to wet and/or humid conditions and vibration. The employee occasionally works in precarious places and is occasionally exposed to fumes or airborne particles, toxic or caustic chemicals, and risk of electrical shock.

The noise level in the work environment is very loud in field settings, and moderately loud at other work locations.

**April 2016**





MWRA  
POSITION DESCRIPTION

**POSITION:** Motor Equipment Repair Foreman  
**PCR#:**  
**DIVISION:** Administration & Finance, Operations  
**DEPARTMENT:** Fleet Services, Western Field Operations

**BASIC PURPOSE:**

Motor Equipment Repairman Foreman provides direct supervision of repair personnel at Fleet Services sites. Complete initial and final diagnosis of repairs needed.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Equipment Repair Supervisor or Vehicles Services Supervisor.

**SUPERVISION EXERCISED:**

Exercises close supervision of the Motor Equipment Repairmen/Garage Staff.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Conducts pre/post diagnostic reviews.
- Issues work assignments based on skills and requirements.
- Monitors preventive maintenance schedule.
- Schedules vehicles/equipment for corrective maintenance.
- Monitors and reviews workmanship of repair staff & outside vendors.
- Confirms and orders parts needed for repair of vehicles/equipment.

- Initiates work orders and ensures proper completion.
- Carries out repairs and maintenance as needed to maintain schedule.
- Maintains staff daily attendance log.
- Conducts training of less experienced staff.
- Recommends equipment and training courses to insure access/knowledge of new technologies.
- Enters manually or by computer, work order information and/or diagnostic information.
- Insures cleanliness of shop and adherence to hazardous materials handling and disposal as well as other safety-related functions.
- Monitors Authority radio communications system

**SECONDARY DUTIES:**

- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) A high school education or the equivalent; and
- (B) Six (6) to eight (8) years experience in an automotive/equipment maintenance environment that includes the repair and maintenance of gasoline and diesel vehicles and heavy duty equipment; and
- (C) Minimum of two (2) years experience in a supervisory capacity; and
- (D) Experience with operation of repair equipment such as but not limited to strut machine, tire machine, wheel balancing machine, acetylene & oxygen torch; and
- (E) Experience with operation of forklifts, material handling equipment, tow and ramp trucks; and
- (F) Working experience with personal computer applications preferred; or
- (G) Any equivalent combination of education training and or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Considerable knowledge of methods, tools, materials and practices used in the repair of gasoline and diesel engines.
- (B) Considerable knowledge of computerized & electrical diagnostic tools such as, but not limited to, TECH 1 & 2, Master Tech & OTC Gas Analyzer.
- (C) Ability to give and follow written and oral instructions.
- (D) Basic reading, writing, mathematical, and scientific skills as normally attained through a high school education or the equivalent.

**SPECIAL REQUIREMENTS:**

Possess a valid Class B Commercial Drivers License.

Current ASE Certification (within past five years): Refrigerant Recycling & Recovery (ASE or equivalent), Brakes, Suspension/Steering, Electrical/Electronic Systems, Engine Performance, Diesel Engines, Heating & Air Conditioning, Engine Repair, Automatic Transmission/Transaxle (Master Auto or Truck Technician, L1 or L2 preferred)

**TOOLS AND EQUIPMENT USED:**

Mobile and portable radios: hand-held, motorized, pneumatic tool, copy and fax machines, hand-held and desktop computers and diagnostic tools, forklifts and other material handling equipment.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools, or controls and reach with hands and arms. The employee regularly is required to stand, walk, talk, hear, sit, climb, balance, taste or smell, stoop, kneel, crouch or crawl.

The employee must regularly lift and/or move up to 10 pounds, frequently lift and/or move up to 25 pounds and occasionally lift and/or move more up to 50 pounds. Specific vision abilities required by this job include close vision, distance and peripheral vision, depth perception, and the ability to adjust focus.

**WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly works in outside weather conditions, exposed to wet/humid conditions, near moving mechanical parts, exposed to fumes, airborne particles, toxic or caustic chemicals. Frequently, the employee will experience extreme heat and the risk of electrical shock. Occasionally, the employee will experience extreme cold and vibration.

The noise level in the work environment is very loud in field settings, and moderately loud at other work locations.

**August, 2001**

MWRA  
POSITION DESCRIPTION

**NEW**

**POSITION:** Unit Supervisor, Motor Equipment Repair

**PCR#:**

**DIVISION:** Operations

**DEPARTMENT:** Equipment Maintenance

**BASIC PURPOSE:**

Motor Equipment Repairman Foreman supervises maintenance of vehicle/equipment fleet for Western Operations. Provides direct supervision of repair personnel at multiple Fleet Services sites. Completes initial and final diagnosis of repairs needed.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Supervisor of Equipment Maintenance

**SUPERVISION EXERCISED:**

Exercises close supervision of the Motor Equipment Repairmen/Garage and work coordination staff at multiple locations.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Supervise staff that perform maintenance and motor vehicle repair functions at multiple sites.
- Conducts pre/post diagnostic reviews utilizing scan tools and online PC based computerized troubleshoot and repair assistance.
- Determine daily assignments of assigned staff and distributes work at multiple work sites according to established deadlines and priorities.
- Supervises the Work Order Coordinator in monitoring preventive maintenance schedule and insuring that all work is being done on MAXIMO work orders and that all materials are accounted for.
- Schedules vehicles/equipment for corrective maintenance.
- Monitors and reviews workmanship of repair staff & outside vendors.
- Confirms and orders parts needed for repair of vehicles/equipment.
- Carries out repairs and maintenance as needed to maintain schedule.
- Maintains staff daily attendance log.

- Conducts training of less experienced staff.
- Recommends equipment and training courses to insure access/knowledge of new technologies.
- Enters, work order information and/or diagnostic information into CMMS (MAXIMO).
- Insures cleanliness of shop and adherence to hazardous materials handling and disposal as well as other safety-related functions.
- Monitors Authority radio communications system.
- Works with management staff to coordinate evaluation of vehicle conditions and replacement strategies.
- Develops cost estimates for repairs.
- Manages spare parts inventory and recommends stocking levels for warehouse staff.
- Supervises assigned crews including taking disciplinary actions (issuing verbal warnings and initiating written warnings) when necessary, conducting performance reviews and preparing regular reports as required on work completion and crew productivity.
- In the absence of the Grounds General Foreman, supervises snow removal operations.
- Follows MWRA established safety, operating and emergency response procedures and polices established by the MWRA.
- Assists Planners/Schedulers to develop preventative maintenance and corrective maintenance priorities, schedules and estimates of level of effort to ensure vehicle performance is maximized.
- Operates forklifts and other light equipment.
- With proper trainings sets up ladders, staging and rigging and utilizes hoists, jacks, dollies, lifts ect.
- Insures that all vehicles meet the RMV inspection criteria and that they receive the annual inspections.
- Applies for and maintains the over width vehicle permits for transporting heavy equipment.

**SECONDARY DUTIES:**

- Performs related duties as required.
- Assist employees with preparation of injury/illness reports, safety and maintenance work orders and keeps accurate records.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) A high school education or the equivalent; and
- (B) Eight (8) to ten (10) years experience in an automotive/equipment maintenance environment that includes the repair and maintenance of gasoline and diesel vehicles and heavy duty equipment; and

- (C) Minimum of two (4) years experience in a supervisory capacity; and
- (D) Experience with operation of repair equipment such as but not limited to strut machine, tire machine, wheel balancing machine, acetylene & oxygen torch; and
- (E) Experience with operation of forklifts, material handling equipment, tow and ramp trucks; and
- (F) Working experience with personal computer applications preferred; or
- (G) Any equivalent combination of education training and or experience.
- (H) Successful completion of the MWRA sponsored supervisory development training preferred.

Necessary Knowledge, Skills and Abilities:

- (A) Considerable knowledge of methods, tools, materials and practices used in the repair of gasoline and diesel engines.
- (B) Considerable knowledge of computerized & electrical diagnostic tools such as, but not limited to, TECH 1 & 2, Master Tech & OTC Gas Analyzer.
- (C) Ability to give and follow written and oral instructions.
- (D) Basic reading, writing, mathematical, and scientific skills as normally attained through a high school education or the equivalent.
- (E) Ability to plan organize and assign duties in multiple locations.
- (F) Ability to use personal computer, data terminals and specialized MAXIMO/Lawson software to perform related duties.
- (G) Working knowledge of methods, procedures and work rules relating to equipment repair facilities.

**SPECIAL REQUIREMENTS:**

Possess a valid Class A Commercial Drivers License.

Current ASE Certification (within past five years): Refrigerant Recycling & Recovery (ASE or equivalent), Brakes, Suspension/Steering, Electrical/Electronic Systems, Engine Performance, Diesel Engines, Heating & Air Conditioning, Engine Repair, Automatic Transmission/Transaxle (Master Auto or Truck Technician, L1 or L2 preferred)

Department of Public Safety Hoisting License 1B, 2A and 4G or the ability to obtain within one year

**TOOLS AND EQUIPMENT USED:**

Mobile and portable radios: hand-held, motorized, pneumatic tool, copy and fax machines, hand-held and desktop computers and diagnostic tools, forklifts and other material handling equipment.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools, or controls and reach with hands and arms. The employee regularly is required to stand, walk, talk, hear, sit, climb, balance, taste or smell, stoop, kneel, crouch or crawl.

The employee must regularly lift and/or move up to 10 pounds, frequently lift and/or move up to 25 pounds and occasionally lift and/or move more up to 50 pounds. Specific vision abilities required by this job include close vision, distance and peripheral vision, depth perception, and the ability to adjust focus.

**WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly works in outside weather conditions, exposed to wet/humid conditions, near moving mechanical parts, exposed to fumes, airborne particles, toxic or caustic chemicals. Frequently, the employee will experience extreme heat and the risk of electrical shock. Occasionally, the employee will experience extreme cold and vibration.

The noise level in the work environment is very loud in field settings, and moderately loud at other work locations.

**April 2016**



MWRA  
POSITION DESCRIPTION



**POSITION:** Manager, Contract Administration

**PCR#:**

**DIVISION:** Operations

**DEPARTMENT:** Operations Administration

**BASIC PURPOSE:**

May either direct the oversight and management of administrative aspects of the Authority's professional service & technical assistance contracts, develop and oversee administrative and financial policies and procedures to ensure that contracts are administered in compliance with MWRA policies and applicable federal and state laws, or manage the Quality Assurance/Quality Control (QA/QC) programs for Engineering and Construction projects as established by the Authority.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Deputy Chief Operating Officer

**SUPERVISION EXERCISED:**

Exercises supervision of office staff, professionals, technical staffs and administrative personnel as assigned.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Develops, maintains and revises policies and procedures for the procurement, tracking, administration and management of professional service, consultant and construction contracts.
- Reviews contract amendments and change orders; participates in closeout and final payment of contracts; and assists in the defense of contract claims and in dispute resolution procedures.

**For Professional Services and Technical Assistance Contracts:**

- Manages administrative functions related to the preparation, review and processing of professional service contract requisitions and amendments, including the preparation of staff summaries.
- Works with Assistant Contract Managers (ACM) to procure and manage professional service contracts.

- Assists Project Managers through the contract closeout of professional service contracts.
- Prepare analysis of E-Tables submitted for professional service contracts.
- Attends selection committee meeting and performs the duties of committee secretary.
- Receive and route Board and Delegated staff summaries with accompanying précis.
- Performs reference checks and provides findings to selection committee.
- Represents the division, as delegated, on various committees related to administrative issues (i.e., Authority-wide Business Procedure Review Committee).
- Advises senior management on procurement/contract related matters.

**For QA/QC Programs:**

- Designs and administers contract administration and procurement management systems.
- Develops and maintains databases and systems to maintain contract logs, and to track contract progress and advertising, bidding and contract award phases.
- Manages the preparation and updates the provisions of current/future MWRA standard specifications and contract provisions.
- Negotiates professional service consultant contracts in financial and administrative areas.
- Develops contract documents with design and construction managers.
- Maintains current wage rates applicable to state and federal contracts.
- Reviews invoices and audit payments.
- Conducts performance audits, in concert with Internal Audit of contractors as required.
- Reviews provisions, consults with appropriate MWRA staff and ensures compliance in legal, financial and affirmative action areas.

**SECONDARY DUTIES:**

Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) A four (4) year college program in business administration or related field. Graduate degree in law, business or public administration is preferred; and

(B) Understanding of contract administration acquired by at least seven (7) to nine (9) years contract management experience; or

(C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Knowledge of and experience with MGL Chapters 149 and 30 and construction procedures.

(B) Knowledge and experience with automated systems for tracking change orders and other contract management information.

(C) Familiarity with personal computers and working knowledge of standard MWRA office automation products; Excel, Microsoft Windows, Microsoft Word, Access.

(D) Experience in federal and state government contracting preferred.

(E) Excellent written and oral communication skills are required.

**SPECIAL REQUIREMENTS:**

None.

**TOOLS AND EQUIPMENT USED:**

Office machines as normally associated, with the use of telephone, personal computer including word processing and other software, copy and fax machine.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools or controls and reach with hands and arms. The employee frequently is required to sit and talk or hear. The employee is occasionally required to walk and stand.

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move up to 25 pounds. Specific vision ability required by this job includes close vision and color vision, and the ability to adjust focus.

**WORK ENVIRONMENT:**

The work characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee may occasionally work in outside weather conditions. The employee may occasionally work near moving mechanical parts, and may occasionally be exposed to wet and/or humid conditions and vibrations. The employee may occasionally work in high precarious places and may occasionally be exposed to fumes or airborne particles, toxic or caustic chemicals and risk of electrical shock. While performing the duties of this job, the employee may occasionally work in various field settings and in an office environment.

The noise level in the work environment is usually loud in field settings and moderately quite in an office setting.

**September 2012**

**NEW**

**MWRA  
POSITION DESCRIPTION**

**POSITION:** Senior Manager, Coordination and Control

**PCR#:**

**DIVISION:** Operations

**DEPARTMENT:** Operations Administration

**BASIC PURPOSE:**

Develops and implements automated administrative systems and procedures related to master planning, operational and business strategies, organizational structure and contract management in support of the Chief Operating Officer. Manages Operations Division reporting requirements, contract management requirements and public presentations and materials.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Chief Operating Officer

**SUPERVISION EXERCISED:**

Exercises close supervision of assigned administrative support staff.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Develops and implements automated database systems for all Operations Division internal tracking requirements related to planning, contract management, operations and business strategies.
- Maintains and revises policies, procedures and electronic tracking for the administration and management of contracts.
- Oversees the Division's procurement of consultants, contractors and materials in conjunction with the Procurement Department.
- Coordinates all monthly Board of Directors agenda items, materials and presentations.

- Manages and facilitates the preparation of administrative, organizational and optimization analyses for the Division.
- Plans, directs and manages major administrative special projects directed by the Chief Operating Officer.
- Preparation and coordination of materials for public and regulatory meetings.
- Assists in responding to public requests for assistance and information.
- Oversees and monitors Operation's Division reporting requirements.
- Reviews contract provisions, consults with appropriate MWRA staff and ensures compliance in legal, financial and affirmative action areas.
- Facilitates implementation of Operation's Division training initiatives.
- Assists in implementation of improvements in the Capital Delivery Program.
- Coordinates and approves the Division's Yellow and Orange Notebooks.
- Represents the Chief Operating Officer on various matters as assigned.
- Coordinates with Law Division on all public information requests.

**SECONDARY DUTIES:**

- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- A) A four- (4) year college program in public/business administration or a related field.; and
- B) Knowledge of administrative management, procurement policies and procedures, financial analysis and personnel administration as acquired through seven (7) to nine (9) years of related experience; or
- C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- A) Demonstrated effectiveness at facilitating major projects that involve coordinating with people across all levels of an organization.
- B) Understanding of conceptual issues related to development of computer systems.

C) Excellent analytical, facilitation, oral and written communication skills.

**SPECIAL REQUIREMENTS:**

None.

**TOOLS AND EQUIPMENT USED:**

Office machines as normally associated, with the use of telephone, personal computer including word processing and other software, copy and fax machine.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to sit, talk or hear. The employees is regularly required to use hands to finger, handle, feel or operate objects, including office equipment, or controls and reach with hands and arms. The employee frequently is required to stand and walk.

There are no requirements that weight be lifted or force be exerted in the performance of this job. Specific vision abilities required by this job include close vision, and the ability to adjust focus.

**WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee regularly works in an office environment.

The noise level in the work environment is usually a moderately quiet office setting.

May 2016

MWRA  
POSITION DESCRIPTION

**NEW**

**POSITION:** Library Specialist  
**PCR#:**  
**DIVISION:** Administration  
**DEPARTMENT:** Management Information Systems (MIS)

**BASIC PURPOSE:**

Support the operation of a comprehensive library and information resource center including computer access to research sources that will assist staff in accomplishing the MWRA mission.

**SUPERVISION RECEIVED:**

Works under the close supervision of the Library Supervisor.

**SUPERVISION EXERCISED:**

On specific projects may lead a team comprised project staff.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Executes in-depth technical research requested by staff through the utilization of on-line services.
- Recommends informational materials for MWRA library collection, including books, subscriptions, periodicals, and multi-media, then reviews collection to ensure that standards and specifications are up-to-date.
- Performs operation tasks including data imports and/or entry of news clips, scanning/photocopying of reference requests, re-shelving of returned materials, processing of interlibrary loan requests, cataloging new materials and other duties as assigned.
- Provides access to the library information sources including books, journals, multi-media assets, news clips, photographs, flood plain maps and historical items.



- Classifies new materials and consultant reports in accordance with library classifications schemes and notifies staff of new acquisitions by issuing Library updates and the Intranet site.
- Manages and maintains the integrity and standardization of existing information stored in library computer databases and web pages.
- Fields and responds to information requests from all levels of authority staff, the public, students and consultants via phone, e-mail and on-site visits.
- Provides on-site staff training for computer access to library collections.
- Contributes to the monthly report of library activities by summarizing pertinent research questions.
- Attends authority informational meetings as necessary.
- Adheres to all Record Management policies and supports records center needs as assigned.

**SECONDARY DUTIES:**

- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Four (4) year college program (Information Services, Liberal Arts or Science preferred); and
- (B) Specific understanding of library science and information services as acquired through one (1) to three (3) years experience.
- (C) Any equivalent combination of education and/or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Proficiencies in computer application including MS Office, MS Access, and on-line search tools are required. HTML and database skills preferred.
- (B) Capable of using Micro media equipment.
- (C) Excellent analytical, interpersonal, written and oral communications skills are required.

**SPECIAL REQUIREMENTS:**

A valid Massachusetts Class D Operators License.

**TOOLS AND EQUIPMENT USED:**

Office machines as normally associated, with the use of telephone, personal computer including word processing and other software, copy and fax machine.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools or controls, reach with hands and arms, and talk or hear. The employee frequently is required to stand, sit, climb or balance. The employee occasionally is required to walk, stoop, kneel, crouch or crawl, taste or smell.

The employee must frequently lift and/or move up to 25 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision and color vision, and the ability to adjust focus.

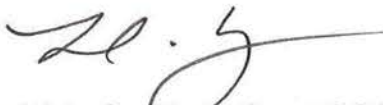
**WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee regularly works in an office environment.

The noise level in the work environment is usually a moderately quiet office setting.

**April 2016**

## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** May 11, 2016  
**SUBJECT:** Appointment of Manager, Operations Administration, Operations Division

---

COMMITTEE: Personnel & Compensation

Karen Gay-Valente, Director, Human Resources  
Carolyn Fiore, Deputy Chief Operating Officer  
Preparer/Title

     INFORMATION

  X   VOTE

  
Michael J. Hornbrook  
Chief Operating Officer

---

### RECOMMENDATION:

To approve the appointment of Mr. Marcel Brady to the position of Manager, Operations Administration, (Unit 6 Confidential, Grade 13), at an annual salary of \$117,179.15, commencing on a date to be determined by the Executive Director.

### DISCUSSION:

The position of Manager, Operations Administration, became vacant upon the retirement of the incumbent, Kevin Collins. This position reports directly to the Chief Operating Officer. The Manager, Operations Administration, manages division level administrative initiatives and policies in support of the Chief Operating Officer. The position is the key point person for staff summary development for the Operations Division; managing the editing and tracking process, coordinating between affected departments, and resolving any issues that develop. In addition, the position oversees the development, coordination and implementation of all Operations Division procurement policies and initiatives. Other responsibilities include, but are not limited to, managing purchasing card reviews, coordinating Internal Audit compliance audit responses for the division, reviewing MIS requests, and coordinating the Operations Division's CNY space planning issues.

### Selection Process:

The position was posted internally and five candidates applied. The Chief Operating Officer, the Deputy Chief Operating Officer, Programs, Policy & Planning, and the Special Assistant for Affirmative Action interviewed all five internal candidates. Upon completion of those interviews, Mr. Marcel Brady was identified as the most qualified candidate to fill this position based on his education, experience, and knowledge of the requirements of the position.

Mr. Brady currently holds the position of Manager, Contract Administration (Unit 6, Grade 12)

in the Operations Department. Mr. Brady has more than 22 years of progressively responsible experience at the MWRA, beginning in 1994 as a Senior Contract Administrator. In his current position, Mr. Brady is principally responsible for oversight of the preparation and processing of professional services contract requisitions, amendments, and staff summaries for the Operations Division. In this role, he works closely with Operations Division contract managers to procure and manage professional service contracts, including acting as the committee secretary on selection committees. Prior to his employment at the MWRA, Mr. Brady was employed in the education and telecommunications fields.

Mr. Brady holds a Bachelor of Arts Degree in Mathematics from University of Massachusetts, Boston, and a Master of Education Degree in Administration, Planning and Social Policy from Harvard University.

**BUDGET/FISCAL IMPACT:**

There are sufficient funds for this position in FY16 and Proposed FY17 Current Expense Budgets.

**ATTACHMENTS:**

Resume of Marcel Brady  
Position Description  
Organization Chart

MARCEL R. BRADY

EMPLOYMENT HISTORY

8/94 – Present MASSACHUSETTS WATER RESOURCES AUTHORITY

BOSTON, MA

Manager, Contract Administration – Operations (11/12 – present)

Responsibilities include:

- Act as back-up to Manager, Operations Administration, when he's on vacation, out on sick leave and after his retirement. Responsibilities includes: assist in the management of the staff summary process for the Operations Division; work with the Chief Operating Officer to ensure the appropriate development, editing and tracking of Board and Delegate Authority staff summaries; functions as Security Liaison for Operation staff coordinating access profile requests; review and edit critical need purchase order requests, and sole source initiatives; and review for approval MIS-related requests for Operations staff.
- Manage administrative functions related to the preparation, review and processing of professional service contract requisitions and amendments, including the preparation of staff summaries
- Works with Assistant Contract Managers (ACM) to procure and manage professional services contracts
- Assists Project Managers through the contract closeout of professional service contracts
- Prepare analysis of E-Tables submitted for professional service contracts
- Attend selection committee meeting and performs the duties of committee secretary
- Receive and route Board and Delegated staff summaries with accompanying precis
- Performs reference checks and provides findings to selection committee
- Advise senior management on procurement/contract matters
- Develops contract documents with design and construction managers
- Conducts performance audits, in concert with Internal Audit of contractors as required
- Reviews invoices and audit payments

Assistant Manager, Contract Administration – Operations (11/97 – 11/12)

Responsibilities included:

- Worked with Procurement Officer to procure and manage Technical Assistance Services Contracts
- Administrative Manager for multi-discipline and individual discipline Technical Assistance Consultant Services Contracts managed by other Project Managers
- Attended selection committee meetings and performed duties of committee secretary.
- Performed reference checks and provide findings to selection committee'
- Supervised staff responsible for processing Consultant invoices.
- Provided support for monthly 5B reporting by providing tables for monthly meeting, create/maintain 5B spreadsheets used by Construction Managers and others.
- Drafted and finalized non-CM Chapters 30 and 149 construction project change order and supporting documents such as proposed change orders; PCO summary sheets and staff summaries; review Article 13 analyses and memorandum of negotiation. (FY 04-FY 05)
- Acted as back-up support for Manager, Contract Administration.

**Senior Contract Administrator (8/94-11/97)**

Responsibilities included:

- Provided oversight and management of administrative aspects of construction and professional services contracts.
- Provided assistance in negotiation and preparation of contract documents for engineering and construction managers.
- Ensured compliance with state and federal laws and regulations as well as MWRA's policies and procedures.

**9/97-present METROPOLITAN COUNCIL FOR EDUCATIONAL OPPORTUNITY, INC. (METCO)**

**ROXBURY, MA**

Mathematics and Physics tutor for Middle and High school students.

**7/88-8/89 NYNEX – NEW ENGLAND**

**HAVERTHILL, MA**

(Contracted through Continental Field Services, Inc.)

- **Senior Project Engineer**

Responsibilities included:

- Project and Routine Work Order design.
- Coordinated with NYNEX Construction, contractors and utilities to completion of jobs.
- Conducted manhole survey, underground and aerial plant facilities for new job designs and updating record plans.
- Provided cost estimate, including contractor cost, for new design jobs.

- Prepared contract work orders put for bid.
- Inspected work done by NYNEX Construction and contractors, for conformance to work plans and NYNEX specifications.
- Designed and provide cost estimates for work change orders.

3/87-7/88      **NEW ENGLAND TELEPHONE**      **WORCESTER, MA**

(Contracted through Sierra Telecom Services, Inc.)

**Senior Project Engineer**

Responsibilities included:

Same as above at NYNEX – England

6/83-2/87      **WANG LABORATORIES**      **BURLINGTON, MA**

**Course Developer**

Responsibility included:

- Planned, developed and documented customer course for Office Automated products.

**Strategic Planner**

Responsibilities included:

- Developed and documented Corporate Education Center Training Skills Program for new hire Course Developers and Instructors.

1/80-12/83      **ROXBURY COMMUNITY COLLEGE**      **ROXBURY, MA**

**Mathematics Instructor**

- Taught courses in pre-calculus, basic and intermediate algebra, statistics, reading and study skills

Other activities included:

- Developed and conducted research project focusing on correlation between entering freshmen placement scores in mathematics and English and their first and second semester test scores.

- Assistant Director, Learning-to-Learn Program (6/80-9/80)

Trained and supervise staff; planned, developed and administered new curriculum.

Developed and wrote Programmed Skills for Basic Mathematics.

<b>EDUCATION</b>		
------------------	--	--

<b>1982</b>	<b>HARVARD UNIVERSITY GRADUATE SCHOOL OF EDUCATION</b>	<b>CAMBRIDGE, MA</b>
-------------	--	----------------------

Ed. M. Concentration in Administration, Planning and Social Policy.

**MWRA  
POSITION DESCRIPTION**

**POSITION:** Manager, Operations Administration

**DIVISION:** Operations

**BASIC PURPOSE:**

Directs, develops and implements division-level initiatives, strategies and policies in support of the Chief Operating Officer. Manages planning and implementation of major special projects related to administrative functions, efficiency improvement and MIS development.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Chief Operating Officer

**SUPERVISION EXERCISED:**

Exercises close supervision of assigned administrative support staff and contract management staff.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Directs the development, coordination and implementation of all Operations Division's procurement policies, strategies and initiatives.
- Directs development, coordination and implementation of all administrative policies and procedures associated with the Chief Operating Officer's office.
- Manages the Operations Division's responses to all Internal Audit Unit's compliance audits, to include sensitive matters requiring confidentiality.
- Prepares edits and manages the staff summary process for the Operations Division. Ensures the appropriate development, editing and tracking of all staff summaries.
- Functions as Security Liaison for Operations staff – Coordinates and approves all access profiles requests.
- Approves all critical need purchase order requests on behalf of the Chief Operating Officer.
- Reviews, edits and makes recommendations on all sole source and / or proprietary procurement initiatives.
- Coordinates all space planning issues for Operations Division staff in CNY.



- Edits and performs QA/QC review of all Operations Division Orange and Yellow Notebook submittals.
- Reviews and approves all MIS-related requests for CNY Operations staff.
- Oversees the Operations Division's utilization of the MWRA's Purchasing Card Program.
- Participates in a variety of employee and labor relations issues requiring access and exposure to confidential information. May participate in investigations as required. Interacts with Human Resources and Operations staff on issues affecting division policy and / or personnel and collective bargaining matters.
- Represents the Chief Operating Officer on various matters as assigned.
- Coordinates with Law Division on all public information requests.

**SECONDARY DUTIES:**

Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- A) A four- (4) year college program in public/business administration or a related field.; and
- B) Knowledge of administrative management, procurement policies and procedures, financial analysis and personnel administration as acquired through seven (7) to nine (9) years of related experience; or
- C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- A) Demonstrated effectiveness at facilitating major projects that involve coordinating with people across all levels of an organization.
- B) Understanding of conceptual issues related to development of computer systems.
- C) Excellent analytical, facilitation, oral and written communication skills.

**SPECIAL REQUIREMENTS:**

None.

**TOOLS AND EQUIPMENT USED:**

Office machines as normally associated, with the use of telephone, personal computer including word processing and other software, copy and fax machine.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to sit, talk or hear. The employees is regularly required to use hands to finger, handle, feel or operate objects, including office equipment, or controls and reach with hands and arms. The employee frequently is required to stand and walk.

There are no requirements that weight be lifted or force be exerted in the performance of this job. Specific vision abilities required by this job include close vision, and the ability to adjust focus.

**WORK ENVIRONMENT:**

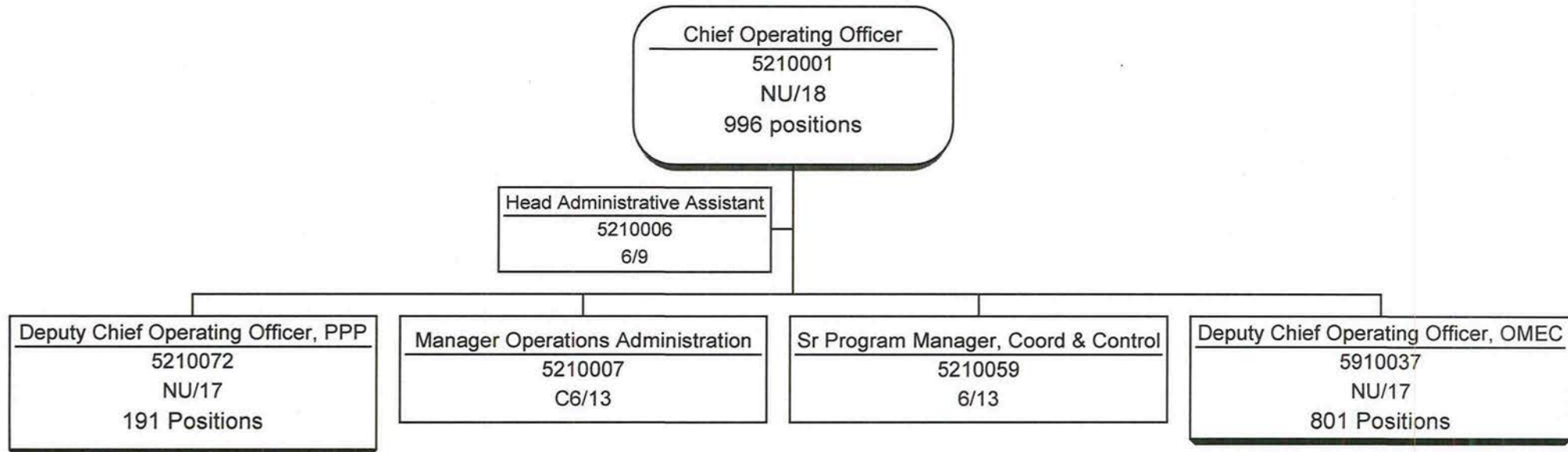
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee regularly works in an office environment.

The noise level in the work environment is usually a moderately quiet office setting.


**February 2016**

# Operations Division

May 2016



## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** May 11, 2016  
**SUBJECT:** Appointment of Network Administrator III, MIS Department

---

COMMITTEE: Personnel and Compensation

     INFORMATION  
  X   VOTE

Karen Gay-Valente, Director of Human Resources  
Russell J. Murray, Jr., MIS Director  
Preparer/Title

  
Michele S. Gillen  
Director, Administration

---

### RECOMMENDATION:

To approve the appointment of Mr. Feng Chen to the position of Network Administrator III (Unit 6, Grade 12), in the MIS Department, at the recommended salary of \$96,716.75 to be effective upon approval by the Executive Director.

### DISCUSSION:

The position of Network Administrator III, in the MIS Network & Systems Department, is responsible for managing and supporting the Authority's wide area and local area networks, in a multiple platform environment. This infrastructure of routers and switches provides network connectivity between 12 remote sites and the Chelsea Data Center providing connectivity to all MIS services such as Email, Lawson and Maximo. The wide area infrastructure supports global communications and Internet access. The position of Network Administrator III was vacated when the incumbent was promoted within the MIS Department. Organizationally, the Network Administrator III position will report to the MIS Network & Systems Manager.

### Selection Process System

This position was posted both internally and externally. A total of one internal and 17 external candidates applied. Five external applicants were determined to be qualified and were referred for interviews. Interviews were conducted by the Network & Systems Manager, the Technical Operations Manager, and the AACU Program Manager, Monitoring & Control. Upon completion of those interviews, Mr. Feng Chen was identified as the most qualified candidate to fill this position based on his combination of knowledge, skills, experience and education.

Mr. Chen has more than 10 years of experience in the IT field. Mr. Chen currently works at Steward Health Care as a Network Engineer. As a Network Engineer, he is responsible for the wireless infrastructure for 10 hospitals and more than 100 offices including infrastructure design and changes for all network connections to hospitals and doctors' offices throughout the region. Mr. Chen also has experience with data center networking.

Mr. Chen's credentials include a Bachelor's Degree in Computer Science with a minor in Business from the University of Massachusetts at Dartmouth. Mr. Chen also possesses two IT certifications: a Cisco Certified Network Associate in Routing and Switching (CCNA), and a Cisco Certified Network Professional in Routing and Switching (CCNP).

**BUDGET/FISCAL IMPACT:**

There are sufficient funds in the MIS Department FY16 Current Expense Budget to fund this position.

**ATTACHMENTS:**

Resume of Feng Chen  
Position Description  
Organizational Chart

---

TECHNICAL EXPERTISE

---

Strong Knowledge in Wireless. Routing Protocol/Switching. IPsec Tunnel. DMVPN. Load balancer, experienced working with service provider, cable contractor.

---

EXPERIENCE

---

**Network Engineer**

2011 to present

---

*Steward Health Care/ Data center, Dorchester, MA*

- Lead Engineer for the wireless infrastructure for 10 hospitals/100+ remote office statewide, Level 2 engineer to support Network Admin for hospitals
- Design network infrastructure for the new building/office within the health care system
- Provide network solution to System Engineer for server infrastructure.
- Deploy, upgrade and maintain routers, switches((Nexus7000,5596,2248) for Data Center
- Setup Nagios, Cacti, Nedi, Splunk to monitor the network devices.
- Create Visio diagrams for current/planned networks.
- Document network changes/problems
- Tier II troubleshoot network issues for doctor, nurse, vendor and patient.

**Network consultant**

2011

---

Project for a 100+ user business

- Redesigned and upgraded the business from Dell switch to Cisco gears(c3750/2960,ASA5510)
- Brought up two remote offices, connected them to the main office via VPN.

**Network Admin**

2008 to 2011

---

*Steward Health Care/St. Elizabeth Hospital, Brighton, MA*

- Deployed, upgraded, and maintained network closets in the hospital(80+ switches/200+APs)
- Managed wireless environment for the hospital
- Helped depts./office move from network side
- Provided network support for the PC technician

**PC Techs**

2005 to 2008

---

*Caritas Christi Health Care, Brighton, MA*

- Provided PC support to doctors and nurses
- Written a program in C# to help the team to scan and inventory the hospital computers

---

EDUCATION

---

**UMass Dartmouth**

2000 to 2005

*Dartmouth, MA*

- Bachelor degree of Computer Science and minor in Business
- 

CERTIFICATIONS

---

- Cisco CCNP exam(642-996) –Designing Cisco data Center Unified Fabric (11/2015)
- Cisco CCNP certification, 10/2012
- Cisco CCNA certification, 10/2009

**MWRA  
POSITION DESCRIPTION**

**POSITION:** Network Administrator III

**DEPARTMENT:** MIS

**DIVISION:** Administration & Finance

**BASIC PURPOSE:**

Responsible for development, configuration, implementation, and support of MWRA's Local and Wide Area Network solutions to meet MWRA's business goals and emerging industry standards.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Network & Systems Manager.

**SUPERVISION EXERCISED:**

Exercises project supervision of assigned vendor and contract resources, and may provide lead supervision to subordinate staff.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Develops plans and leads implementation of solutions in all areas of networking including LAN, WAN, and enterprise-wide Microsoft Network operating system solutions.
- Keeps abreast of the latest technologies and solutions, and provides expertise to the Network and System Manager for evaluation and selection of appropriate solutions.
- Setup and configures complex switching, routing, and VPN environment utilizing Cisco routing and switching technologies for the MWRA network.
- Maintains a multi-site network operations and troubleshoots malfunctions of network hardware and software to resolve operational issues and restore services.
- Maintains a thorough understanding of the basics behind the Internet and its workings (DNS, IP routing, HTTP, VPN, Email routing and filtering and Spam management).
- Provides proactive management of variety of network devices that includes Cisco routers and switches, SonicWALL, Juniper, Netscaler, Websense Web Filtering, Ironport eMail Gateway and hardware Technologies such as Data Domain, EMC and 3Par.



- Maximizes network performance by monitoring performance, troubleshooting network problems and outages, scheduling upgrades, and implementing solutions developed by Network Architect.
- Recommends appropriate tools required to measure network performance and capacity. Conducts Network monitoring and testing
- Identifies and troubleshoots Microsoft operating system issues as well as network problems to ensure stable and healthy systems and network.
- Develops and implements process and procedures, for system integration and migration. Performs system management functions, proactive monitoring, and performance tuning of enterprise wide Microsoft Operating systems.
- Tests and deploys system and network updates and security patches.
- Supports and maintains backup solution for assigned Microsoft systems and optimizes the available resources through management of backup jobs, bandwidth and hardware devices.
- Documents operating procedures to conform to MWRA standards.
- Manages assigned staff which may include supervising junior System and Network Administrators, or train and supporting junior staff.
- Leads vendor contact for assigned network products well as review of maintenance contracts.

**OTHER RESPONSIBILITIES:**

- Participates in occasional off-site travel, extended hours and weekend work.
- Shares in on-call and emergency response tasks.
- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

**Education and Experience:**

- (A) A four (4) year college degree in computer science or related field is required.
- (B) Seven (7) to nine (9) years of experience implementing and maintaining a large-scale enterprise network environment is required.

**Necessary Knowledge, Skills and Abilities:**

- (A) Technical knowledge of and demonstrated experience with: a large network (LANS, WANS

and VLAN); and CISCO network devices; Microsoft Network Operating System including NT-security, Active Directory, Domain models/trusts, NT Profiles, Registry Editor, WINS, IIS; Routing protocols (including BGP and OSPF); Remote access technologies (including VPN, SSL, IPsec, TCP/IP, SNMP Protocols, Browsers and Firewalls); DNS; DHCP; PCs; and HP Hardware products/technologies (such as RAID, SANs, NAS, and HP system Insight Manger, and fiber channel devices).

- (B) Proficiency with the following is required: Exchange e-mail system; e-mail filtering (Cisco Ironport or similar product); Virus Protection products and management solutions (McAfee, Symantec or similar products); Patch management solutions (Shavlik Netchkpro or similar product); Web filtering (Websense or similar product), Network Management products (Sniffer network analyzer and HP Open view or similar products); Enterprise Backup Solutions (EMC Networker or similar product) and Storage system administration and vSphere ESX/ESXi.
- (C) Experience with SONET, MPLS, Video Conferencing, QOS, cabling standard and Fiber Optics, is desirable.
- (D) Ability to diagnose effectively and interpret problems on a variety of Microsoft-NT and network devices.
- (E) Excellent technical project management, interpersonal, written and oral communication skills are required.

**SPECIAL REQUIREMENTS:**

Information Technology Infrastructure Library (ITIL) Foundation Certification is required, or the ability to obtain within 6 months.

A current MCSE certification and CISCO product certifications, or otherwise required to be obtained within 1 year.

**TOOLS AND EQUIPMENT USED:**

Mini-computer consoles, tape and disk storage systems, various network and peripheral devices and office equipment as normally associated with the use of telephone, personal computers including word processing and other software, copy and fax machines.

**PHYSICAL DEMANDS:**

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform essential functions.

While performing the duties of this job, the employee works is regularly required to use hands to

finger, handle, feel or operate objects, tools or controls and reach with hands and arms. The employee frequently is required to sit and talk or hear. The employee is occasionally required to walk; stand; climb or balance; stoop, kneel, crouch, or crawl; taste or smell.

The employee must frequently lift and/or move up to 25 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision and color vision, and the ability to adjust focus.

**WORK ENVIRONMENT:**

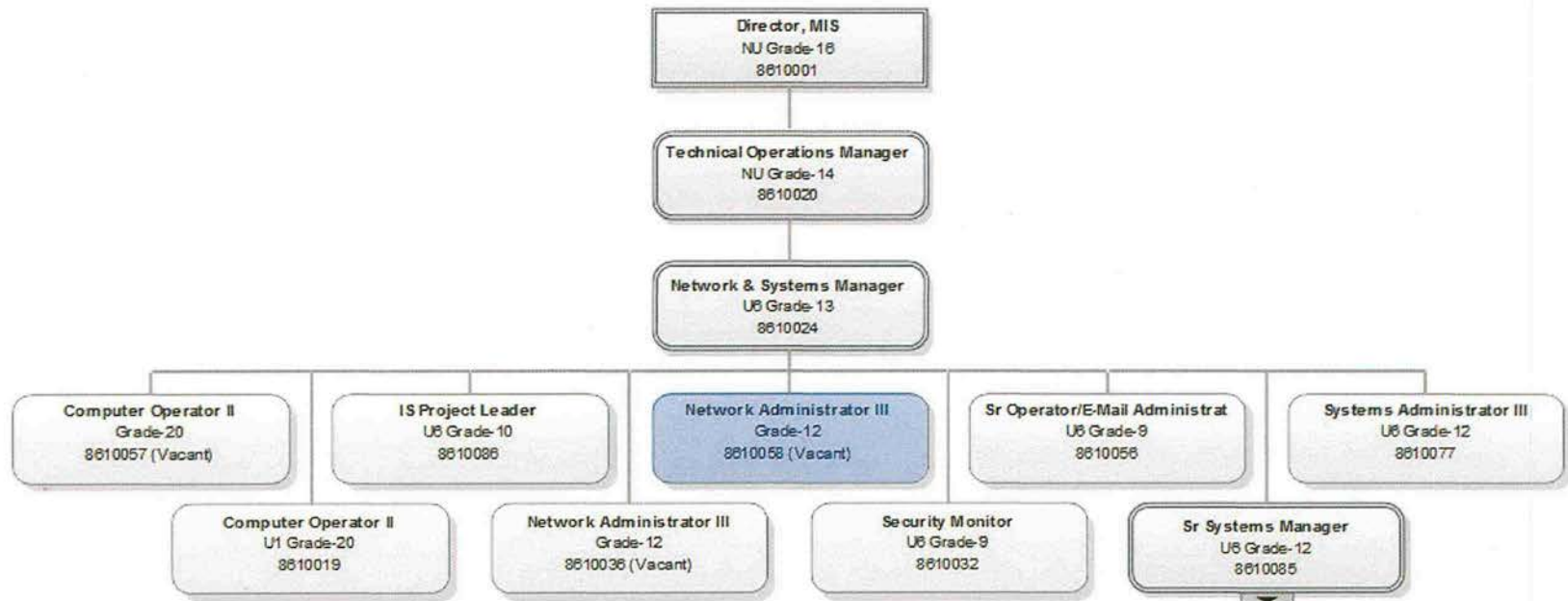
The work characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee works in a computer center, network closets and occasionally works in various field settings. The employee regularly works near moving mechanical parts, and is occasionally exposed to risk of vibration and electromagnetic radiation. The employee is occasionally exposed to risk of electrical shock. The Computer Center also uses automatically discharging chemicals to suppress fire.


The noise level in the work environment is a moderately loud office setting.

**January 2015**

# MIS Department Position Hierarchy




### STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** May 11, 2016  
**SUBJECT:** Authority Accountability and Transparency Act Compliance

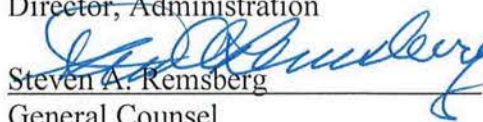
---

COMMITTEE: Personnel and Compensation

X  INFORMATION  
  VOTE

  
Michele S. Gillen  
Director, Administration

Karen Gay-Valente, Director, Human Resources  
Preparer/Title

  
Steven A. Remsberg  
General Counsel

---

*As required by the 2011 Authority Accountability and Transparency Act, the Personnel and Compensation Committee must meet independently of management at least once a year to establish and evaluate executive compensation, and analyze and assess comparable compensation for positions with similar functions and responsibilities at state agencies and authorities, and for-profit and non-profit private sector employers. This meeting will occur at the end of the May 11, 2016 Personnel and Compensation meeting. Analyses of comparable salaries are attached to facilitate the Committee's review.*

#### RECOMMENDATION:

For information only.

#### DISCUSSION:

The Authority Accountability and Transparency Act (G.L. c. 29, §29K) became law in July 2011 and required the Executive Office for Administration and Finance (A&F) to adopt regulations governing accountability and transparency for state authorities. As applicable to MWRA, the statute requires the Board to review executive compensation based on an analysis of comparable public and private-sector compensation; and to prepare an annual report of all Authority expenditures including disclosure of salaries of highly compensated employees who earn more than the Governor's salary. It also prohibits the Commonwealth from subsidizing the health insurance, pension, and other post-employment benefits of employees and retirees of authorities that participate in the state retirement system or the Group Insurance Commission. A&F filed interim emergency regulations in July 2011, and in 2013, A&F promulgated the permanent regulation.

The final regulation:

- Defines the statutory term "executive" as the authority's chief executive officer, chief financial

officer, general counsel and others as determined by the authority's compensation committee.

- Defines “highly compensated employees,” whose compensation is reported in the annual financial report, as those whose salary exceeds that of the Governor.
- Defines “meet independently of management” to exclude authority managers from statutorily required meetings of the authority's audit and compensation committees.
- Implements the benefits anti-subsidy statute, by requiring each state authority that participates in the state retirement system or the Group Insurance Commission to:
  - contribute the employer share of the cost attributable to that authority of the state retirement system (as determined by the PERAC actuary), and of the state group insurance system (as determined by the GIC);
  - be responsible for the full actuarial value of its liabilities as determined no less often than every 3 years by PERAC and the GIC after consulting A&F, the state Treasurer, and the State Board of Retirement.

At the April 2012 meeting, the Board took several steps in order to comply with the Transparency Act and the emergency regulations: the Board created the Administration, Finance and Audit Committee, as well as the Personnel and Compensation Committee; made adjustments to the sick leave buy back for executives; and made certain minor adjustments to existing employment contracts. At the April 2012, May 2013, May 2014 and May 2015 meetings, the Personnel and Compensation Committee met independently of management as required by the regulations. As a result of these actions, MWRA is in compliance with the permanent regulations and Transparency Act. Neither MWRA Board members nor the Administration, Finance and Audit Committee are required to meet independently with respect to the audited financials of the Authority because the statute carves out an exception for state authorities that are otherwise required to retain an outside independent audit firm.

In order to remain in compliance with the statute's requirements, staff recommends that the Personnel and Compensation Committee meet independently of management at this meeting. In order to facilitate the committee's review, comparable salaries analyses are included with this staff summary.

#### **BUDGET/FISCAL IMPACT:**

The passage and implementation of section 29K of chapter 29 of the General Laws will not have any impact upon either the FY16 CEB or CIP.

#### **ATTACHMENTS:**

- |               |  |
|---------------|--|
| Attachment A: | Summary of Compensation Data for State Agencies, Authorities, Non-Profit Organizations and Private Companies |
| Attachment B: | Survey of Comparable National Water/Wastewater Utilities   |
| Attachment C: | American Water Works Association – 2015 Water Utility Survey   |

Attachment A

Summary of Compensation Data for State Agencies, Authorities, Non-Profit and Private Companies

March 2016

<b>MWRA Position:</b>		<b>Executive Director</b>		
<b>Organization</b>	<b>Sector</b>	<b>Title</b>	<b>Reporting Period</b>	<b>Annual Salary</b>
Eversource Energy	Private Utility	President and CEO	2015	\$1,232,250
Citizens Energy, Inc.	Non-Profit	President and CEO	2014	\$635,283
Boston Foundation, Inc.	Non-Profit	President and CEO	2014	\$447,912
City Year, Inc.	Non-Profit	President and Co-Founder	2014	\$368,712
Mass Port Authority	Quasi Public	Chief Executive Officer	2016	\$272,572
Greater Boston Food Bank, Inc.	Non-Profit	President and CEO	2015	\$240,609
Mass Convention Center Authority	Quasi Public	Executive Director	2016	\$240,011
Mass Housing Partnership	Quasi Public	Executive Director	2016	\$228,400
Mass Health Insurance Authority	Quasi Public	Executive Director	2016	\$223,000
MWRA	Quasi Public	Executive Director	2016	\$180,957
MBTA	State	General Manager	2016	\$180,050
Conservation Law Foundation	Non-Profit	President	2014	\$170,000
Commonwealth of Massachusetts	State	Governor	2016	\$151,800
Save the Harbor/Save the Bay	Non-Profit	President	2014	\$150,574
Commonwealth of Massachusetts	State	State Auditor	2016	\$134,952
Commonwealth of Massachusetts	State	Secretary of State	2016	\$130,916
Commonwealth of Massachusetts	State	Attorney General	2016	\$130,582
Boston Harbor Association	Non-Profit	President	2014	\$129,000
Commonwealth of Massachusetts	State	Treasurer	2016	\$127,917

## Attachment A

## Summary of Compensation Data for State Agencies, Authorities, Non-Profit and Private Companies

March 2016

<b>MWRA Position:</b>		<b>Chief Operating Officer</b>		
<b>Organization</b>	<b>Sector</b>	<b>Title</b>	<b>Reporting Period</b>	<b>Annual Salary</b>
Eversource Energy	Private Utility	Executive Vice President/COO	2015	\$600,000
Citizens Energy, Inc.	Non-Profit	Chief Operating Officer	2014	\$474,913
City Year, Inc.	Non-Profit	President (#2 Position)	2014	\$291,200
Mass Port Authority	Quasi Public	Director, Capitol Programs & Environmental Affairs	2016	\$245,236
Mass Health Insurance Authority	Quasi Public	Deputy Executive Director and COO	2016	\$195,000
Greater Boston Food Bank, Inc.	Non-Profit	Chief Operating Officer	2015	\$186,939
Mass Housing Partnership	Quasi Public	Managing Director	2016	\$184,100
MWRA	Quasi Public	Chief Operating Officer	2016	\$172,722
MBTA	State	Chief Operating Officer	2016	\$165,000

<b>MWRA Position:</b>		<b>Director, Finance</b>		
<b>Organization</b>	<b>Sector</b>	<b>Title</b>	<b>Reporting Period</b>	<b>Annual Salary</b>
Eversource Energy	Private Utility	Executive Vice President & CFO	2015	\$605,650
Citizens Energy, Inc.	Non-Profit	CFO	2014	\$349,760
Mass Port Authority	Quasi Public	Director, Admin & Finance/Sec-Treasurer	2016	\$239,326
Boston Foundation, Inc.	Non-Profit	Chief Financial Officer/Treasurer	2014	\$231,577
City Year, Inc.	Non-Profit	Chief Financial and Admin Officer	2014	\$216,120
Mass Housing Partnership	Quasi Public	Chief Finance & Admin Officer	2016	\$171,000
Greater Boston Food Bank, Inc.	Non-Profit	Chief Financial Officer	2015	\$160,603
Mass Convention Center Authority	Quasi Public	Chief Financial Officer	2016	\$159,973
MWRA	Quasi Public	Director, Finance	2016	\$154,534



Attachment A

Summary of Compensation Data for State Agencies, Authorities, Non-Profit and Private Companies

March 2016

MWRA Position:		General Counsel		
Organization	Sector	Title	Reporting Period	Annual Salary
Eversource Energy	Private Utility	General Counsel	2015	\$474,992
Mass Port Authority	Quasi Public	Chief Legal Counsel	2016	\$206,000
Mass Housing Partnership	Quasi Public	Deputy Director & General Counsel	2016	\$188,600
Mass Health Insurance Authority	Quasi Public	General Counsel	2016	\$180,890
Mass Convention Center Authority	Quasi Public	General Counsel	2016	\$170,019
MBTA	State	General Counsel	2016	\$158,100
MWRA	Quasi Public	General Counsel	2016	\$152,796
Conservation Law Foundation	Non-Profit	Sr Counsel	2014	\$116,767

Attachment B  
 MWRA Survey of Comparable National Water/Wastewater  
 Utilities - March 2016

Executive Director										
Organization	Location	Operating Budget	# Employees	Population Served	Title	Base Salary	Car Allowance	Deferred Comp	2015 Bonuses	Employment Contract
Fairfax Water	Fairfax, Virginia	\$140 Million	434	1.7 million	General Manager	\$270,000	\$5,353	\$24,000		No
Metropolitan Water District of Southern California	Los Angeles, Ca	1.93 billion	1,809	19 million	General Manager	\$362,627	car provided	\$11,700		Yes
Washington Suburban Sanitary Commission	Laurel, MD	715.2 million	1,602	1.8 million	General Manager/CEO	\$255,000	\$8,000			Yes
Seattle Public Utilities	Seattle, WA	925 million	1,332	1.3 million	Director	\$209,387				No
East Bay Municipal Utility District	Oakland, Ca	\$348.8 Million	1,820	1.3 Million	General Manager	\$281,040	\$6,000	\$24,000		Yes
					<b>Average Salary</b>	<b>\$275,611</b>				
MWRA					Executive Director	\$180,957	\$8,400			Yes

Chief Operating Officer										
Organization	Location	Operating Budget	# Employees	Population Served	Title	Base Salary	Car Allowance	Deferred Comp	2015 Bonuses	Employment Contract
Fairfax Water	Fairfax, Virginia	\$140 Million	434	1.7 million	Deputy General Manager	\$235,000	\$5,325	\$24,000		Yes
Metropolitan Water District of Southern California	Los Angeles, Ca	1.93 billion	1,809	19 million	Assistant GM/ Chief Operating Officer	\$279,427	car provided	\$11,700		No
Washington Suburban Sanitary Commission	Laurel, MD	715.2 million	1,602	1.8 million	Chief of Plant Operations	\$163,950			\$5,850	Yes
Seattle Public Utilities	Seattle, WA	925 million	1,332	1.3 million	Deputy Director, Field Ops & Maint.	\$182,065				No
East Bay Municipal Utility District	Oakland, Ca	\$348.8 Million	1,820	1.3 Million	No Match					
					<b>Average Salary</b>	<b>\$215,111</b>				
MWRA					Chief Operating Officer	\$172,722	\$8,400			Yes

General Counsel										
Organization	Location	Operating Budget	# Employees	Population Served	Title	Base Salary	Car Allowance	Deferred Comp	2015 Bonuses	Employment Contract
Fairfax Water	Fairfax, Virginia	\$140 Million	434	1.7 million	No Match					
Metropolitan Water District of Southern California	Los Angeles, Ca	1.93 billion	1,809	19 million	General Counsel	\$266,968	\$7,200	\$11,700		Yes
Washington Suburban Sanitary Commission	Laurel, MD	715.2 million	1,602	1.8 million	General Counsel	\$191,651	\$8,000		\$24,990	Yes
Seattle Public Utilities	Seattle, WA	925 million	1,332	1.3 million	No Match (use city legal services)					
East Bay Municipal Utility District	Oakland, Ca	\$348.8 Million	1,820	1.3 Million	General Counsel	\$236,220			\$8,628	Yes
					<b>Average Salary</b>	<b>\$231,613</b>				
MWRA					General Counsel	\$154,534				No

Director Finance										
Organization	Location	Operating Budget	# Employees	Population Served	Title	Base Salary	Car Allowance	Deferred Comp	2015 Bonuses	Employment Contract
Fairfax Water	Fairfax, Virginia	\$140 Million	434	1.7 million	Director, Finance	\$199,566				No
Metropolitan Water District of Southern California	Los Angeles, Ca	1.93 billion	1,809	19 million	Assistant GM/Chief Financial Officer	\$279,427	\$7,200	\$11,700		No
Washington Suburban Sanitary Commission	Laurel, MD	715.2 million	1,602	1.8 million	Chief Financial Officer	\$187,180				Yes
Seattle Public Utilities	Seattle, WA	925 million	1,331	1.3 million	Deputy Director, Finance & Admin	\$172,001				No
East Bay Municipal Utility District	Oakland, Ca	\$348.8 Million	1,820	1.3 Million	Director, Finance	\$171,612				Yes
					<b>Average Salary</b>	<b>\$201,957</b>				
MWRA					Director, Finance	\$152,796				No

<b>Survey Position:</b>	<b>Top Executive</b>				
<b>MWRA Position:</b>	<b>Executive Director</b>				
<b>Survey Scope:</b>	All utilities serving a population in excess of 1,000,000				
	<b># of Utilities</b>	<b># of Employees</b>	<b>50th Percentile Salary</b>	<b>Average Salary</b>	<b>MWRA Salary</b>
	24	24	\$197,107	\$209,358	\$180,957
<b>Survey Scope:</b>	All water utilities serving a population in excess of 1,000,000				
	<b># of Utilities</b>	<b># of Employees</b>	<b>50th Percentile Salary</b>	<b>Average Salary</b>	<b>MWRA Salary</b>
	10	10	\$237,505	\$229,468	\$180,957
<b>Survey Scope:</b>	All water/wastewater utilities serving a population in excess of 1,000,000				
	<b># of Utilities</b>	<b># of Employees</b>	<b>50th Percentile Salary</b>	<b>Average Salary</b>	<b>MWRA Salary</b>
	14	14	\$190,479	\$194,993	\$180,957

<b>Survey Position:</b>	<b>Top Operations and Maintenance Executive</b>				
<b>MWRA Position:</b>	<b>Chief Operating Officer</b>				
<b>Survey Scope:</b>	All utilities serving a population in excess of 1,000,000				
	<b># of Utilities</b>	<b># of Employees</b>	<b>50th Percentile Salary</b>	<b>Average Salary</b>	<b>MWRA Salary</b>
	18	19	\$146,099	\$164,310	\$172,722
<b>Survey Scope:</b>	All water utilities serving a population in excess of 1,000,000				
	<b># of Utilities</b>	<b># of Employees</b>	<b>50th Percentile Salary</b>	<b>Average Salary</b>	<b>MWRA Salary</b>
	8	7	\$200,923	\$193,158	\$172,722
<b>Survey Scope:</b>	All water/wastewater utilities serving a population in excess of 1,000,000				
	<b># of Utilities</b>	<b># of Employees</b>	<b>50th Percentile Salary</b>	<b>Average Salary</b>	<b>MWRA Salary</b>
	10	12	\$142,828	\$144,117	\$172,722

<b>Survey Position:</b>	<b>Top Finance Executive</b>				
<b>MWRA Position:</b>	<b>Director, Finance</b>				
<b>Survey Scope:</b>	All utilities serving a population in excess of 1,000,000				
	<b># of Utilities</b>	<b># of Employees</b>	<b>50th Percentile Salary</b>	<b>Average Salary</b>	<b>MWRA Salary</b>
	23	21	\$150,000	\$157,565	\$154,534
<b>Survey Scope:</b>	All water utilities serving a population in excess of 1,000,000				
	<b># of Utilities</b>	<b># of Employees</b>	<b>50th Percentile Salary</b>	<b>Average Salary</b>	<b>MWRA Salary</b>
	10	9	\$177,346	\$177,841	\$154,534
<b>Survey Scope:</b>	All water/wastewater utilities serving a population in excess of 1,000,000				
	<b># of Utilities</b>	<b># of Employees</b>	<b>50th Percentile Salary</b>	<b>Average Salary</b>	<b>MWRA Salary</b>
	13	12	\$136,701	\$142,357	\$154,534

<b>Survey Position:</b>	<b>Top Legal Executive</b>				
<b>MWRA Position:</b>	<b>General Counsel</b>				
<b>Survey Scope:</b>	All utilities serving a population in excess of 1,000,000				
	<b># of Utilities</b>	<b># of Employees</b>	<b>50th Percentile Salary</b>	<b>Average Salary</b>	<b>MWRA Salary</b>
	13	11	\$180,840	\$181,905	\$152,796
<b>Survey Scope:</b>	All water utilities serving a population in excess of 1,000,000				
	<b># of Utilities</b>	<b># of Employees</b>	<b>50th Percentile Salary</b>	<b>Average Salary</b>	<b>MWRA Salary</b>
	7	6	\$236,682	\$214,636	\$152,796
<b>Survey Scope:</b>	All water/wastewater utilities serving a population in excess of 1,000,000				
	<b># of Utilities</b>	<b># of Employees</b>	<b>50th Percentile Salary</b>	<b>Average Salary</b>	<b>MWRA Salary</b>
	6	5	\$148,313	\$142,628	\$152,796



# MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard  
100 First Avenue, Building 39  
Boston, MA 02129

Frederick A. Laskey  
Executive Director

Telephone: (617) 242-6000  
Fax: (617) 788-4899  
TTY: (617) 788-4971

## REVISED

### BOARD OF DIRECTORS' MEETING

to be held on

Wednesday, May 11, 2016

Location: 100 First Avenue, 2nd Floor  
Charlestown Navy Yard  
Boston, MA 02129

Time: 1:00 p.m.

## AGENDA

### I. APPROVAL OF MINUTES

### II. REPORT OF THE CHAIR

### III. REPORT OF THE EXECUTIVE DIRECTOR

### IV. BOARD ACTIONS

#### A. Approvals

1. Bond Defeasance of Future Debt Service (ref. AF&A B.1)
2. Memorandum of Agreement with the Town of Stoneham in Connection with the Northern Intermediate High Pipeline Project (ref. AF&A B.2)
3. Approval of a Program to Study Lead levels in MWRA Water Communities (ref. W A.1)
4. Approval of Program Guidelines for the MWRA Lead Service Line Replacement Loan Program (ref. W A.2)
5. Approval of Revisions to the Program Guidelines for the MWRA Local Water System Assistance Program to be consistent with the Lead Service Line Replacement Loan Program Guidelines (ref. W A.3)

6. PCR Amendments – May 2016 (ref. P&C A.1)
7. Appointment of Manager, Operations Administration (ref. P&C A.2)
8. Appointment of Network Administrator III, MIS (ref. P&C A.3)

**B. Contract Awards**

1. Arbitrage Rebate Calculation Services: Contract F240, PFM Asset Management LLC (ref. AF&A C.1)
2. Clinton Wastewater Treatment Plant - Commercial Gas Service/Main Agreement with National Grid: Contract 7528 (ref. WW B.1)
3. Flow Testing Services for MWRA's Revenue Water Meters: Complete Control Services, Inc., Bid WRA-4181 (ref. W B.1)
4. Beacon Street Line Water Pipeline Repair: R. Zoppo Corp., Contract 7458 (ref. W B.2)
5. Southern Extra High Pipeline Section 111 (Boston): P. Gioioso and Sons, Inc., Contract 6454 (ref. W B.3)

**C. Contract Amendments/Change Orders**

1. Nut Island Emergency Demolition and Duct Cleaning: Daniel O'Connell's Sons, Contract OP-320, Change Order 2 (ref. WW C.1)
2. Dam Safety Compliance and Consulting Services: GZA GeoEnvironmental, Inc., Contract OP-228, Amendment 2 (ref. W C.1)
3. Section 4 Webster Avenue Pipe and Utility Bridge Replacement: NEL Corporation, Contract 7335, Change Order 5 (ref. W C.2)

**V. CORRESPONDENCE TO THE BOARD**

**VI. OTHER BUSINESS**

**VII. EXECUTIVE SESSION**

**A. Real Estate**

1. Watershed Land Acquisition Approval

**B. Litigation**

1. Cross Harbor Cable – MA DPU Proceedings: Increase in Professional Services Budgets for Outside Counsel and Expert Witness

**VIII. ADJOURNMENT**

**Meeting of the Board of Directors****April 13, 2016**

A meeting of the Board of Directors of the Massachusetts Water Resources Authority was held on April 13, 2016 at the Authority headquarters in Charlestown. Vice-Chair Carroll presided. Present from the Board were Ms. Wolowicz and Messrs. Blackmon, Cotter, Flanagan, Foti, Pappastergion, Peña, Vitale and Walsh; Mr. Beaton was absent. Among those present from the Authority staff were Frederick Laskey, Executive Director, Steven Remsberg, General Counsel, Michael Hornbrook, Chief Operating Officer, Thomas Durkin, Director of Finance, Michele Gillen, Director of Administration, and Bonnie Hale, Assistant Secretary. The meeting was called to order at 1:05 p.m.

**APPROVAL OF MINUTES**

Upon a motion duly made and seconded, it was

Voted to approve the minutes of the March 16, 2016 Board of Directors' meeting, as presented and filed with the records of the meeting.

**REPORT OF THE EXECUTIVE DIRECTOR**

Mr. Laskey reported on various matters, including: EPA will be issuing MS4 general permits; MWRA will be receiving from DEP an award for excellent performance by a public water system; the annual meeting of the Personnel and Compensation Committee independent of management is planned for May 11, 2016; the groundbreaking for the new fish hatchery pipeline is planned for April 27, 2016 at 11:00; Board members' receipt of a replica of the plaque to be placed at the new Spot Pond Covered Storage Tank; and that a dedicated off-site meeting to consider Metropolitan Water Tunnel Redundancy options is

proposed to be held at MIT Endicott House in Dedham and Board members will be polled to try to find a date convenient for everyone.

BOARD ACTIONS

APPROVALS

Amendment to the Seventy-Second Supplemental Resolution

Upon a motion duly made and seconded, it was

Voted to adopt an amendment to the Seventy-Second Supplemental Resolution authorizing the issuance of up to \$785,000,000 of Massachusetts Water Resources Authority General Revenue Bonds and Massachusetts Water Resources Authority General Revenue Refunding Bonds and the supporting Issuance Resolution.

PCR Amendments – April 2016

Upon a motion duly made and seconded, it was

Voted to approve amendments to the Position Control Register, as presented and filed with the records of the meeting.

Appointment of Manager, Process Control, DITP

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Ms. Lisa Wong to the position of Manager, Process Control (Non-Union, Grade 14), Deer Island Treatment Plant, at an annual salary of \$122,967.47, to be effective on the date designated by the Executive Director.

Appointment of Senior Program Manager, Engineering Services Dept., DITP

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. Raymond W. Snyder, P.E. to the position of Senior Program Manager (Unit 9, Grade



30) in the Engineering Services Department, Deer Island Treatment Plant, at the annual salary of \$109,845.31, to be effective on the date designated by the Executive Director

Appointment of Assistant Finance Manager

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. Christopher Lam to the position of Assistant Finance Manager, Finance Division (Unit 6, Grade 11) at an annual salary of \$95,195.15 to be effective on the date designated by the Executive Director.

Appointment of Budget Manager

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Ms. Louise Miller to the position of Budget Manager, Finance Division (Non-Union, Grade 14) at an annual salary of \$117,200 to be effective on the date designated by the Executive Director.

CONTRACT AWARDS

Accounts Payable and Payroll Depository Services: Century Bank and Trust Company, Contract F239

Upon a motion duly made and seconded, it was

Voted to approve the recommendation of the Consultant Selection Committee to select Century Bank and Trust Company, to provide accounts payable and payroll depository services and to authorize the Executive Director, on behalf of the Authority, to execute and deliver Contract F239 in an amount not to exceed \$89,875 for a term of 50 months from May 1, 2016 to June 30, 2020.

Groundskeeping Services – Metropolitan Boston C&W Facility Services, Inc., Contract OP-315

Upon a motion duly made and seconded, it was

Voted to approve the award of Contract OP-315, Groundskeeping Services - Metropolitan Boston, to the lowest eligible and responsible bidder, C&W Facility Services, Inc., and authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$375,911.06 for a term of 730 calendar days from the Notice to Proceed.

Preferred Service Agreement for the Combustion Turbine Generators at the Deer Island Treatment Plant: PW Power Systems, Inc.

Upon a motion duly made and seconded, it was

Voted to approve the award of a Preferred Service Agreement to provide technical support, emergency repair services, and spare parts for the combustion turbine generators at the Deer Island Treatment Plant to the original equipment manufacturer, PW Power Systems, Inc. (formerly Pratt & Whitney), and to authorize the Executive Director, on behalf of the Authority, to execute and deliver said contract in an amount not to exceed \$438,316 for a period of three years.

Thermal and Hydro Power Plant Maintenance, Deer Island Treatment Plant: IPC Lydon, LLC, Contract S551

Upon a motion duly made and seconded, it was

Voted to approve the award of Contract S551, Thermal and Hydro Power Plant Maintenance, Deer Island Treatment Plant, to the lowest responsible and eligible bidder, IPC Lydon, LLC, and to authorize the Executive Director, on behalf of the Authority, to execute and deliver said contract in the bid amount of \$4,207,464 for a term of 730 calendar days from the Notice to Proceed.

Winthrop Terminal VFD and Synchronous Motor Replacement, Deer Island Treatment Plant: J. F. White Contracting Co., Contract 6875

Upon a motion duly made and seconded, it was

Voted to approve the award of Contract 6875, Winthrop Terminal VFD and Synchronous Motor Replacement, Deer Island Treatment Plant, to the lowest eligible and responsible bidder, J.F. White Contracting Company, and to authorize the Executive Director, on behalf of the Authority, to execute and deliver said contract in the bid amount of \$11,945,000, for a term of 1,365 calendar days from the Notice to Proceed.

CONTRACT AMENDMENTS/CHANGE ORDERS

Southborough Water Quality Laboratory Upgrades: Paul J. Rogan Co., Inc., Contract 6650A, Change Order 3

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to approve Change Order 3 to Contract 6650A, Southborough Water Quality Laboratory Upgrades, with Paul J. Rogan Co., Inc., for a lump sum amount of \$26,999.82; and to authorize the Executive Director to approve additional change orders as may be needed to Contract 6650A in amounts not to exceed the aggregate of \$250,000, in accordance with the Management Policies and Procedures of the Board of Directors.

OTHER BUSINESS – Analysis of Proposal to Reclassify Employees to Group 2 for Retirement

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director to communicate with the legislature at appropriate times to advise it of the impacts of House Bill 2249 upon MWRA ratepayers and MWRA operations.

Mr. Cotter requested that the Executive Director communicate to Local 168 the Board of Directors' reasons for taking the above vote after analyzing the financial ramifications.

EXECUTIVE SESSION

It was moved to enter executive session for the purpose of discussing real estate.

Upon a motion duly made and seconded, it was, upon a roll call vote in which the members were recorded as follows:

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Blackmon		
Cotter		
Flanagan		
Foti		
Pappastergion		
Peña		
Vitale		
Walsh		
Wolowicz		
Carroll		

DRAFT

Voted to enter executive session for the purpose of discussing the purchase, exchange, lease or value of real property, in that such discussion in open session may have a detrimental effect on the negotiating position of the Authority.

It was stated that the meeting would return to open session solely for the consideration of adjournment.

\* \* \* \*

EXECUTIVE SESSION

\* \* \* \*

The meeting returned to open session at 1:35 p.m. and adjourned.