MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard
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Boston, MA 02129

Frederick A. Laskey
Executive Director

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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, November 16, 2016

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

Time: 10:00 a.m.

AGENDA

A. Information

1. MWRA's Climate Change Strategy – Energy Initiatives
2. First Quarter FY17 Orange Notebook
3. Delegated Authority Report – October 2016
4. FY17 Financial Update and Summary – October 2016
5. Historical Overtime Spending Trends for MWRA

B. Approvals

1. Approval of the Seventy-Fourth Supplemental Bond Resolution

C. Contract Awards

1. Security Equipment Maintenance and Repair Services: Viscom Systems, Inc., Contract EXE-038

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the
Administration, Finance and Audit Committee

October 12, 2016

A meeting of the Administration, Finance and Audit Committee was held on October 12, 2016 at the Authority headquarters in Charlestown. Chairman Vitale presided. Present from the Board were Ms. Wolowicz and Messrs. Blackmon, Carroll, Foti, Pappastergion, Peña and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Michele Gillen, Mike Hornbrook, Carolyn Francisco Murphy, Russ Murray, Tom Durkin, Kathy Soni, Matt Horan, John Vetere, Kristin Patneaude, Bob Donnelly, Carolyn Fiore, Karen Gay-Valente, Emily Dallman and Bonnie Hale. The meeting was called to order at 10:10 a.m.

Information

Delegated Authority Report - September 2016

There was question and answer on a couple of items contained in the report.

FY17 Year-to-Date September Financial Update and Summary

Staff summarized the financial update and there was general discussion and question and answer.

Approvals

*Delegation of Authority to Execute a Contract for the Purchase and Supply of Electric Power for MWRA's Profile Accounts

The Committee recommended approval of the delegation of authority (ref. agenda item B.1).

Contract Awards

*Automated Vehicle Locator (AVL) Tracking System: Networkfleet, Inc. Contract A606

Staff described the features and performance of the Authority's first AVL system installed in 2013, the procurement for the successor contract, and enhancements to the system being proposed by the recommended firm. There was general discussion and question and answer. The Committee recommended approval of the contact award (ref. agenda item B.1).

* Approved as recommended at October 12, 2016 Board of Directors meeting.

Contract Amendments/Change Orders

*Dental Insurance: Delta Dental of Massachusetts, Contract A591, Amendment 3

There was general discussion and question and answer. Mr. Walsh referred to a dental insurance comparison report prepared by former Finance Director Rachel Madden, and asked for a copy of it. The Committee recommended approval of Amendment 3 (ref. agenda item D.1).

The meeting adjourned at 11:05 a.m.

* Approved as recommended at October 12, 2016 Board of Directors meeting.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: November 16, 2016
SUBJECT: MWRA's Climate Change Strategy- Energy Initiatives

COMMITTEE: Administration, Finance & Audit

X INFORMATION
____ VOTE

Carolyn Fiore, Deputy Chief Operating Officer
Lise Marx, Senior Program Manager
Daniel Nvule, Senior Program Manager
Stephen Estes-Smargiassi, Director, Planning
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

Both the Commonwealth and the City of Boston have issued comprehensive Climate Change strategies to ensure that agencies are taking measures to mitigate and reduce greenhouse gas emissions, and building resilience and adaptation to the impacts of climate change.

This staff summary describes MWRA's considerable progress in renewable energy initiatives, improving energy efficiency, and reducing greenhouse gas emissions. For the December Board meeting, a staff summary will be prepared detailing MWRA's efforts in adapting to the impacts of climate change and sea level rise.

RECOMMENDATION:

For information only. Staff will also provide a PowerPoint presentation at this meeting.

DISCUSSION:

Over the past several years, MWRA has implemented a system-wide program to utilize more renewable energy sources, reduce dependence on the grid, and improve our carbon footprint. These initiatives have been launched and completed without compromising MWRA's core mission of providing reliable and high quality water and sewer services. Highlights of MWRA's broad energy program include:

- At the Deer Island Wastewater Treatment Plant, which is the second largest in the US, over 60% of the energy used (both electricity and heat) comes from renewable energy sources, including wind, solar, hydroelectric, as well as electricity and heat generated from methane produced by digesting wastewater sludge.

- Since the optimization of the back pressure steam turbine generator at Deer Island, typically 28% of the electricity used at the Plant comes from on-site renewable sources.

- Agency-wide, green power production increased from 45.9 million kWh in calendar year 2006 to 60.3 million kWh in 2015, an increase of 31.3 percent.

- Energy audits have been conducted at 38 of MWRA's facilities.

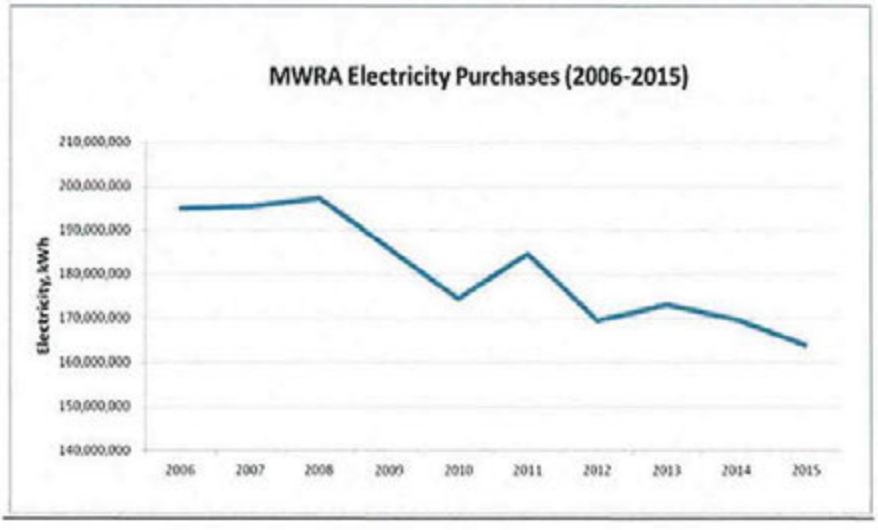
- Since FY14, MWRA has received approximately $1.8 million and is currently eligible for an additional $800,000 in incentives from electric and gas utilities, for over 40 energy efficiency projects.

- Agency-wide, as a result of efficiency improvements and increases in green energy production, purchases of electricity decreased almost 31 million KWh from 2006 to 2015, a reduction of 16 percent.

- In 2015, MWRA completed a comprehensive inventory of green house gas (GHG) emissions. 2006 was used as the base year of the study and from 2006 to 2014, GHG emissions from MWRA operations decreased by 29 percent, due to increased green energy production, improvements in energy efficiency and the gradual greening of the region's energy electrical power production.

Improved Energy Efficiency

Overall, MWRA has seen a net reduction of 16 percent (about 31.5 million KWh) in electricity purchases between 2006 and 2015. This is partly due to increases in renewable electricity production as discussed above and energy efficiency improvements made throughout the MWRA system, and offset by increases in energy use at facilities which have seen functional upgrades requiring new energy demands, such as improved CSO capture and the addition of UV disinfection to the Carroll Water Treatment Plant and the Brutsch Water Treatment Facility. The graph below shows the electricity purchase trend during this time.



Using both MWRA resources, and whenever available, free or reduced cost assistance from power suppliers, MWRA has conducted energy audits at 38 facilities over the past 8 years, in some cases returning several years later as improved technologies offered new opportunities for savings.

Some examples of actions undertaken by MWRA to improve efficiency include:

- Installation of new Dissolved Oxygen probes and control panels at Deer Island's secondary treatment train enabled 9.2 million kWh annual savings in electricity and $830,000 dollars annually with no impact to effluent quality or secondary capacity.

- Installation of Energy Management Systems in the Chelsea Administration and Maintenance Buildings, Southborough Administration Building, Charlestown Navy Yard Offices, and the Brutsch Water Treatment Facility allows MWRA to centralize control of each building's HVAC system components including: thermostats, heat pumps, cooling tower, boilers, and domestic hot water heaters to allow temperature setback at night and on weekends and holidays, outdoor air reset control, etc. The total energy reduction from all four projects is approximately 1,086,331 kWh and 21,600 therms annually, resulting in a reduction in GHG emissions of 878 metric tons of CO_2e[1] and annual savings of $238,800.

- Insulation of Water Piping at Reservoir Road, Spring Street and Brattle Court Water Pump Stations. Custom insulation was installed around the incoming water pipes to eliminate condensation, thereby significantly reducing the need for dehumidification at three facilities, as well as improving safety and reducing maintenance needs. The total energy reduction from these three projects is about 164,800 kWh annually, resulting in a reduction in GHG emissions of 116 metric tons of CO_2e and annual savings of $25,000.

Insulation of Water Piping

- Installation of Energy Efficient Lighting at MWRA Facilities. Interior and exterior lighting has been installed at over 40 MWRA facilities, including the Deer Island and Clinton Wastewater Treatment Plants, the Carroll Water Treatment Plant, and Administration Building, most of the water and wastewater pump stations, headworks facilities, CSO treatment facilities, and underground chambers. The energy efficient lighting has been installed in both offices and process areas, and includes low wattage fluorescent as well as LEDs. In many cases, the installation of LEDs has cut the energy use at a facility by 50-60 percent, while improving working conditions. The annual energy savings from 21 lighting replacement projects over the last 3 years totals 2.3 million kWh, resulting in a reduction in GHG emissions of 1,616 metric tons of CO_2e and annual savings of $254,105.

- Installation of Variable Frequency Drives on motors at MWRA facilities reduces the amount of energy used when the need is less than full power. For example, VFDs were installed at Gillis Water Pump Station, potentially reducing energy usage by

1 CO_2e is carbon dioxide equivalent, which is a measure that allows the comparison of the emissions of other greenhouse gases relative to one unit of CO_2.

approximately 927,000 kWh annually, resulting in a reduction in GHG emissions of 651 metric tons of CO_2e and annual savings of $137,600.

- Optimization or Modification of Processes to Reduce Energy Efficiency. In addition to making capital investments in lighting, VFDs, HVAC, and other equipment to reduce energy usage and GHG emissions, MWRA is reviewing its operational procedures to identify areas where it can change how it operates to reduce energy usage and still maintain optimal service. Two such examples include eliminating the use of chemical mixers at the Carroll Water Treatment Plant and reducing channel blower run time at Deer Island. These changes in operational procedures resulted in a reduction of about 2,079,550 kWh and 1,461 metric tons of CO_2e of GHG emissions and annual savings of $230,450.

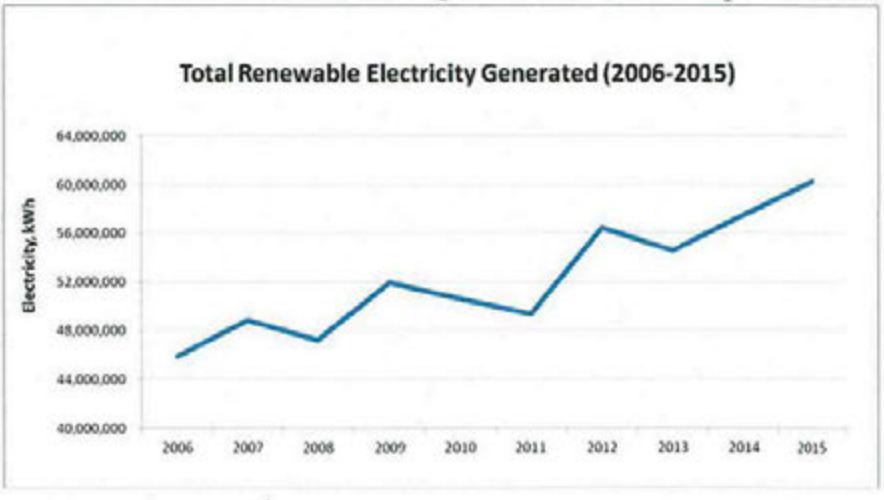
Staff continue to evaluate additional opportunities to cost-effective improve energy use efficiency at MWRA facilities.

Partnering with Regional Utilities

In 2014, MWRA executed a Memorandum of Understanding (MOU) with Eversource (formerly NSTAR), whereby MWRA established a goal of an annual five percent reduction in energy usage. The MOU provides higher than standard rebates from the utility for implementing energy efficiency projects, establishing a floor of $0.30/kWh and $1.50/therm for each kWh and therm saved for each approved project. MWRA aggressively pursues opportunities for energy efficiency incentives in addition to utility funded facility energy audits from all of our utilities. MWRA also utilizes the provision in the Green Communities Act that allows government agencies to work directly with the utility's prequalified energy contractors to expedite the implementation of energy efficiency projects. Since FY14, MWRA has received approximately $1.8 million and is currently eligible for an additional $800,000 in incentives from the utilities, for over 40 energy efficiency projects.

Renewable Energy and Avoided Emissions

MWRA produces green power at a number of locations within the system. Hydroelectric generators capture energy where water enters the Wachusett Reservoir at Oakdale and where the water leaves the reservoir at Cosgrove, and also at the Loring Road Covered Storage tanks generate power as water moves eastward and downhill from Quabbin into the metropolitan area. Hydroelectric generators also capture energy as wastewater flows out of the Deer Island plant down into the Outfall Tunnel shaft. Wind energy is captured with turbines at Deer Island and the Charlestown Pump Station. Solar electric panels have been installed at several locations on Deer Island

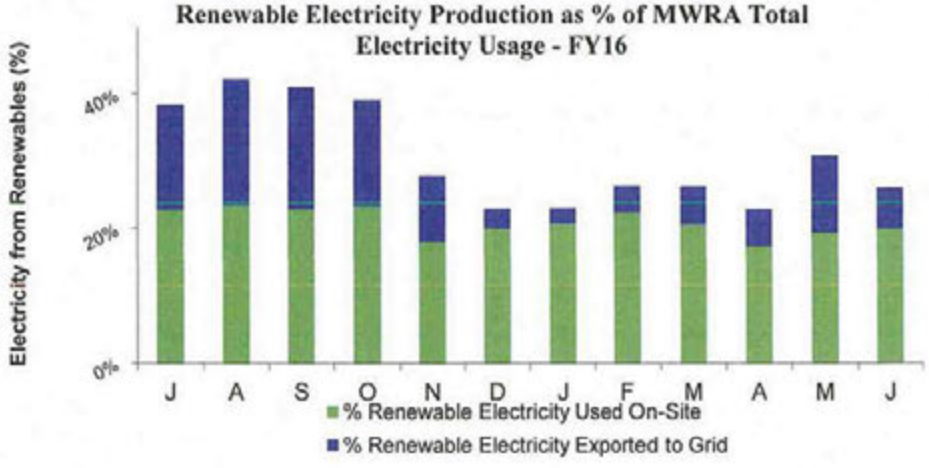


and at the Carroll Water Treatment Plant. Agency-wide, green power production increased from 45.9 million kWh in calendar year 2006 to 60.3 million KWh in 2015, an increase of 31.3 percent as shown in the graph.

Production and availability of each unit is continuously tracked and reported weekly and through the monthly Yellow and quarterly Orange Notebooks. Renewable electricity generated by MWRA from 2006 through 2014 resulted into 233,262 metric tons of CO_2e of avoided emissions. This is equivalent to avoiding the GHG emissions from 555 million miles driven by an average passenger vehicle.

The use of digester gas at the Deer Island Wastewater Treatment Plant has allowed MWRA to avoid significant diesel and electricity use for plant operations. If fuel oil had been used for heating instead of digester gas for the period of 2006-2014, there would have been a net additional 482,595 metric tons of CO_2e emissions. This is equal to 1.1 billion miles driven by an average passenger vehicle or the carbon sequestered by over 395,000 acres of U.S. forests in one year, a land mass almost seven times that of the City of Boston.

In FY16, 28 percent of the electricity used at Deer Island came from on-site renewable sources. Agency-wide, green power generation represented 31 percent of total electricity usage in FY16. All renewable energy generated on Deer Island is used on-site; most renewable energy generated elsewhere is exported to the grid. The graph below (taken from the Orange Notebook) shows the monthly variations in percentage usage and export during FY16.



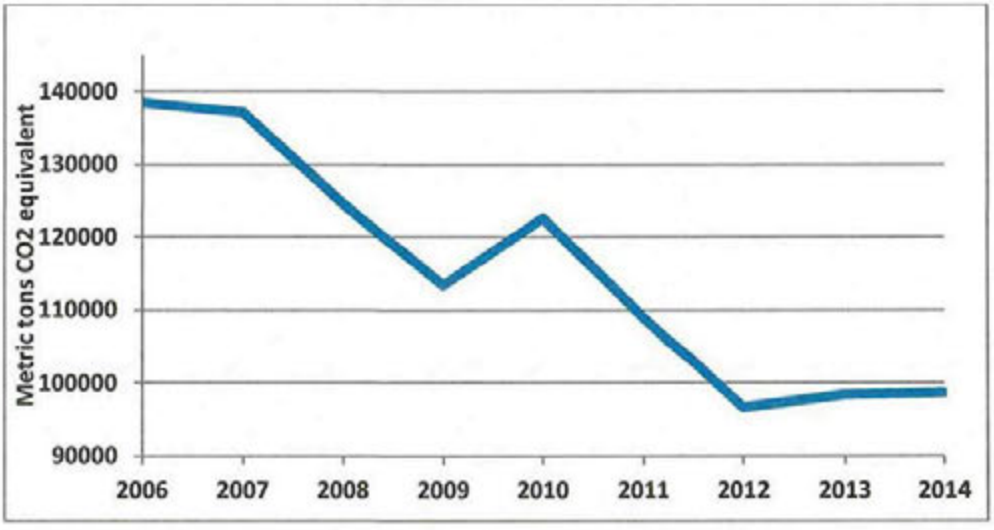
Staff continue to evaluate additional opportunities to develop cost-effective green power at MWRA facilities.

Reduction in Green House Gas Emissions

As part of MWRA's commitment to environmental stewardship, MWRA has implemented many energy conservation programs to reduce the energy required to provide safe drinking water and high quality wastewater treatment to its member communities, and invested in development of renewable "green power" facilities. In 2015, staff performed a comprehensive Green House Gas emissions study using 2006 as the base year and estimated a 28.7 percent reduction in emissions

between 2006 and 2014[2]. Figure on the next page shows the annual emissions. The reductions result from a combination improved efficiency resulting in a reduction in the amount of energy needed to run MWRA facilities; increases in MWRA's production of green power; and the gradual greening of the region's electrical power production. The bump up in emissions during 2010 was due to the spring severe weather that required the Deer Island Plant to use its diesel powered backup generator for an extended period to provide reliable service during the high flow conditions.

2006 to 2014 Changes in GHG Emissions (tCO2e)



At the December 2016 Board meeting, staff will return with a companion staff summary detailing efforts to date and future plans to build resiliency against and mitigate the effects of climate change and sea level rise on MWRA facilities.

2 The inventory was conducted in substantial part with an Environment Defense Fund (EDF) Climate Corps summer Fellow. MWRA has worked for several years with the EDF Climate Corps program to explore ways to quantify energy efficiency and energy storage opportunities. Staff are finalizing the 2015 inventory update.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: November 16, 2016
SUBJECT: FY17 First 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 first quarter are highlighted below.

Lower Flows and Impacts at Deer Island WWTP

The extreme dry weather has affected both water and wastewater systems. A detailed discussion of the drought's impact on the water system is presented in a separate staff summary today.

In September, the Fourth Quarter Orange Notebook pointed out that lower flows were resulting in reductions in pumping costs at the Deer Island wastewater treatment plant, although there were some process areas such as disinfection dose which were showing increases due to higher concentrations. That latter trend is even more evident in the first quarter.

Flows at Deer Island continue to produce low flow records each month. (Page 2) Total wastewater flow for the quarter was 16.8 percent below budget, resulting in electrical power use for pumping being 12.3 percent below budget. However, more concentrated wastewater required more oxygen, and thus power use for the Cryogenic Oxygen Facility, part of the secondary treatment process, was 13.4 percent over budget. Overall, electrical usage was below budget by 2.1 percent during the quarter. (Page 1)

A positive impact of the drought has been seen in the blending data. The table on page 3 shows total blending events and percent of wastewater flow receiving secondary treatment for the past ten years. Blending of primary and secondary treatment flows occurs when total plant flows exceed the 700 million gallons per day capacity of the secondary treatment batteries. During high

rainfall events, stormwater entering the sewer system as inflow/infiltration and combined sewage, increases flows dramatically, while diluting the concentrations of pollutants. Blended flows meet or do better than secondary effluent permit limits. During the first quarter this fiscal year there were no blending events. (Page 2) Fiscal year 2016 had the lowest number of blending events and the highest percentage of flow receiving secondary treatment.

Toxics Reduction and Control

Another effect of the record hot dry summer appears to be a temporary increase in the molybdenum levels in MWRA sludge pellets. Cooling tower usage of molybdenum containing corrosion inhibitors seasonally contributes to varying levels of molybdenum in wastewater, thus in sludge and finally in sludge fertilizer pellets. In large part due to the Advisory Board's efforts, Massachusetts Department of Environmental Protection recently changed its regulations, raising the allowable limit for Type 1 unrestricted application from 25 mg/kg to match the New York limit of 40 mg/kg. Based on historical data, this was expected to allow for unrestricted use of MWRA's fertilizer pellets within Massachusetts. However, with this year's record hot dry summer, for the first time since November 1997, levels in pellets have risen to just over the new limit with September levels at 41 mg/kg. (Page 12)

MWRA staff will continue to watch these levels closely over the next few months to determine if this exceedance is temporary and attributable to the extreme dry and hot recent weather.

Laboratory Services

MWRA's laboratories continued to meet targets for on-time results and kept within quality assurance targets, even while substantially increasing the number of analyses conducted. As discussed in a separate staff summary on lead, the laboratory has ramped up its capacity to perform lead in drinking water analyses to provide assistance to member communities' school departments. From April through the last week of October, the MWRA Laboratory has performed 11,314 tests on samples from 200 schools in 27 different MWRA communities. A substantial fraction of those tests were conducted in July and August. MWRA's Laboratory also commenced testing of the regulatory Lead and Copper Rule samples. In August, the Laboratory preformed just under $1 million of services, about 50 percent more than planned. Looking ahead to the second quarter, school sample volume will again increase as both the Department of Environmental Protection and MWRA conduct more outreach to schools. (Page 15)

Community Support Programs

During the First Quarter, the community support program provided a total of $2.4 million in grants and zero-interest loans to three communities, Everett, Reading and Winchester, to fund local sewer rehabilitation programs reducing inflow and infiltration. During the quarter, $8.2 million in zero-interest loans was provided to six communities, Boston, Everett, Nahant, Norwood, Quincy and Swampscott, to fund local water system improvements. Both were at or slightly above target for the quarter. The lead service line replacement loan program has not yet disbursed any loans, but as discussed in a separate lead staff summary, applications have been

received from Quincy and Newton, and loan distributions to both are anticipated in late November or early December (Pages 31-33).

MASSACHUSETTS WATER RESOURCES AUTHORITY

Board of Directors Report

On

Key Indicators of MWRA Performance

For

First Quarter FY17

Q1	Q2	Q3	Q4
■			

Frederick A. Laskey, Executive Director
Michael J. Hornbrook, Chief Operating Officer
November 16, 2016

Board of Directors Report on Key Indicators of MWRA Performance

First Quarter FY17

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Operations and Maintenance

Construction Programs

Drinking Water Quality and Supply

Wastewater Quality

Community Flows and Programs

Business Services

Other Management

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.

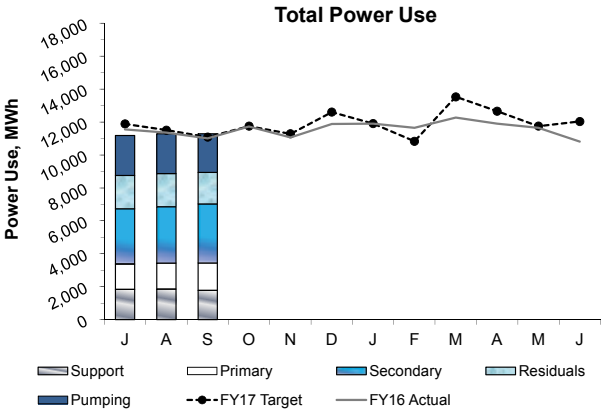
Frederick A. Laskey, Executive Director
Michael J. Hornbrook, Chief Operating Officer

November 16, 2016

OPERATIONS AND MAINTENANCE

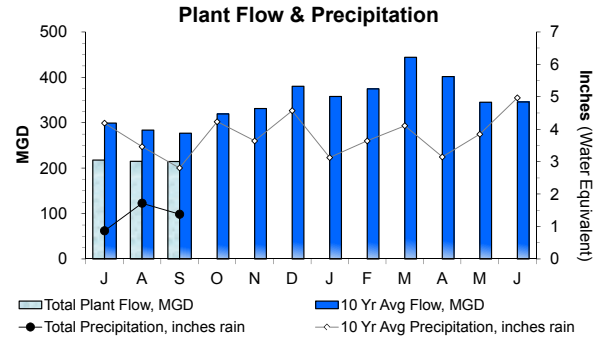
Deer Island Operations

1st Quarter - FY17

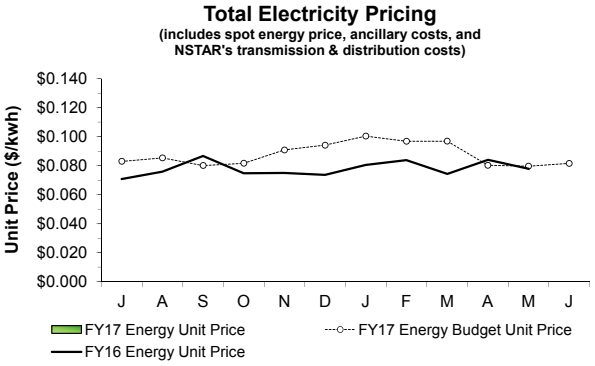


Total power usage in the 1st Quarter was 2.1% below target even though Total Plant Flow was 16.8% below target with the 3 year average plant flow. Power used in the Cryogenic Oxygen Facility was 13.4% higher than target as the operation of a second cold box unit was needed for the high dissolved oxygen demand in the secondary treatment process as a result of the extremely low plant flow. Operating a second cold box during the 1st Quarter has not been necessary in the last 3 years and contributed to the elevated expected power usage. Total Power usage for wastewater pumping operations was 12.3% below target due to the lower plant flow.

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

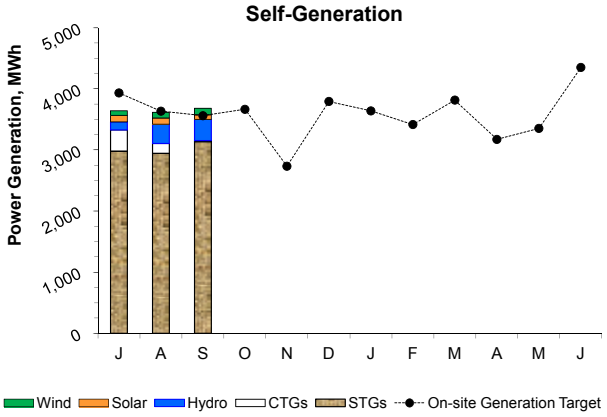


Total Plant Flow for the 1st Quarter was 24.7% below target with the 10 year average plant flow (215.8 MGD actual vs. 286.7 MGD expected) as precipitation for the quarter was 62% lower than target (3.97 inches actual vs. 10.45 inches expected).



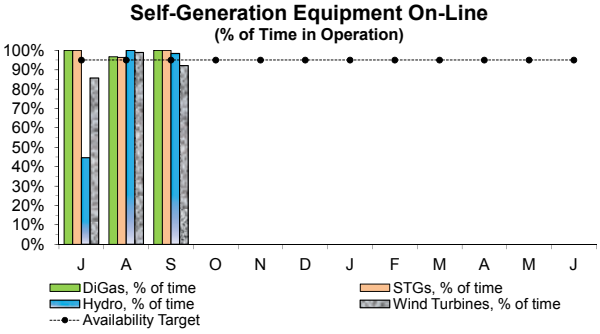
Under the current energy supply contract, a block portion of DI's energy is a fixed rate and the variable load above the block is purchased in real time. The actual total energy unit prices in July, August, and September are not yet available as the complete invoices for these months are still pending 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 three (3) month due to the timing of invoice receipt.

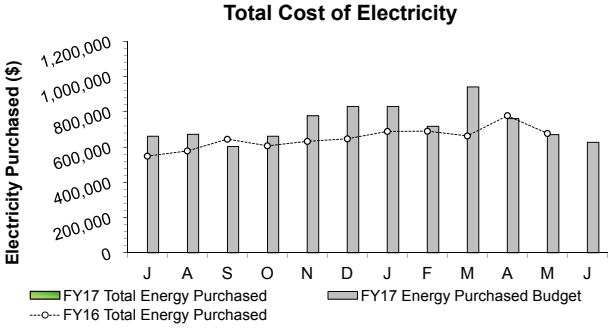


Power generated on-site during the 1st Quarter was 1.7% below target. While generation by the STGs, CTGs, Solar, and Wind Turbines met or exceeded their target, generation by the Hydro Turbines was below target due to mechanical issues. The CTGs generated 44.5% more power than expected during the quarter as the CTGs were operated for approximately 45 hours during the 1st Quarter for a demand response event in August, for peak shaving in July and August, and for routine 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 283.7 MWh was generated by the Solar Panels and 274.7 MWh was generated by the Wind Turbines in the 1st Quarter.

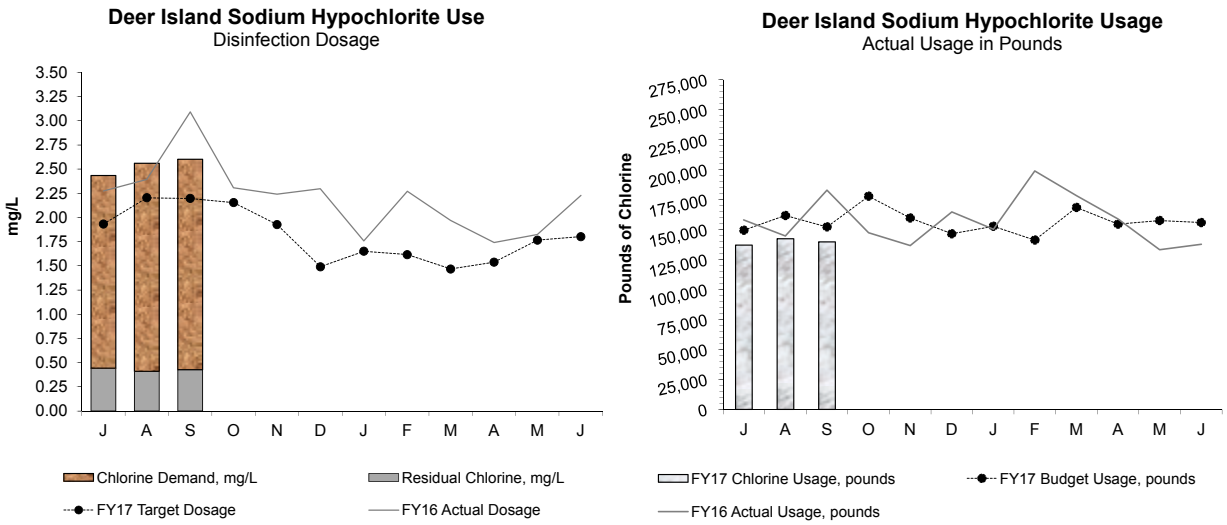


The DiGas system and STGs exceeded the 95% availability target for the 1st Quarter. The Wind Turbines fell below target due to mechanical issues with Turbine #2, which was offline from July 18 to July 27, and the Hydro Turbines were not available during the first half of July.



The Electricity cost data for Electricity Purchased during the 1st Quarter are not yet available as the complete invoices for July, August, and September are still pending receipt and/or review as of reporting time.

Note: Only months with complete Electricity Purchased data are reported. Therefore, the dataset lags by three (3) months due to the timing of invoice receipt.



The disinfection dosing rate in the 1st Quarter was 20% higher than the target. DITP maintained an average disinfection chlorine residual of 0.43 mg/L this quarter with an average dosing rate of 2.53 mg/L (as chlorine demand was 2.11 mg/L). Chlorine dosing was higher than expected due to lower than expected plant flow resulting in a higher chlorine demand. However, actual sodium hypochlorite usage in pounds of chlorine was 9.6% below target this quarter.

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

Secondary Blending Events

Month	Count of Blending Events	Count of Blending Events Due to Rain	Count of Blending Events Due to Non-Rain-Related Events	Secondary, as a Percent of Total Plant Flow	Total Hours Blended During Month
J	0	0	0	100.0%	0.00
A	0	0	0	100.0%	0.00
S	0	0	0	100.0%	0.00
O					
N					
D					
J					
F					
M					
A					
M					
J					
Total	0	0	0	100.0%	0.00

Deer Island Operations & Maintenance Report

Environmental/Pumping:

The plant achieved a peak flow rate of 741.2 MGD in the early morning of August 22 during a rain event that produced 0.90 inches of precipitation. Overall, Total Plant Flow in the 1st Quarter was 24.7% below the 10 year average plant flow target for the quarter.

Several all-time low flow records (post DITP startup, July 1998) were set this quarter as a result of these low flows:

- Monthly Average Total Plant Flow - 214.64 MGD set in September 2016 (previous record was 215.04 MGD from August 2016),
- Monthly Average South System Flow - 62.28 MGD set in September 2016 (previous record was 62.96 MGD from August 2016),
- Monthly 365-Dry Day Flow - 253.9 MGD set in September 2016 (previous record was 254.9 MGD from August 2016).

On September 4, 2016, three (3) daily low flow records were also set:

- The Daily Average Total Plant Flow of 188.82 MGD broke the record of 197.0 MGD that was set on October 20, 2015,
- The Daily Average North System Flow (not impacted by a North Main Pump Station shutdown for valve replacement project) of132.52 MGD broke the all time daily low flow record of 135.53 MGD that was set on July 3, 2016,
- The Daily Average South System Flow of 56.26 MGD broke the all time daily low flow record of 58.57 MGD that was set on August 20, 2016 .

Additionally, monthly average low flow records for Total Plant Flow, North System Flow, and South System Flow were all set in July, August, and September.

Deer Island Operations & Maintenance Report (continued)

Environmental/Pumping (continued):
The effects of the regional drought conditions causing these low flow records to be broken, can also be seen in the FY07 through FY16 secondary blending table below. The average daily plant flow, as well as the number and duration of blending events, has decreased substantially.

DITP Secondary Blending Data FY07 - FY16

Fiscal Year	Total Blending Events	Percent Secondary Treatment
FY07	30	98.71%
FY08	27	99.00%
FY09	30	99.02%
FY10	40	95.85%
FY11	26	99.21%
FY12	36	99.18%
FY13	28	98.87%
FY14	15	99.49%
FY15	23	99.00%
FY16	10	99.75%

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. Construction related to the physical replacement of the tip tubes was completed well ahead of schedule. Performance testing, adjustments related to project punchlist items, and troubleshooting of sporadic tip tube operational issues are currently in progress.

Odor Control:
Activated carbon in carbon adsorber (CAD) units #1, #2, #3, #5, #6, #7, and #8 in the East Odor Control (EOC) Facility, CAD units #2 and #4 in the West Odor Control (WOC) Facility, and CAD units #2 and #4 in the North Pumping Odor Control Facility (NPOC) was changed out in September as part of routine practice to replace spent carbon.

Energy and Thermal Power Plant:
Overall, total power generated on-site accounted for 32.4% of Deer Island's total power use for the quarter. Renewable power generated on-site (by Solar, Wind, STGs, and Hydro Turbines) accounted for 30.8% of Deer Island's total electrical power use for the quarter.

Eversource performed essential maintenance on the B-side transformer located in Station 132 (Eversource-owned building on DITP) from July 7 through August 10. DITP continued to receive power from Eversource during this work. Normally, both the A-side and B-side Eversource transformers are energized. However, during this work, the Eversource B-side transformer was taken out of service for maintenance. Both CTGs were available for demand response or peak demand avoidance events, in addition to providing backup power in the event of a power failure. Starting at the Main Switchgear Building (MSB), power was still distributed to both the A and B buses around to the 43 substations on DITP during this Eversource B-side transformer maintenance outage. No operational issues occurred as a result of this maintenance activity.

The CTGs were operated for 40 hours in the 1st Quarter during high electricity demand periods for a demand response event and to help to avoid peak pricing, as well as potentially avoid the peak hourly demand which could reduce DITP's electricity capacity charges for next year. In addition, the CTGs operated for 4.4 hours on five (5) different days for routine maintenance/checkout purposes.

Regulatory:
Emissions compliance testing on the Secondary Odor Control (SOC) treatment system on DITP was conducted by consultants from July 6 to July 7. The SOC treatment system treats combined process air from the secondary clarifiers and the reactors. The DITP Air Quality Operating Permit issued by the MA DEP requires that DITP conduct emissions compliance testing for the various emission units once every five (5) years to demonstrate compliance with applicable total reduced sulfur (TRS) and non-methane hydrocarbon (NMHC) emission limits. This testing requires the continuous emissions monitoring of the inlet and outlet of the odor control system over a 24-hour period for TRS at the outlet (stack) of the odor control system and for NMHC at the inlet. All emissions test results show that DITP was in compliance. The final report summarizing the test results was submitted to the MA DEP on September 6 by the consultants.

Representatives from the MA DEP were on site at the DITP on September 23 for an unannounced (annual) site visit of the treatment plant to review and inspect the plant's wastewater treatment operations and practices. The MA DEP representatives were given a comprehensive plant tour covering the entire wastewater and residuals treatment facilities and process areas. Initial communications indicate the inspection had gone well and no issues were raised by the DEP representatives.

Clinton AWWTP:

Phosphorus Reduction Facility: Completed forming and installing rebar for rapid mix tanks and wet well slab.
Electrical and plumbing contractors working on underground piping and conduit.
NGRID has commenced installation of natural gas service to treatment plant.

Primary Clarifiers: New alarms installed on torque overloads for drive units and wired to scada.

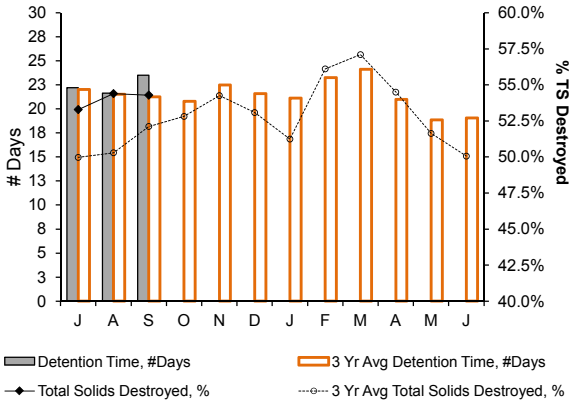
Digester Building: Installed two modulating gas valves for waste gas burners.

Trickling Filter #3: Machined and installed new sleeve on center column pedestal.

Deer Island Operations and Residuals

1st Quarter - FY17

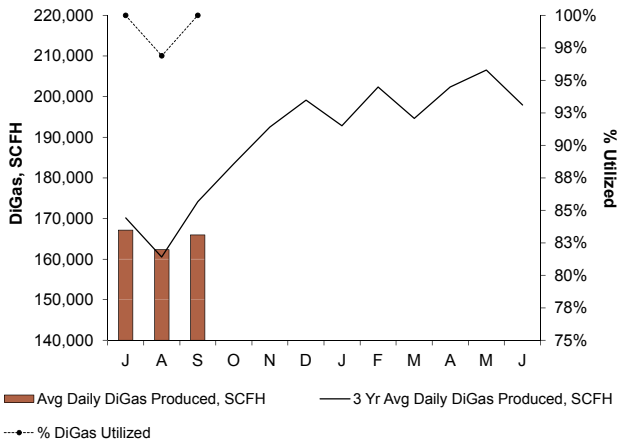
Sludge Detention Time in Digesters and Total Solids Destruction



Total solids (TS) destruction following anaerobic sludge digestion averaged 54.0% during the 1st Quarter, higher than the 3 year average of 50.8% for the same period, as the sludge detention time in the digesters was 22.4 days, higher than the 3 year average of 21.6 days as DI operated with an average of 7.8 digesters during the 1st Quarter in comparison to the 3 year average of 7.4 digesters.

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

Digester Gas Production and % Utilized

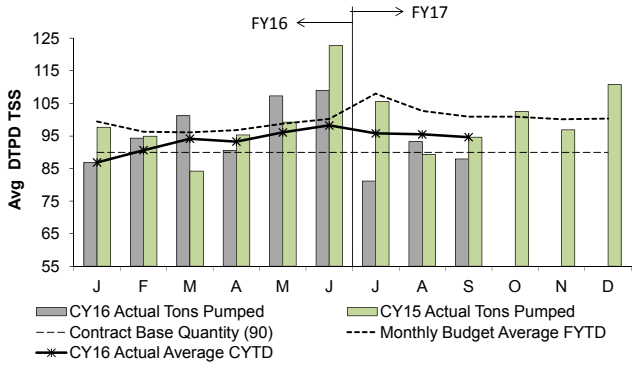


The Avg Daily DiGas Production in the 1st Quarter was 1.9% below target with the 3 Year Avg Daily DiGas Production for the same period due to lower than sludge production as a result of the lower than expected plant flows. On average, 98.1% of all the DiGas produced in the quarter was utilized at the Thermal Power Plant.

Residuals Pellet Plant

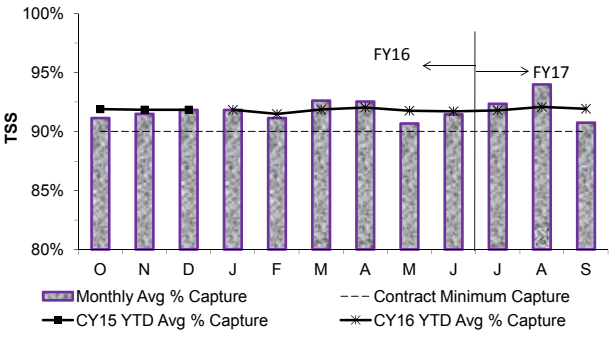
MWRA pays a fixed monthly amount for the calendar year to process up to 90 DTPD/TSS as an annual average. The monthly invoice is based on 90 DTPD/TSS (Dry Tons Per Day/Total Suspended Solids) times 365 days divided by 12 months. At the end of the year, the actual totals are calculated and additional 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 (FY16's budget was 100.2 DTPD/TSS and FY17's budget is 100.6 DTPD/TSS).

Sludge Pumped From Deer Island



The average total quantity of sludge pumped to the Pellet Plant in the 1st Quarter of FY17 was 87.4 DTPD - lower than FY17's average budget of 100.6 DTPD. The lower amount of sludge pumped from Deer Island in the 1st Quarter, in comparison to the FY17 budget average, was due to lower than average sludge production, a result of the much lower than average plant flows.

Monthly Average % Capture of Processed Sludge



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 91.93%.

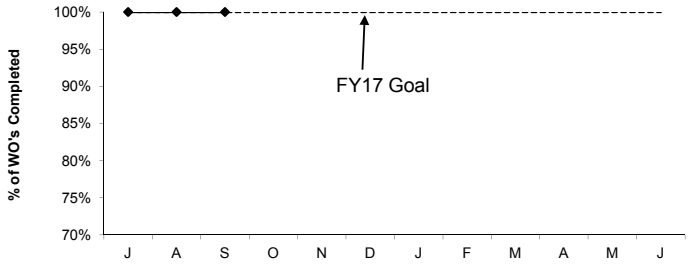
Deer Island Maintenance

1st Quarter - FY17

Productivity Initiatives

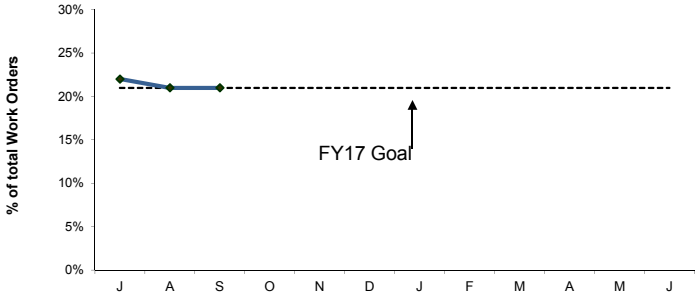
Productivity initiatives include increasing predictive maintenance compliance and increasing PdM work orders. Accomplishing these initiatives should result in a decrease in overall maintenance backlog.

Predictive Maintenance Compliance



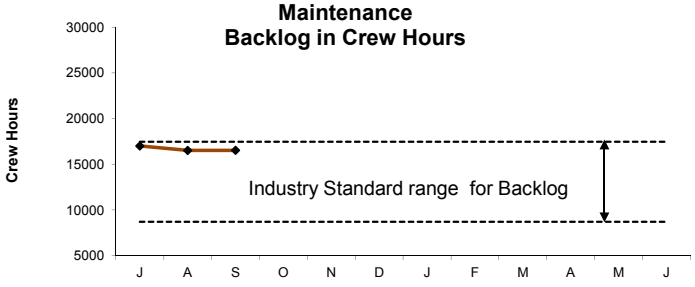
Deer Island's FY17 predictive maintenance goal is 100%. DITP completed 100% of all PdM work orders this quarter. DITP is continuing with an aggressive predictive maintenance program.

Predictive Maintenance



Deer Island's FY17 predictive maintenance goal is 21% of all work orders to be predictive. 21% 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

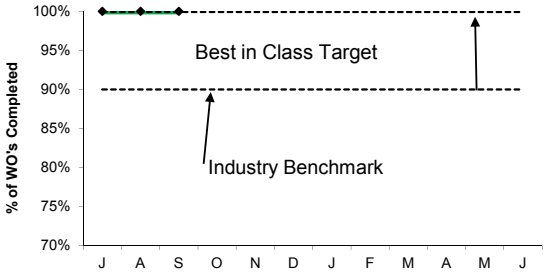


DITP's maintenance backlog at Deer Island is 16,683 hours this quarter. DITP is within the industry average for backlog. The industry Standard for maintenance backlog with 97 staff (currently planned staffing levels) is between 8,730 hours and 17,460 hours. Backlog is affected by four vacancies; M&O Specialist, Instrument Technician, Electrician and a HVAC Specialist. Management continues to monitor backlog and to ensure all critical systems and equipment are available.

Proactive Initiatives

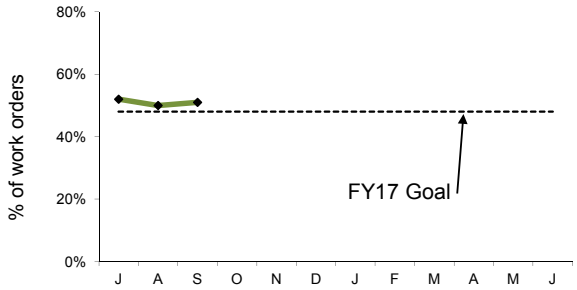
Proactive initiatives include completing 100% of all preventative maintenance tasks and increasing preventative maintenance kitting.
These tasks should result in lower maintenance costs.

Preventive Maintenance Compliance



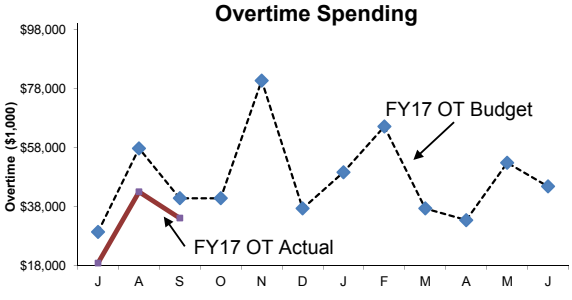
Deer Island's FY17 preventative maintenance goal is 100% completion of all work orders from Operations and Maintenance. DITP completed 100% of all PM work orders this quarter.

Maintenance Kitting



Deer Island's FY17 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

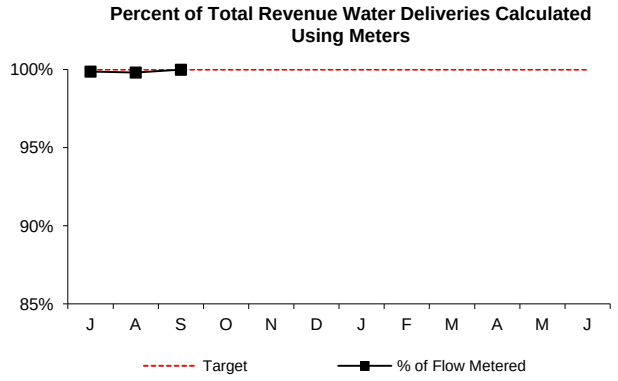


Maintenance overtime was under budget by $41K this quarter and $41k under for the year. Management continues to monitor backlog and to ensure all critical equipment and systems are available. This quarters overtime was predominately used for Island Wide HVAC work, Winthrop Terminal Facility Wash Press Rebuilds, Clinton Treatment Plant Trickling Filter Project, Stop Log Project, and Wet Taps to the Residuals Digested Sludge Lines.

Operations Division Metering

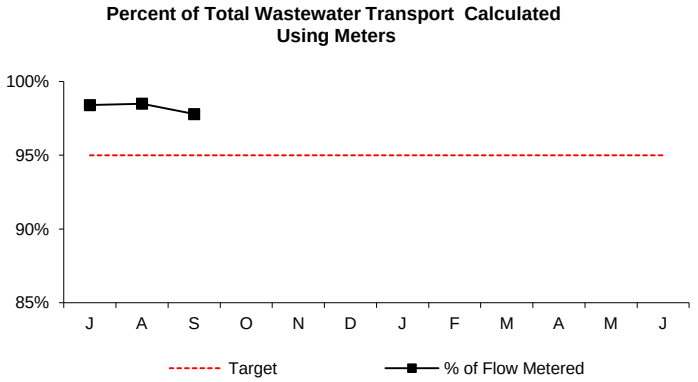
1st Quarter - FY17

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 1st Q of FY17, meter actuals accounted for 99.89% of flow; only 0.11% of total revenue water deliveries were estimated. The following is the breakdown of reasons for estimations:
In-house and Capital Construction Projects - 0.08%
Instrumentation Failure - 0.03%

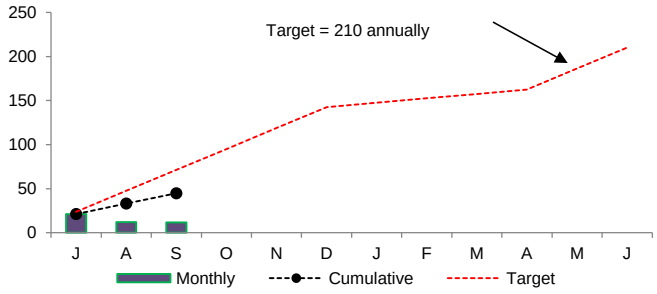
WASTEWATER METERS



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 1st Q of FY17, meter actuals accounted for 98.2% of flow; only 1.8% of wastewater transport was estimated.

WATER DISTRIBUTION SYSTEM PIPELINES

Miles Surveyed for Leaks



During the 1st Quarter of FY17, 44.73 miles of water mains were inspected. Miles surveyed, below target due to training of new staff.

Leak Backlog Summary

Month	J	A	S	O	N	D	J	F	M	A	M	J
Leaks Detected	3	2	2									
Leaks Repaired	1	1	1									
Backlog	7	8	9									
Avg. Lag Time	24.9	42.3	36.7									

During the 1st Quarter of FY17, seven new leaks were detected and two were repaired. Additionally during the 1st Quarter , #44 Arborway @ St. Joseph, West Roxbury originally detected on January 11, 2015 was repaired on August 15, 2016. Refer to FY17 Leak Report below for details. Also during the 1st Quarter of FY17 community service ranging from individual leak location to hydrant surveys were conducted for: Arlington, Boston, Chelsea, DCR Amelia Earhart Dam, Medford, Marlboro Newton, Somerville. Swampscott, and Waltham.

FY17 Leak Report - 1st Quarter

Date Detected	Location of Leaks	Repaired
7/22/2016	69 Riverside Avenue, Medford	7/29/2016
1/11/2015	Arborway @ St. Joseph St., West Roxbury	8/15/2016
9/15/2016	West Squantum @ Amsterdam Ave., Quincy	9/20/2016

Date Detected	Location of Leaks/Unrepaired
6/8/2015	Allandale Rd. @ Grove St., Brookline, Sched for late Fall (demand drops)
6/17/2015	Single Main for the South, can't shut down - To be determined.
7/16/2015	#56 Capt Robert Cook Dr, Needham - Sched for late Winter early Spring .
6/1/2016	Comm Ave at Oakland, Newton, to be done in October
7/1/2016	241 Forest St., Winchester - Late Winter 2017 - difficult Main to close.
7/26/2016	Res Playground Cleveland Cir., - Dec/Jan/Feb Pipe is in Ball Pk, wait until frozen.
8/11/2016	Lee Street @ Boylston St., (Rte 9) Brookline - work scheduled for October
8/30/2016	Morton Street @ American Legion, W. Roxbury - repair scheduled for Nov
9/28/2016	Quinobequin Road @ Rt 128, Newton - scheduled for Oct

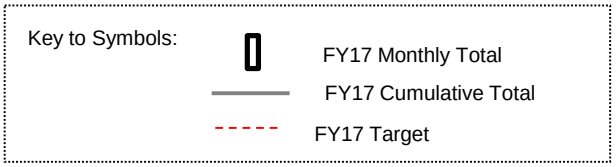
Water Distribution System Valves

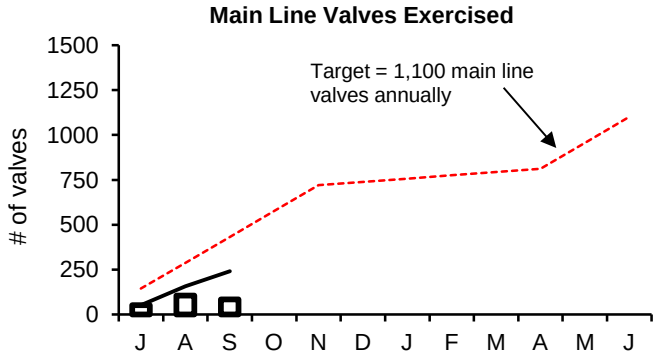
1st Quarter - FY17

Background

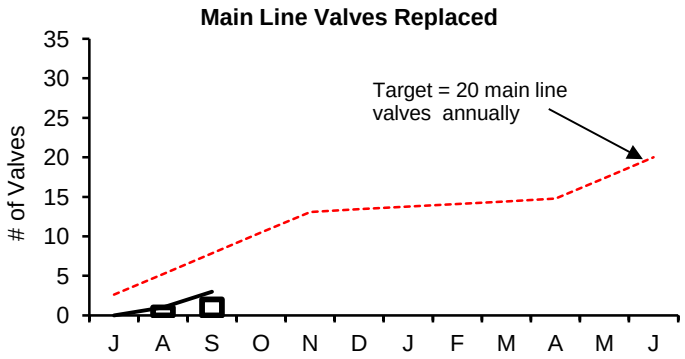
Valves are exercised, rehabilitated, or replaced in order to improve their operating condition. This work occurs year round. Valve replacements occur in roadway locations during the normal construction season, and in off-road locations during the winter season. Valve exercising can occur year round but 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	
		FY17 to Date	FY17 Targets
Main Line Valves	2,159	97.2%	95%
Blow-Off Valves	1,317	96.0%	95%
Air Release Valves	1,380	94.3%	95%
Control Valves	49	100.0%	95%

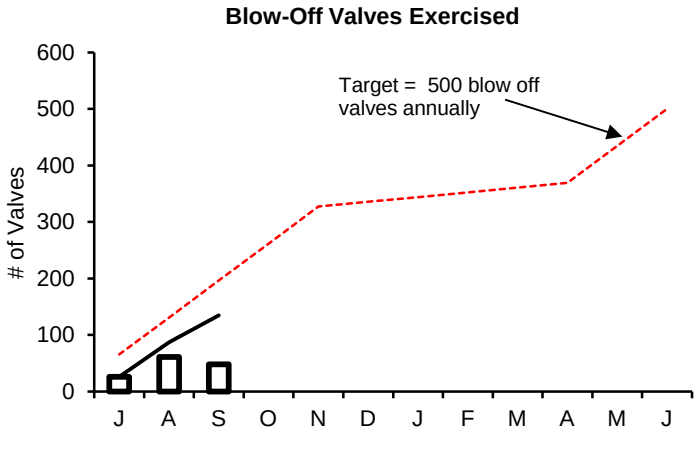




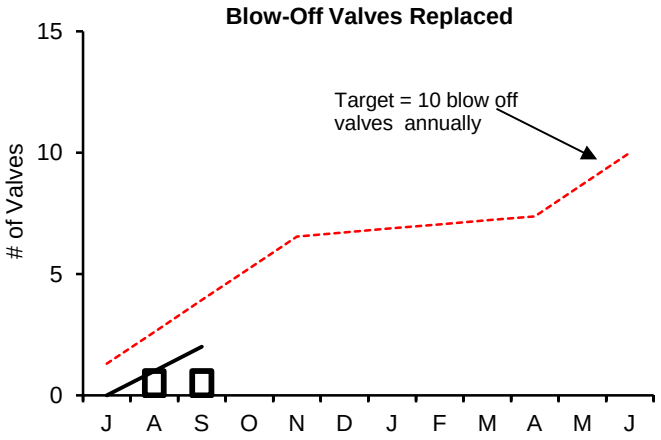
During the 1st Q of FY17, staff exercised 242 main lines valves. Below target due to staffing shortage and high priority CIP projects.



During the 1st Quarter of FY17, staff replaced three main line valves.



During the 1st Quarter of FY17, staff exercised 135 blow off valves. .



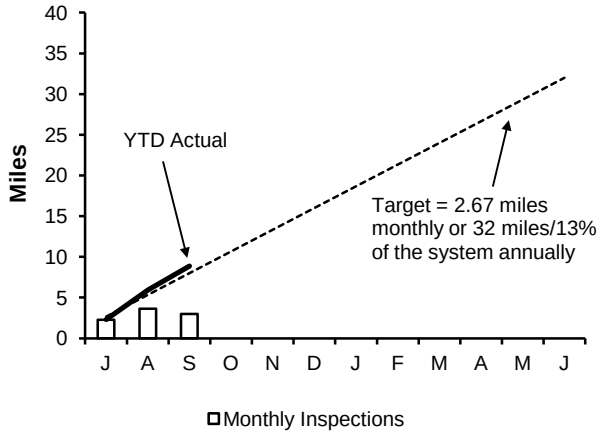
During the 1st Quarter of FY17, staff replaced two blow off valves.

Wastewater Pipeline and Structure Inspections and Maintenance

1st Quarter - FY 17

Inspections

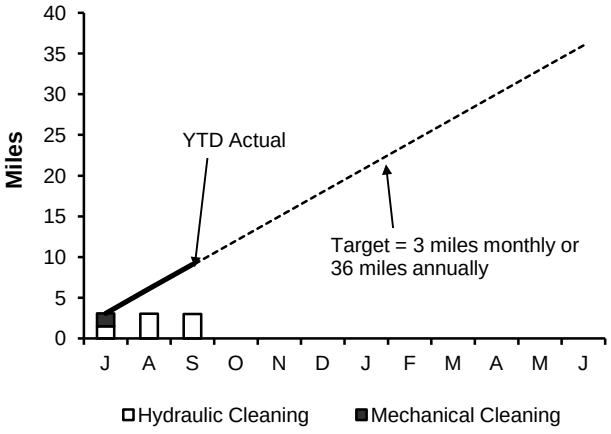
Pipeline Inspections



Staff internally inspected 8.88 miles of MWRA sewer pipeline during this quarter. The year to date total is 8.88 miles. No Community Assistance was provided this quarter.

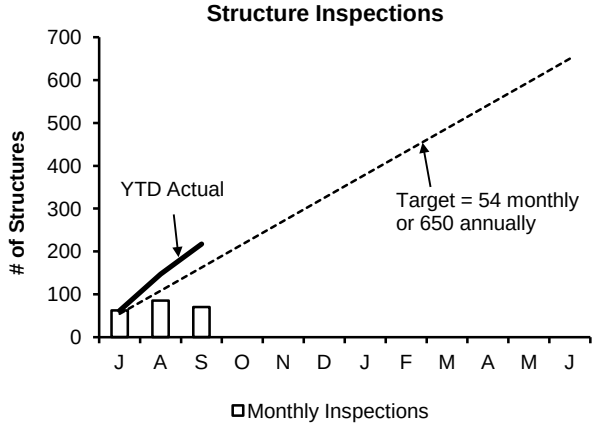
Maintenance

Pipeline Cleaning



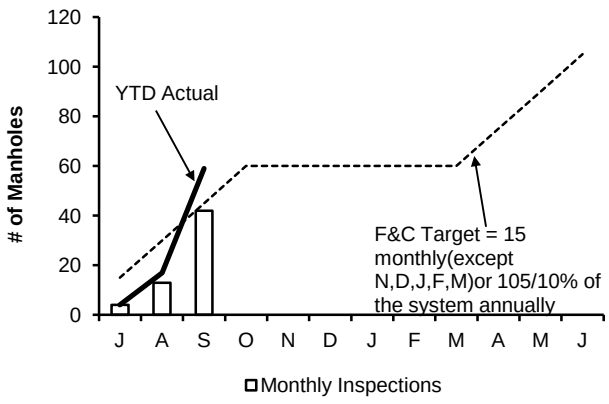
Staff cleaned 9.09 miles of MWRA's sewer system and removed 48 yards of grit and debris during this quarter. The year to date total is 9.09 miles. No Community Assistance was provided this quarter.

Structure Inspections



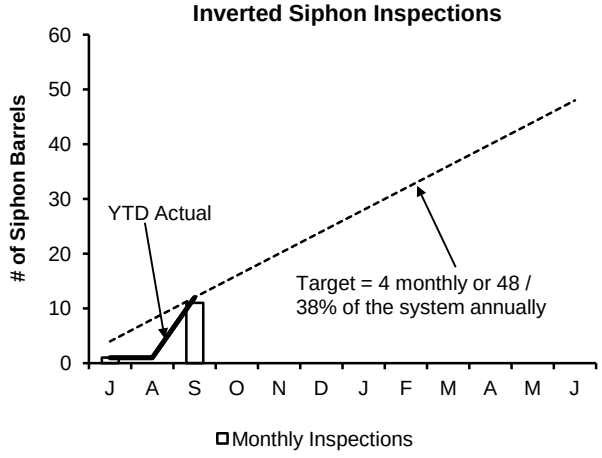
Staff inspected the 36 CSO structures and performed 181 additional manhole/structure inspections during this quarter. The year to date total is 217 inspections.

Manhole Rehabilitation



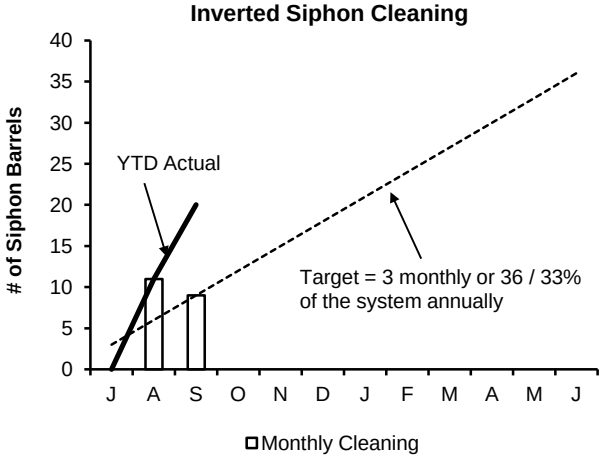
Staff replaced 59 frames & covers during the quarter. The year to date total is 59.

Inverted Siphon Inspections



Staff inspected 12 siphon barrels this quarter. Year to date total is 12 inspections.

Inverted Siphon Cleaning

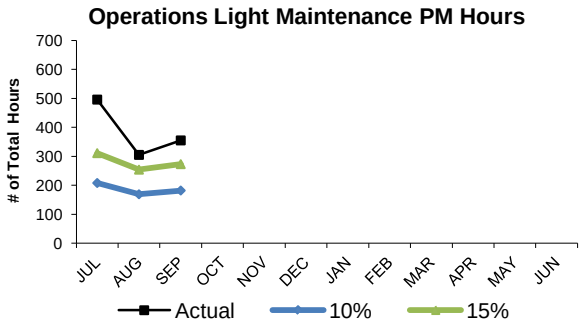


Staff cleaned 11 siphon barrels during the month of September. Year to date total is 20.

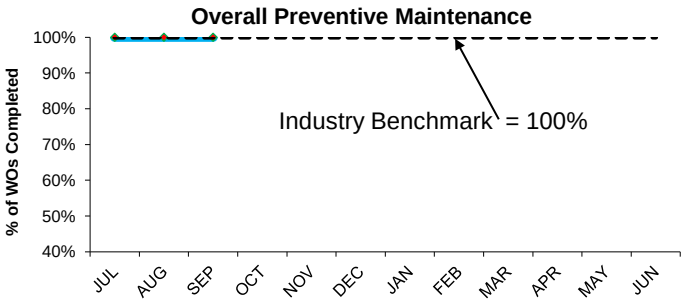
Field Operations' Metropolitan Equipment & Facility Maintenance

1st Quarter - FY17

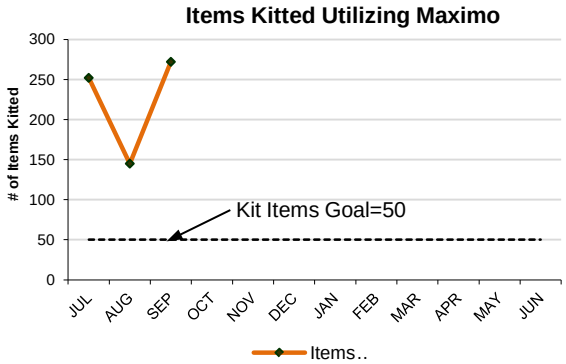
Several maintenance and productivity initiatives are in progress. The goal for the Overall PM completion and the Operator PM completion was raised to 100% for Fiscal Year 2010. The Operator PM and kitting initiatives frees up maintenance staff to perform corrective maintenance and project work, thus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



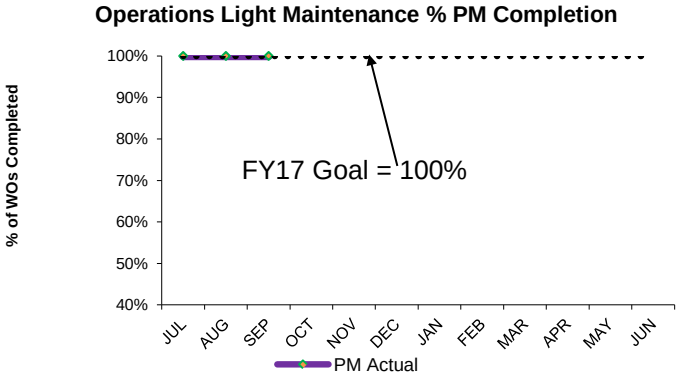
Operations staff averaged 385 hours of preventive maintenance during the 1st Quarter, an average of 19% of the total PM hours for the 1st Quarter, which is above the industry benchmark of 10% to 15%.



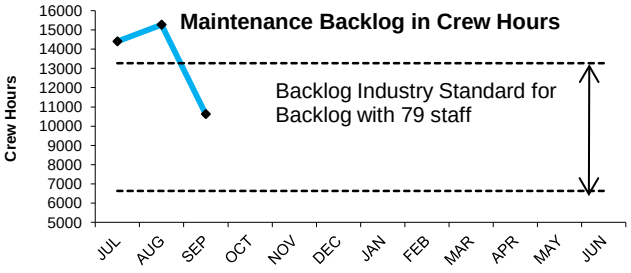
The Field Operations Department (FOD) preventive maintenance goal for FY17 is 100% of all PM work orders. Staff completed an average of 100% of all PM work orders in the 1st Quarter.



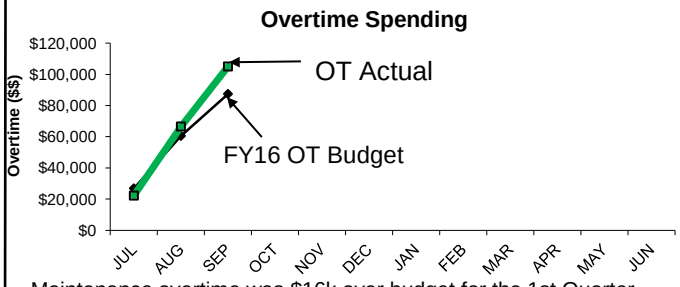
In an effort to more efficiently complete work, maintenance staff and work coordination staff have utilized the Lawson/Maximo interface to better kit stock and non stock material. The goal for FY17 is to "kit" 50 stock and non stock items total per month. An average of 223 items were kitted during the 1st Quarter



Wastewater Operators complete light maintenance PM's which frees up maintenance staff to perform corrective maintenance. Operations' FY17 PM goal is completion of 100% of all PM work orders assigned. Operations completed an average of 100% of PM work orders in the 1st Quarter.



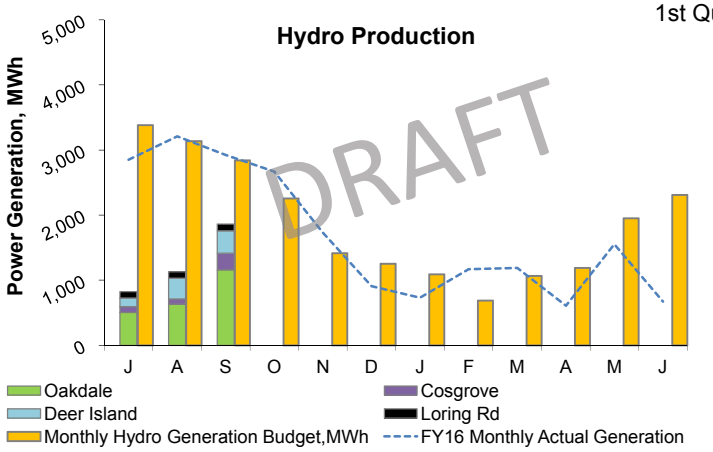
The 1st Quarter backlog average is 13435 hours. Management's goal is to continue to control overtime and still stay within the industry benchmark of 6450 to 12,940 hours.



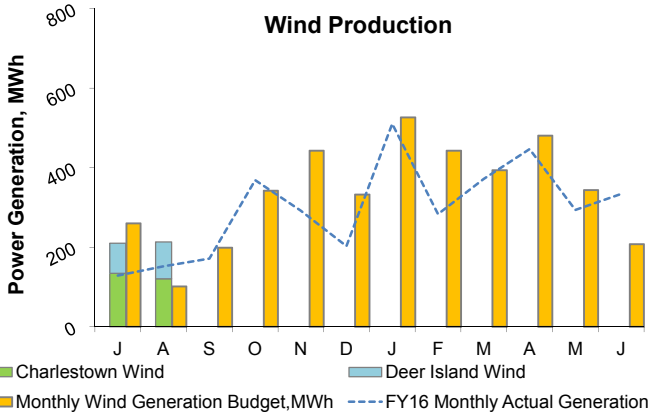
Maintenance overtime was $16k over budget for the 1st Quarter. Overtime was used for critical maintenance repairs, such as painting at Nut Island (after the fire), replacing the odor control fan at the Braintree Weymouth Pump Station, acid washing odor control scubbers at Columbus Park, as well as facilities support of Water Pipeline Maintenance.

Renewable Electricity Generation: Savings and Revenue

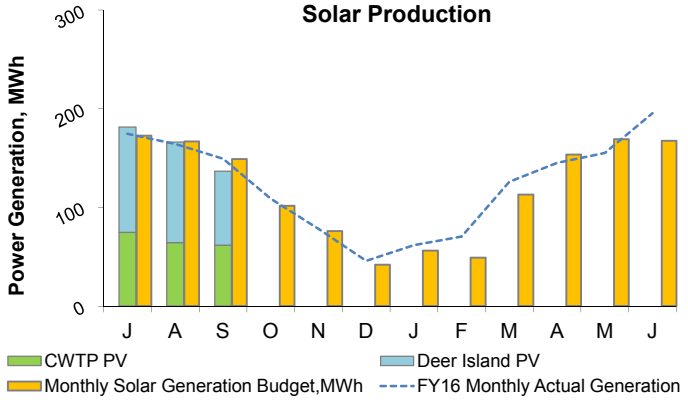
1st Quarter - FY17



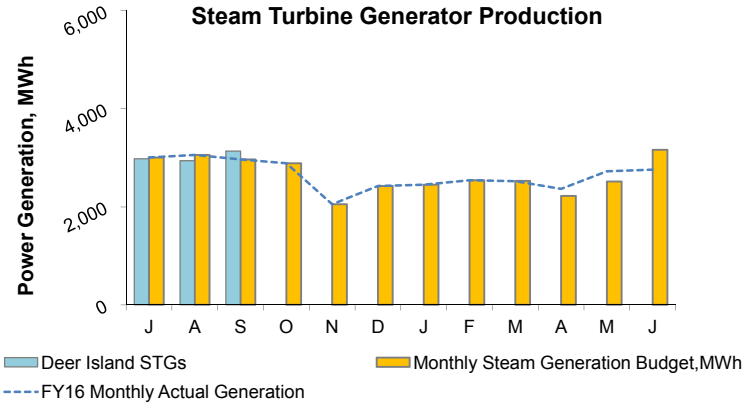
In the 1st quarter, the renewable energy produced from all hydroelectric facilities totaled 3,815 MWh; 59% below budget[3]. The reasons are threefold**: (1) Oakdale generation values were highly underestimated by the utility, and utility data corrections will be reconciled in later months**; (2) Cosgrove was operating at a lower rate for scheduled testing; (3) both Deer Island hydro turbines were off-line due to mechanical issues. DI Hydro 2 was repaired and returned to service on 7/18/2016. Savings and revenue data during the 1st Quarter is not yet available as the complete invoices for July, August, and September are still pending receipt and/or review as of reporting time.



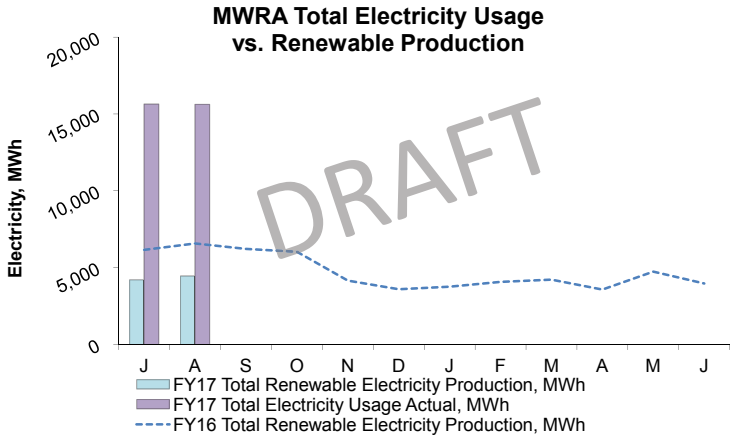
In the first 2 months if Q1, the renewable energy produced from all wind turbines totaled 423 MWh; 17% above budget[3]. Savings and revenue data during the 1st Quarter is not yet available as the complete invoices for July, August, and September are still pending receipt and/or review as of reporting time.

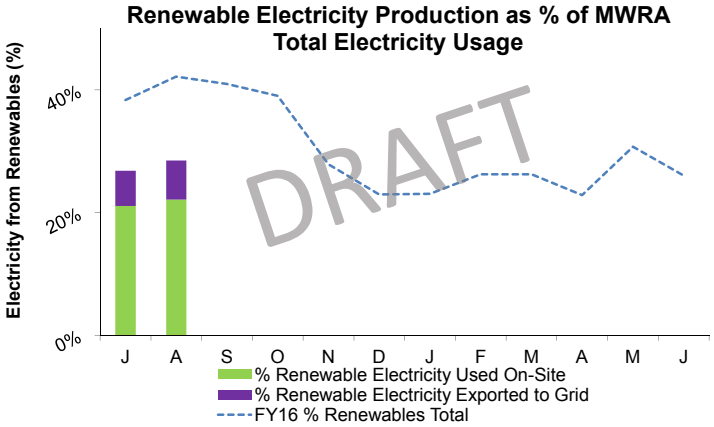


In the 1st quarter, the renewable energy produced from all solar PV systems totaled 484 MWh; 1% below budget[3]. Savings and revenue data during the 1st Quarter is not yet available as the complete invoices for July, August, and September are still pending receipt and/or review as of reporting time.



In the 1st quarter, the renewable energy produced from all steam turbine generators totaled 9,057 MWh; equal to budget[3]. Savings and revenue data during the 1st Quarter is not yet available as the complete invoices for July, August, and September are still pending receipt and/or review as of reporting time.





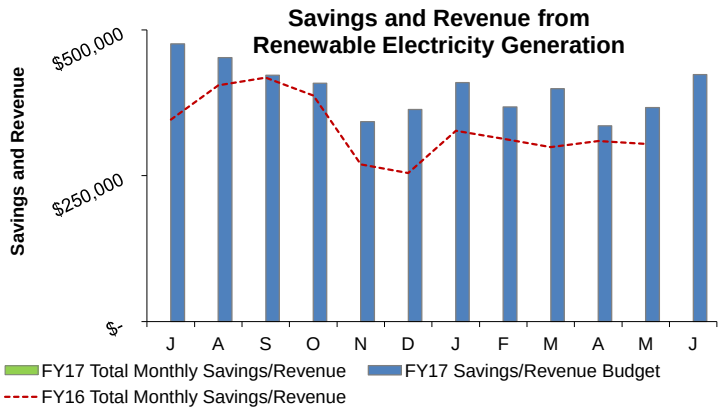
In the first 2 months of FY17, MWRA's electricity generation by renewable resources totaled 8,647 MWh. Oakdale hydro generation data was underestimated by the utility and will be reconciled in later months; this will be reflected in future reporting. MWRA's total electricity usage was approximately 31,277 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.

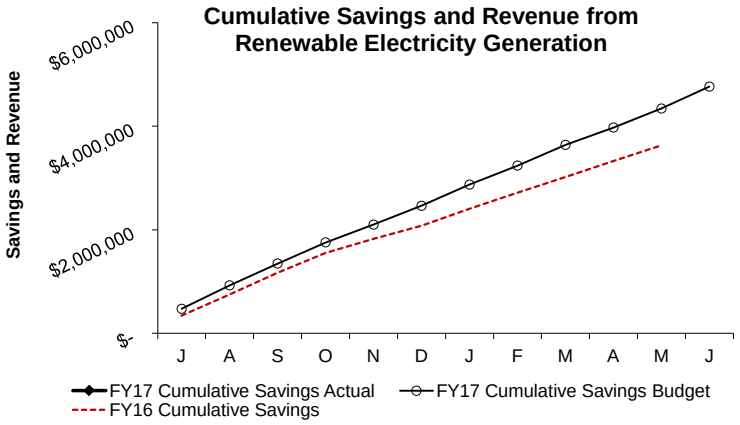
In the first 2 months of FY17, green power generation represented approximately 28% of total electricity usage. All renewable electricity generated on DI is used on-site (this accounts for more than 50% of MWRA renewable generation). Almost all renewable electricity generated off-DI is exported to the grid.

Notes:
1. Only the actual energy prices are being reported. Therefore, some of the data lags up to 3 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

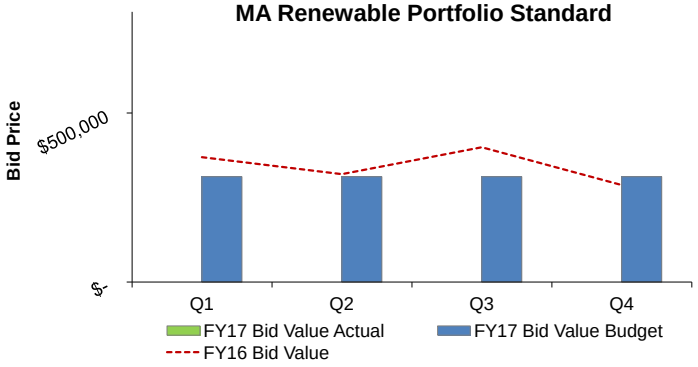
1st Quarter - FY17

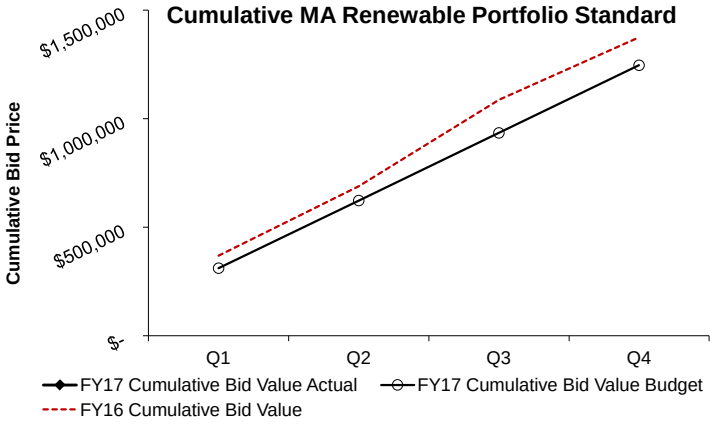




Savings and revenue data during the 1st Quarter is not yet available as the complete invoices for July, August, and September are still pending receipt and/or review as of reporting time[1].

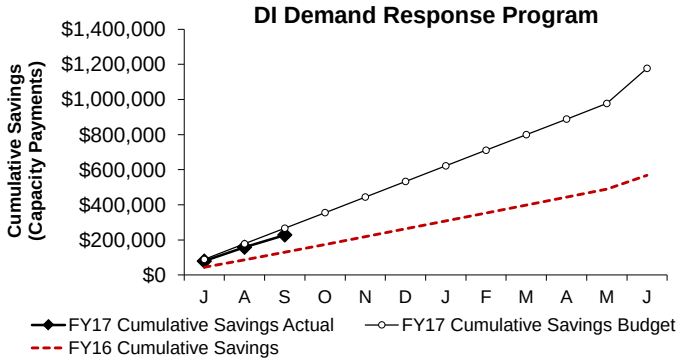
Savings and revenue[2] from all renewable energy sources include wind turbines, hydroelectric generators, solar panels, and steam turbines (DI). This includes savings and revenue due to electricity generation (does not include avoided fuel costs and RPS RECs).
The use of DITP digester gas as a fuel source 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).

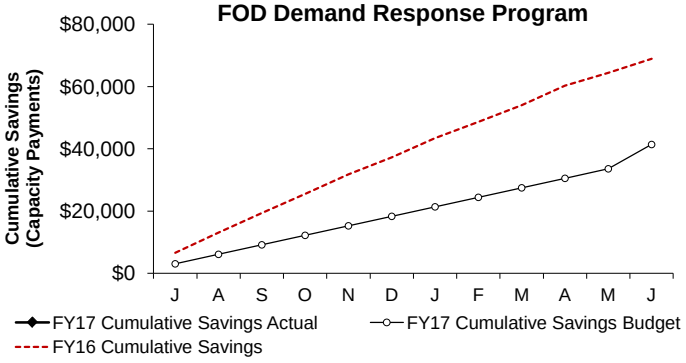




REC Bids have not yet been received for FY17[1].

REC values reflect the bid value on the date that bids are accepted. Cumulative bid values reflects the total value of bids received to date.



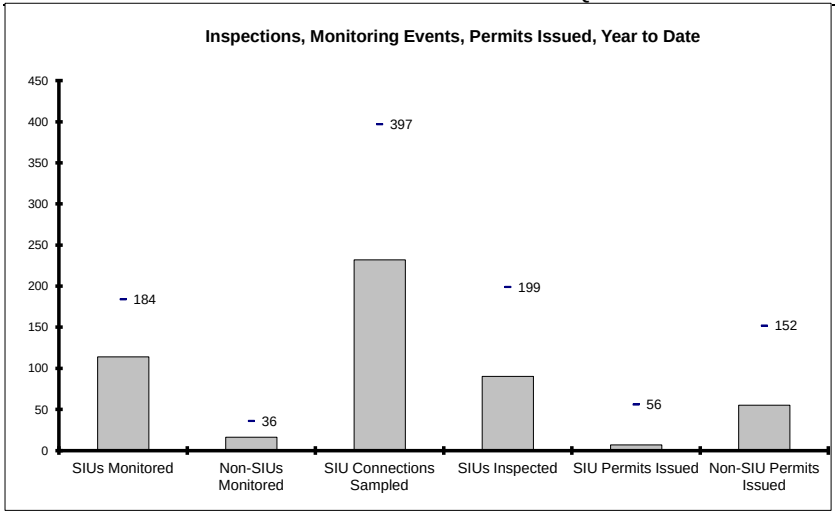


Currently Deer Island, JCWTP, and Loring Rd participate in the ISO-New England Demand Response Programs[4]. By agreeing to reduce demand and operate the facility generators to help reduce the ISO New England grid demand during periods of high energy demand, MWRA receives monthly Capacity Payments from ISO-NE. When MWRA operates the generators during an ISO-NE called event, MWRA also receives energy payments from ISO-NE. FY17 Cumulative savings (Capacity Payments only) through September[1] total $228,296 for Deer Island. Payments for FOD have not yet been recieved in FY17.

Notes:
1. Only the actual energy prices are being reported. Therefore, some of the data lags up to 3 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. Chelsea Creek, Columbus Park, Ward St., and Nut Island participated in the ISO Demand Response Program through May 2016, until an emissions related EPA regulatory change resulted in the disqualification of these emergency generators, beginning June 2016. MWRA is investigating the cost-benefit of emissions upgrades for future possible participation.

Toxic Reduction and Control

1st Quarter - FY17



EPA Required SIU Monitoring Events
for FY17: 184
YTD : **114**

Required Non-SIU Monitoring Events
for FY17: 36
YTD : **16**

SIU Connections to be Sampled
For FY17: 397
YTD: **232**

EPA Required SIU Inspections
for FY17: 199
YTD: **90**

SIU Permits due to Expire
In FY17: 56
YTD: **7**

Non-SIU Permits due to Expire
for FY17: 152
YTD: **55**

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

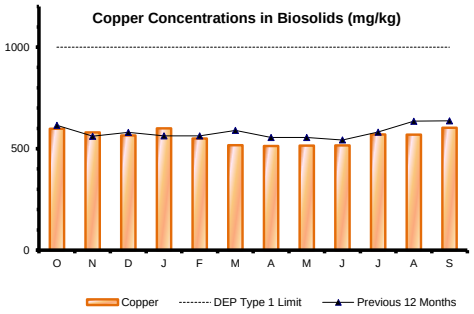
The "SIU Monitored" data above, reflects the number of industries monitored in the month. However, many of these industries have more than one sampling point and the "SIU Connections Sampled" data reflect samples taken from multiple sampling locations at these industries.

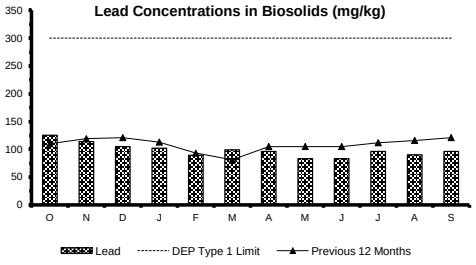
TRAC's annual monitoring and inspection goals are set at the beginning of each fiscal year but they can fluctuate due to the actual number of SIUs at any given time. During the course of the year, some SIUs do not discharge and cannot be monitored. TRAC also monitors one-third of the non-SIUs each year.

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

Number of Days to Issue a Permit								
	0 to 120		121 to 180		181 or more		Total Permits Issued	
	SIU	Non-SIU	SIU	Non-SIU	SIU	Non-SIU	SIU	Non-SIU
Jul	0	23	0	0	0	0	0	23
Aug	4	14	0	1	0	0	4	15
Sep	2	15	0	1	1	1	3	17
Oct								
Nov								
Dec								
Jan								
Feb								
Mar								
Apr								
May								
Jun								
% YTD	86%	95%	0%	4%	14%	2%	7	55

EPA requires MWRA to issue or renew 90% of SIU permits within 120 days of receipt of the application or the permit expiration date - whichever is later. EPA also requires the remaining 10% of SIU permits to be issued within 180 days. In the 1st Quarter of FY17, fifty-five permits were issued, seven of which were SIUs. All permits except for one SIU and three non-SIUs were issued in the 120-day timeframe. Two non-SIU permits were issued in the 120-day to 180-day timeframe. One SIU permit and one non-SIU permit were issued beyond the180-day period. The SIU permit was issued late because of the late payment on the FY16 invoice issued to the permittee last December. Other delays were due to new facilities requiring municipality approval and the cocommitant start-up problems.

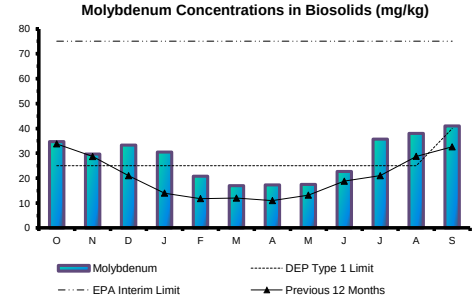




Copper, lead, and molybdenum are metals of concern for MWRA as their concentrations in its biosolids have, at times, exceeded regulatory standards for unrestricted use as fertilizer. Cooling tower usage typically causes a seasonal spike in molybdenum concentrations due to the blowdown on large AC systems 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.

During this 1st quarter of FY17, the MassDEP regulations for molybdenum officially changed from 25 mg/kg, matching the New York limits at 40 mg/kg for land use application. The MWRA will now likely be able to consistently sell its pellets in-state throughout the year. The previous limits forced several months' worth of pellets to be shipped out of state, and made it an impractical source of fertilizer for local Massachusetts farms.

In September, the level of molybdenum was 41 mg/kg, slightly exceedeing the new higher DEP limits. MWRA and its contractor, NEFCO, do not distribute product that does not meet the suitability standards.



Field Operations Highlights – Orange Notebook Bullets

1st Quarter – FY17

Western Water Operations and Maintenance

- Carroll Water Treatment: Operations and Maintenance Staff removed and replaced the fluoride chemical feed lines from the Chemical Building to the Post Treatment Building. Operations Staff, along with a contractor, repaired the lining of Sodium Hypo Chlorite Tank #7. This required the tank to be drained, flushed and ventilated.
- Reservoir Operations-Aquatic Invasive Plants Control Operations: Diver Assisted Suction Harvesting (DASH) Operations of Eurasian Watermilfoil Phase II Operations are well underway at Wachusett Reservoir's Stillwater Basin. The contractor's diver completed harvest of areas in lower Wachusett Basin System and final QA Diver Inspection to follow. Pre-harvest Survey of Aquatic Plants was completed at Chestnut Hill Reservoir.
- Cosgrove Intake Facility: Operations and Maintenance worked closely with a representative from the Hydro Power Generation Turbine Manufacturing Company to replace a bushing in the turbine blade angle control mechanism. This required the turbine to be offline for a week while the crew disassembled the upper section of the rotating assembly and replaced the bushing.
- Foss Reservoir: Facility Maintenance Staff constructed a dam seepage-monitoring weir downstream of the Foss Dam near the outlet structure, modifying the consultant's design based on field observations and engineer's recommendations.

Operations Engineering

Shaft 5 Leak Repair: Participated in cleanliness walk and developed and implemented the chlorination and activation plans of the aqueduct.

GPS Collection Project: The interns have finished the GPS Collection Program and they have collected GPS coordinates on 4,939 valves and GPS coordinates for 7,679 manholes. This is 96% of the MWRA Valves. 100% of the valves were not collected due to valves not being found in the field. The valves were either abandoned or paved over. The Pipeline and Valve Groups will be working with Operations Engineering to complete the remaining 4%.

Norumbega Tank Inspection Contract: Contractor is scheduled work to begin on November 21st. Currently assembling the Inspection Plan which includes operation plans, prerequisites and constraints.

Shaft 8 Siphon Repair: Assembled plans for the repair of 6" and 10" siphon pipes at the Shaft 8 Intake Facility, used seasonally to divert water from the Ware River into the Quabbin Aqueduct.

Larz Anderson Bridge in Cambridge: The Contractor, Barletta, continues to try to pass the pressure test on the newly installed 30-inch west main, Section 10, located on the Larz Anderson Bridge. The contractor procured a leak detection contractor to help determine where the leak was located on the new 30-inch main. Due to the small amount of leakage and the size of the pipe, the leak contractor was unable to determine where the leak or leaks were.

- Community Support

Lexington: Working with the Town of Lexington developing a system hydraulic gradeline. The Towns of Lexington and Bedford have areas that have experienced very low pressures. This is due to the drought and increased summer demands. The development of the gradeline may help determine what may be done within their system to help increase the pressures. In September, when the water demand dropped off, both Lexington's and Bedford's pressures increased.

Winchester: Also, due to the drought and increased summer demand, the Town of Winchester experienced areas with low pressures. Testing at Meter 130 located on Forest Street determined that the meter will need to increase in size; Engineering will design the changes and the Pipeline Group will install. In September, Winchester's pressures improved as water demand dropped.

Water Quality Meetings: Operations Engineering, Planning and Water Quality Assurance will meet with each community to discuss current DEP Policies, water quality, hydraulics, lead and MWRA Loan Programs. The following communities met in September: Malden - 09/01; Marblehead - 09/01; Northborough - 09/14; Marlborough - 09/14; and Quincy - 09/26.

Wastewater Operations & Maintenance

- Upgrades to Chelsea Screen House-Contract #7431: Operations Staff continues to assist Construction Staff and the Contractor with the upgrades to the Chelsea Screen House. Staff provided onsite operational support and attended bi-weekly meetings during the First Quarter of FY17 regarding the construction coordination. All gates and screens have been installed and tested by the contractor. The contractor is focusing on completion of the SCADA System, delivery of SCADA Training, activation of the Security System and the installation/testing of Flood Protection Equipment.

- Caruso Pump Station Improvements-Contract #7362: Wastewater Operations Staff continues to work with Construction Staff and the Contractor, by providing onsite operational support and attending bi-weekly Construction Coordination Meetings. The contractor is onsite working on the HVAC System and preparing to replace the facility generator and the breaker for the facility fire pump.

- Union Park Contract Renewal: Operations Staff began the process of renewing the contract for the Management, Operation and Maintenance of the Union Park Pumping Station/CSO Facility. Staff is working with Procurement Staff and BWSC Staff to prepare biddable contract documents with the contract advertised by October 2016 and awarded by December 2016. Operations Staff met with BWSC Operations Staff on September 14th to review and revise the contract documents.

- Braintree Weymouth Hydrogen Peroxide Pretreatment SOP: Operations Staff reviewed and provided comments for the Hydrogen Peroxide Pretreatment SOP. Hydrogen peroxide will be added to the wet well at BWPS, if needed, to reduce the atmospheric hydrogen sulfide levels tributary to the Nut Island Headworks to aid in the facility's odor control process.

- Facility Wet Well Cleaning Program: Operations Staff met with Technical Base Staff and Work Order Coordination Staff to review and revise the wet well cleaning program for all wastewater facilities. The purpose of this program is to ensure wet wells are properly maintained in a timely manner.

Metering

- Meter Systems: Staff worked with MIS to replicate Oracle Reports in SQL, to prepare the Web Module for intranet use, and to put all the wireless meters on a private network. Staff has been assisting on replacement design for Meter 130 in Winchester, with Lexington to provide monitoring of Bedford meters, with Newton to assist with their leak detection efforts.

TRAC

- Penalty Assessment Notice (PAN) issued to 170 West Broadway at LLC and Metric Construction Company on July 6, 2016 for failing to comply with the reporting requirements of its Temporary Construction Site Dewatering Permit. The amount of the penalty is $11,000.00.
- Penalty Assessment Notice (PAN) issued to Absolute Metal Finishing in Norwood, MA on September 22, 2016 in response to Absolute Metal's discharge of wastewater containing excessive levels of cyanide into the MWRA sanitary sewer in violation of EPA limits, MWRA Sewer Use Regulations, Absolute Metal's MWRA Sewer Use Discharge Permit and the April 15, 2015 Notice of Noncompliance and Order (Notice/Order) issued to Absolute Metal by the MWRA. The amount of the penalty is $15,500.00.
- Settlement Agreement between Nova Biomedical Corporation (Nova) and MWRA: TRAC and Nova entered into a Settlement Agreement, effective September 15, 2016, to resolve violations by Nova of MWRA's discharge limit for formaldehyde. The Agreement requires Nova to pay a $100,000.00 administrative penalty and pay stipulated penalties, for a period of two years.

Environmental Quality-Water

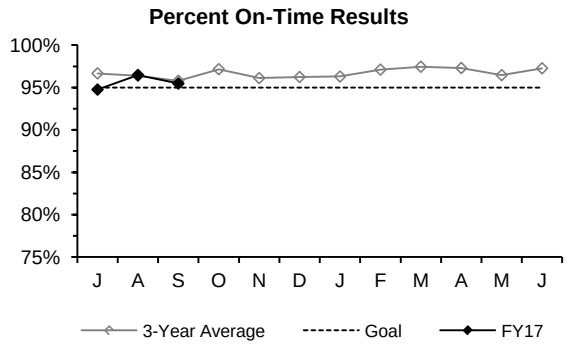
- MWRA Staff ceased periodic algae monitoring at Cosgrove Intake due to sustained low levels of nuisance algae. DCR will continue monitoring until reservoir ice over. Continued sampling for algal toxins, taste and odor compounds at raw and finished water locations.
- On September 12th, a chemical vendor presented information on a liquid-based copper sulfate product. Historical reservoir algae treatments utilize a crystal copper sulfate product. The presentation was given to ENQUAL's Water and Western Operations Staff.
- Staff performed standby reservoir sampling at Chestnut Hill, Norumbega, West, Spot Pond, Fells, Foss and Sudbury open reservoirs in July 2016. Data will be used to develop a routine Standby Reservoir Monitoring Program.
- Staff provided drinking water sampling and testing support from routine sample taps and tank hatches at the Newton Covered Storage Tank on September 15th, and also conducted community-wide chlorine residual data review for Newton.
- On September 22nd, staff gave a presentation to BWSC staff on the Revised Total Coliform Rule, as part of the annual Emergency Response Plan (ERP) Training provided to BWSC.
- Staff distributed reports to all water customers providing analysis of each community's chlorine residuals for each TCR sampling location over a two-year period.
- Staff performed quarterly calibrations or calibration checks on laboratory instrumentation in the CWTP and BWTF Laboratories including Turbidimeters and UVT Analyzers.

Environmental Quality-Wastewater

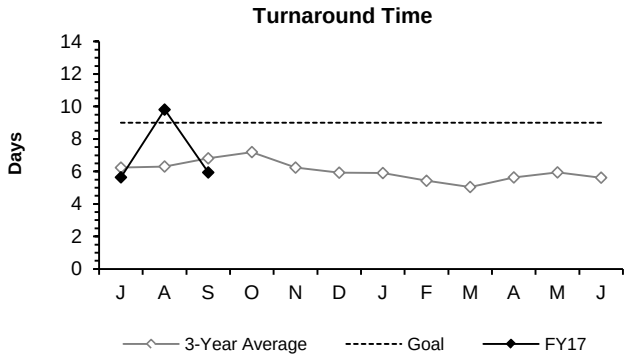
- Harbor/Beach/CSO Monitoring: Biweekly monitoring of the harbor and rivers continued, as did CSO receiving water monitoring under the new daily schedule. Beach monitoring season and daily web updates of data ended on Labor Day. Beach Water Quality Fact Sheets on MWRA web site were updated to include 2016 beach season data.
- In anticipation of a new Clinton Permit, began preparing for revised reporting requirements and drafted staff summary to inform the Board about the permit.
- In compliance with the newly-issued water quality standards variance for Lower Charles River/Charles Basin, began near-real-time web reporting of discharges from Cottage Farm and other MWRA CSO Treatment Facilities.

Laboratory Services

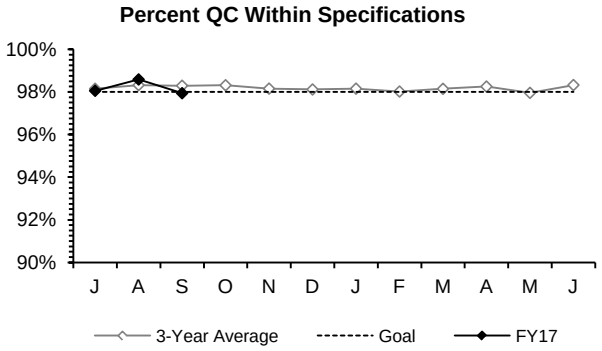
1st Quarter - FY17



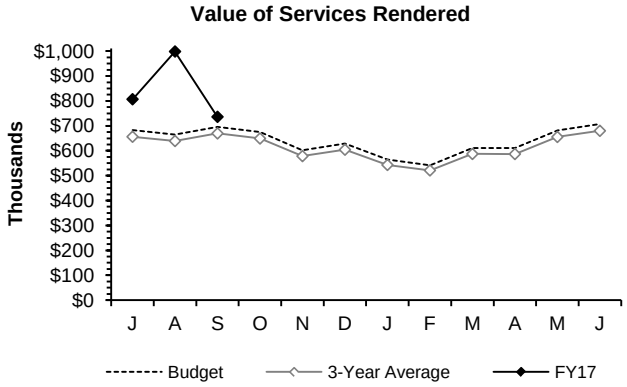
The Percent On-Time measurement was above the 95% goal.



Turnaround Time was faster than the 9-day goal.



Percent of QC tests meeting specifications was at the 98% in-house goal.



Value of Services Rendered was above the seasonally adjusted budget projection due to the School Lead and Annual Lead and Copper projects.

Highlights:

Dr. Delaney has been appointed for a second two-year term on EPA's Environmental Laboratory Advisory Board (ELAB), which advises EPA on laboratory topics. ELAB is a combination of industrial, government, and academic laboratory experts. Presentations on selected ion monitoring gas chromatography-mass spectrometry, cyanide, and sample matrix effects were given at EPA's National Environmental Monitoring Conference in Orange County, CA.

Quality Assurance:
DEP Lab Certification Office performed a 4-day routine audit at the Central Lab. All findings identified were minor and are being rectified before DEP issues its final report.

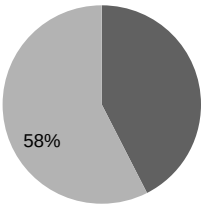
Drinking Water:
We provided rush turnaround time lab testing for metals, organics, cyanide and bacteria in response to a security breach at a water storage tank in Concord.

School Lead:
We continued to test school lead samples from our communities as quickly as they came in. By the beginning of September we had a low backlog of school samples, which allowed us to focus on the annual Lead and Copper Rule samples from our communities. The receipt of large quantities of school samples is expected to resume in October.

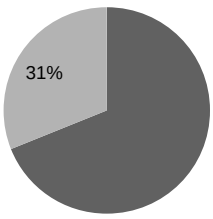
CONSTRUCTION PROGRAMS

Projects In Construction
1st Quarter FY17

Money



Time



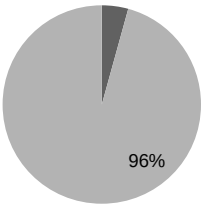
NIH Section 110 Reading & Woburn

Project Summary: This project involves the construction of 8,800 linear feet of 36-inch water transmission main in the City of Woburn and the Town of Reading.

Notice to Proceed: 12-Jan-2016 *Contract Completion:* 30-Mar-2018

Status and Issues: As of September, the Contractor installed a local water main and continued installation of the 36-inch water main, installed an 8-inch local water main and replaced a drain line in Oak Street to maintain pace with the installation of the 36-inch water main.

Money



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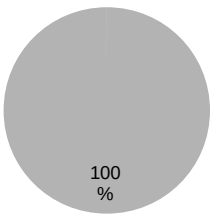


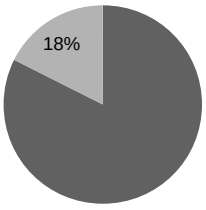
Upgrades to Chelsea Screen House

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.

Notice to Proceed: 4-Aug-2015 *Contract Completion:* 30-Sep-2018

Status and Issues: As of September the Contractor continued work on the Facility's slide gates and screens. They continued with the electrical work as well as SCADA work. Substantial completion was achieved as of 9-30-16

Money



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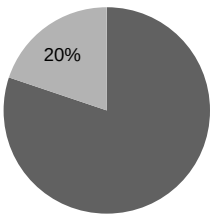


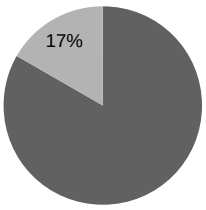
Wachusett Aqueduct Pumping Station

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.

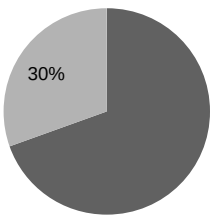
Notice to Proceed: 1-Mar-2016 *Contract Completion:* 14-Feb-2019

Status and Issues: As of September, the Contractor formed and tied rebar for the concrete walls of the influent/overflow channel and wet well. They excavated and installed conduits, rebar and concrete for the duct banks and paved the trench.

Money



Time



Alewife Brook Pump Station Improvements

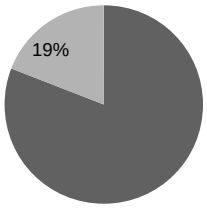
Project Summary: This project involves the replacement of wet-weather pumps, motors, gear drives, VFD's, MCC, screens, sluice gates, standby generator, roof, PLC's and HVAC. Also, the remediation of PCB's and asbestos and the installation of a flow meter on the 66-inch downstream Alewife Brook Conduit.

Notice to Proceed: 29-Jan-2016 *Contract Completion: 3*1-May-2018

Status and Issues: As of September, the Contractor demolished the retaining wall at the screen room and began the rebar installation. Additional work included dewatering of the cofferdam and the formation of the base slab of the discharge structure.

Projects In Construction
1st Quarter FY17

Money



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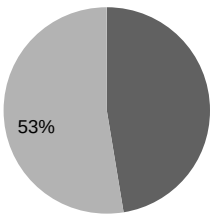


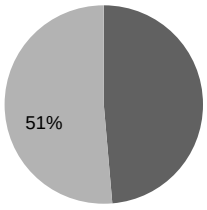
Caruso Pump Station Improvements

Project Summary: This project involves the replacement of the stand-by emergency generator and improvements to the HVAC, fire suppression and security systems at the Caruso Pump Station.

Notice to Proceed: 24-Mar-2016 *Contract Completion: 24*-Mar-2017

Status and Issues: As of September, the Contractor demolished AHU-3 and the 2nd floor supply ductwork for the hallway, men's and ladies rooms. MWRA staff oversaw the inspection of utilities imbedded in concrete and block walls, floor and ceiling in preparation of coring for electrical conduit penetrations.

Money



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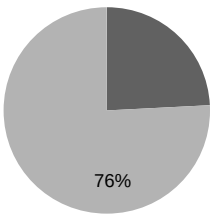


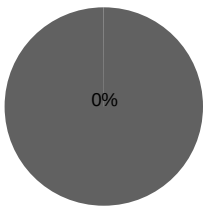
DITP Valves and Piping Replacements

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.

Notice to Proceed: 23-Jun-2014 *Contract Completion:* 22-Jun-2017

Status and Issues: The Contractor completed installation of the 12" PSC bypass pipe in the Residual Galleries. The PSL-A piping installation is approximately 98% complete.

Money



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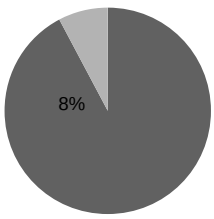


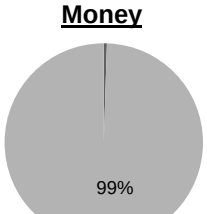
Winthrop Terminal VFD and Motor

Project Summary: This project involves the replacement of 6, 600-HP motors, VFDs and associated electrical components in the Winthrop Terminal Facility.

Notice to Proceed: 16-Jun-2016 *Contract Completion:* 12-Mar-2020

Status and Issues: The Contractor, JFW has begun preparing major equipment submittals. No physical work took place.

Money



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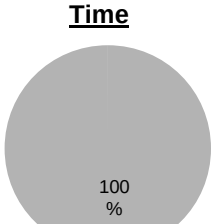


DITP Replacement of Scum Skimmers

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.

Notice to Proceed: 9-Oct-2013 *Contract Completion:* 10-Oct-2016

Status and Issues: The total punchlist work is 50% complete. The material for the tip tube extensions has been installed.

CSO CONTROL PROGRAM
1st Quarter – FY17

All 35 projects in the Long-Term CSO Control Plan are complete, in compliance with Schedule Seven. As of September 30, 2016, remaining CSO related capital spending totaling $13 million is authorized and scheduled through December 2020. Remaining work includes Cambridge's completion of surface restoration work associated with the Alewife/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 (2018-2020).

Project/Item	Status as of September 30, 2016
Reserved Channel Sewer Separation	BWSC attained substantial completion in December 2015, in compliance with Schedule Seven. BWSC continues to prepare as-built plans and close out its engineering and construction contracts. MWRA staff are conducting final eligibility reviews of the construction contracts for this and other CSO projects that were implemented by BWSC with MWRA funding.
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 completion of sewer separation and the closing of CSOs several years ago. MWRA's CIP includes $5.4 million for the inflow removal effort, of which $2.7 million has been transferred to the BWSC CSO account and $1.8 million of that has been withdrawn by BWSC to fund related design and construction work. Staff recently requested updated information from BWSC regarding its remaining system needs and its use of the remaining $3.6 million.
Cambridge/Alewife Brook Sewer Separation	The City of Cambridge attained substantial completion and permanently closed Outfall CAM004 in December 2015, in compliance with Schedule Seven. Extensive surface restoration work eligible for MWRA funding at a remaining award amount of $7.3 million is currently scheduled to continue through June 2017. Staff continue to obtain information to support review of Cambridge's request for an amendment to the CSO Memorandum of Understanding and Financial Assistance Agreement ("MOU/FAA") that would increase the total award amount by $1.6 million, from $98.7 million to $100.3 million and extend the MOU/FAA term by six months to December 2017 due to construction change orders and Cambridge's necessity to complete its ineligible water main replacement prior to completing CSO-eligible roadway restoration on Huron Avenue.
MWRA CSO Performance Assessment	Staff are evaluating system wet weather performance and performance predictions, including comparisons of MWRA and community meter data to MWRA model predictions. This is an early effort in support of developing an approach and scope for the three-year performance assessment Schedule Seven requires MWRA to conduct in the period 2018-2020. The Charles River and Alewife Brook/Upper Mystic River CSO variances recently extended by DEP to 2019 include a requirement that MWRA submit a draft scope to DEP by May 2017. MWRA's FY17 CIP includes funds for the three-year performance assessment.

CIP Expenditures
1st Quarter FY17

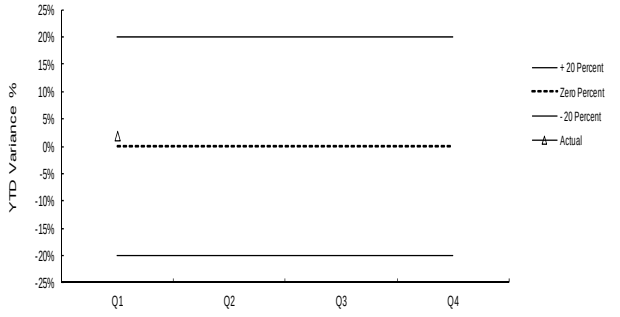
The Year-To-Date variances are highlighted below:

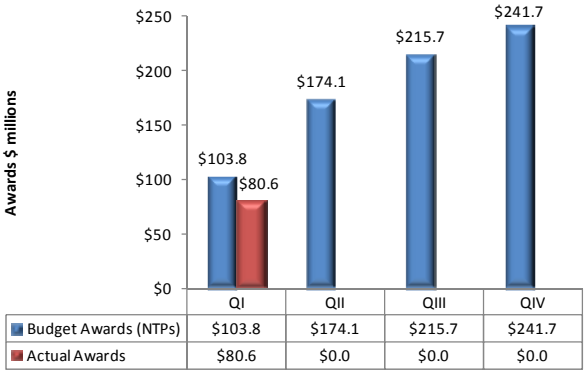
FY17 Capital Improvement Program Expenditure Variances through September by Program ($000)				
Program	FY17 Budget Through September	FY17 Actual Through September	Variance Amount	Variance Percent
Wastewater	11,227	13,082	1,855	17%
Waterworks	13,516	12,499	(1,017)	-8%
Business and Operations Support	1,645	1,460	(185)	-11%
Total	$26,388	$27,041	$653	2%

Overspending within Wastewater is primarily due to contractor progress on the Alewife Brook Pump Station Construction, Deer Island Fuel Oil System Upgrades, Digester Sludge Pump Phase 2, and Clinton Phosphorus Reduction contracts, as well as the timing of spending for the completion of the Chelsea Screenhouse upgrade contract. This was partially offset by less than anticipated progress for the Caruso Pump Station Improvements and construction issues with the North Main Pump Station and Winthrop Terminal Facility Butterfly Valve Replacement Construction contracts. Underspending in Waterworks is primarily due to construction issues resulting in less than anticipated progress for the Wachusett Aqueduct Pump Station Construction, timing of work for the Section 36/W11 C/S- A11 Valve contract, and slower than anticipated progress for the Rosemary Brook Building Repairs and Beacon Street Line Construction contracts. This was partially offset by additional work for the Webster Avenue Bridge Pipe Replacement Construction, timing of community water loan requests, and contractor progress for the Quabbin Power, Communications and Security contract.

CIP Expenditure Variance

Total FY17 CIP Budget of $155,702,000.





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 9/24/2016	$97.9 million
Unused capacity under the debt cap:	$1.218 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: Commercial paper capacity:	$128 million $350 million
Budgeted FY17 capital spending*:	$136 million

* Cash based spending is discounted for construction retainage.

DRINKING WATER QUALITY AND SUPPLY

Source Water – Microbial Results and UV Absorbance

1st Quarter – FY16

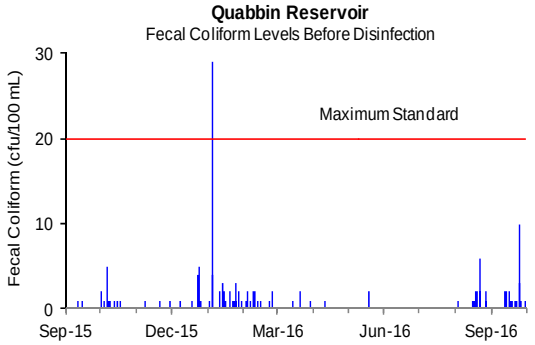
Source Water – Microbial Results

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. Brutsch Water Treatment Facility (formerly Ware Disinfection Facility) raw water tap before being treated and entering the CVA system.

All samples collected during the 1st Quarter were below 20 cfu/100ml. **For the current six-month period, 0.0% of the samples have exceeded a count of 20 cfu/100mL, compared to the allowable 10%.**

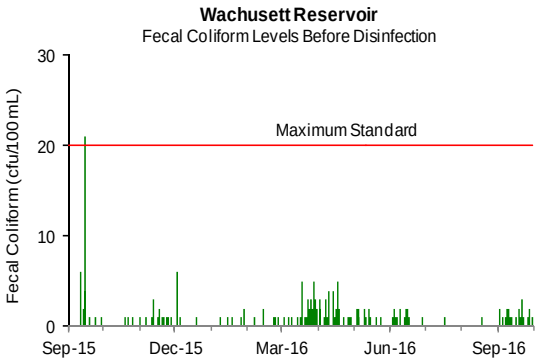


Sample Site: Wachusett Reservoir

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 1st Quarter were below 20 cfu/100ml. **For the current six-month period, 0.0% of the samples exceeded a count of 20 cfu/100mL.**

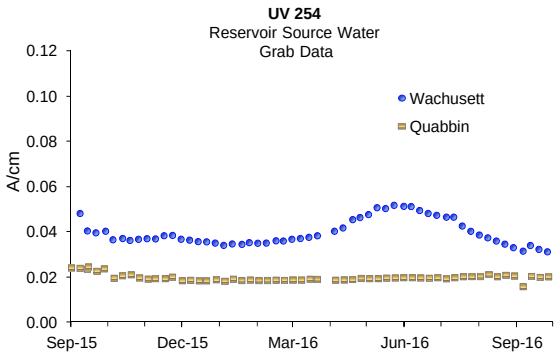


Source Water – UV Absorbance

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

Quabbin Reservoir UV-254 levels are currently around 0.020 A/cm.

Wachusett Reservoir UV-254 levels are currently around 0.031 A/cm.



Source Water – Turbidity

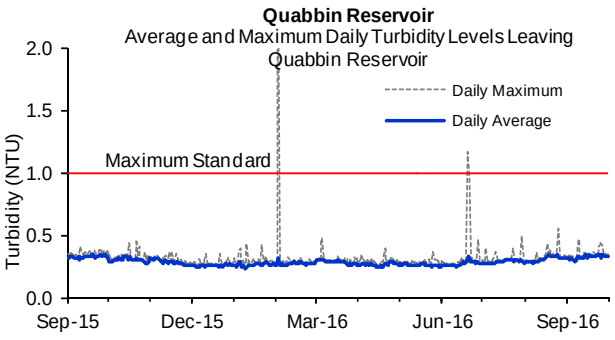
1st Quarter – FY16

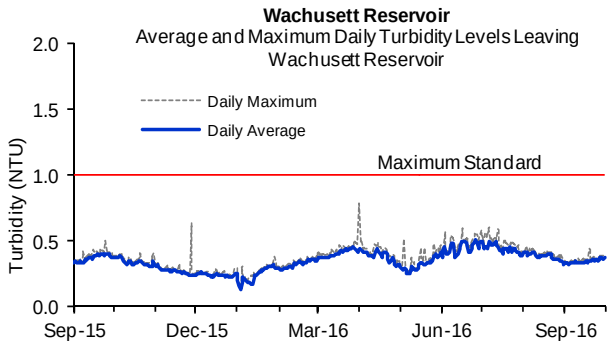
Turbidity is a measure of suspended and colloidal particles including clay, silt, organic and inorganic matter, algae and microorganisms. The effects of turbidity depend on the nature of the matter that causes the turbidity. High levels of particulate matter may have a higher disinfectant demand or may 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 Brutsch Water Treatment Facility (BWTF) before UV and chlorine disinfection. Turbidity of Wachusett Reservoir is monitored continuously at the Carroll Water Treatment Plant (CWTP) before ozonation and UV disinfection.

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



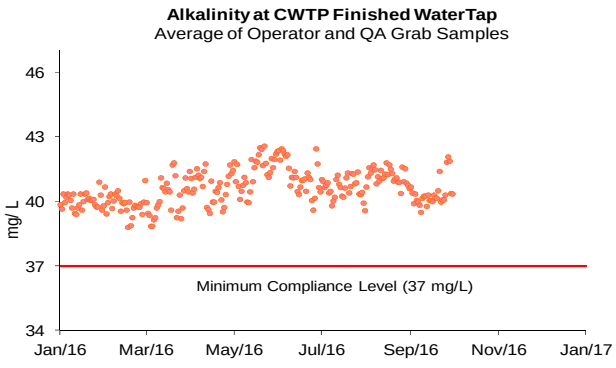


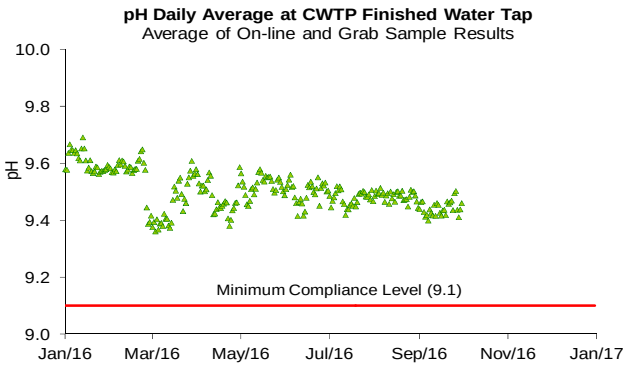
Treated Water – pH and Alkalinity Compliance

MWRA adjusts the alkalinity and pH of Wachusett water at CWTP to reduce its corrosivity, which minimizes the leaching of lead and copper from service lines and home plumbing systems into the water. MWRA tests finished water pH and alkalinity daily at the CWTP's Fin B sampling tap. MWRA's target for distribution system pH is 9.3; the target for alkalinity is 40 mg/l. Per DEP requirements, CWTP 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.

Distribution system samples were collected on September 7 and 8, 2016. Distribution system sample pH ranged from 9.3 to 9.7 and alkalinity ranged from 39 to 43 mg/L. No sample results were below DEP limits for this quarter.





Treated Water – Disinfection Effectiveness

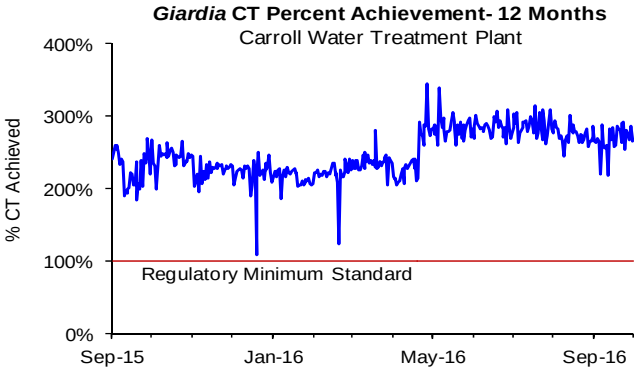
1st Quarter – FY16

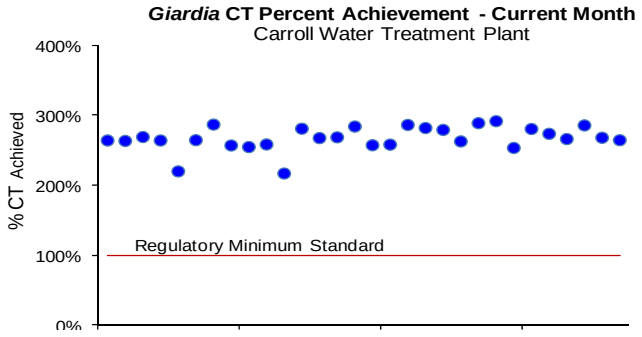
At the Carroll Water Treatment Plant (CWTP), MWRA meets the required 99.9% (3-log) inactivation of *Giardia* using ozone (reported as CT: concentration of disinfectant x contact time) and the required 99% (2-log) inactivation of *Cryptosporidium* using UV (reported as IT: intensity of UV x time). MWRA 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:

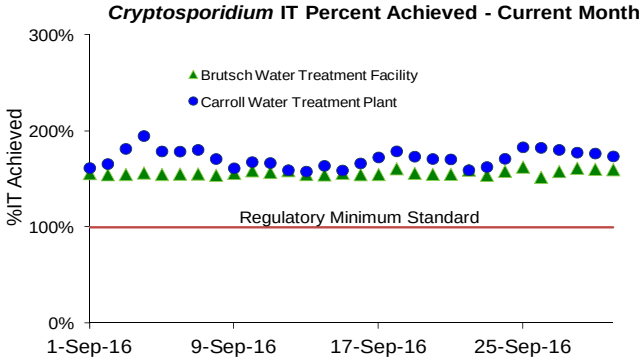
- Ozone dose at the CWTP varied between 1.0 to 2.0 mg/L for the quarter.
- *Giardia* CT was maintained above 100% at all times the plant was providing water into the distribution system this quarter, as well as every day for the last fiscal year.
- *Cryptosporidium* IT was maintained above 100% during the month. Off-spec water was less than 5%.

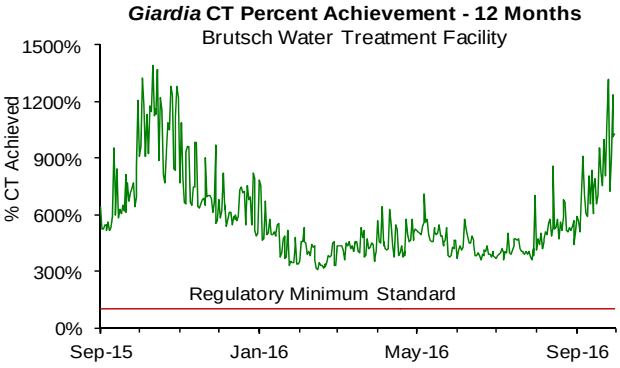


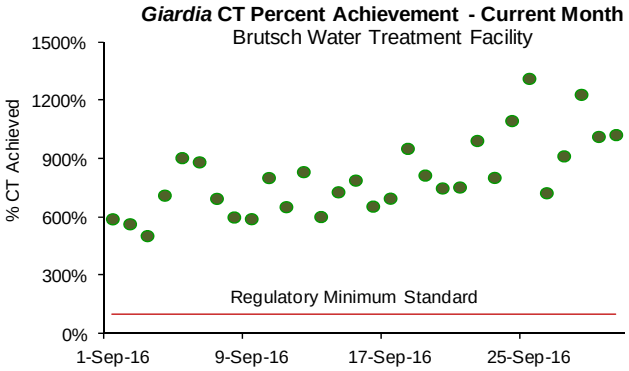


Quabbin Reservoir (CVA Supply) at: Brutsch Water Treatment Facility

- The chlorine dose at BWTF is adjusted in order to achieve MWRA's seasonal (June 1 – October 31) target of ≥1.0 mg/L at Ludlow Monitoring Station.
- The chlorine dose at BWTF ranged from 1.6 to 1.8 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%.







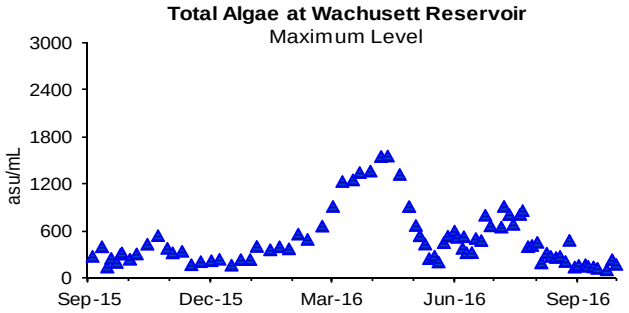
Source Water - Algae

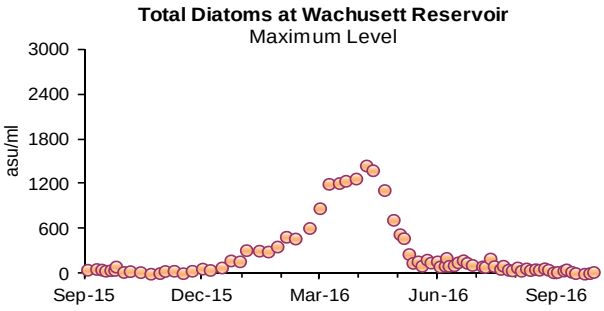
1st Quarter – FY16

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 1st Quarter, one complaint which may be related to algae was reported from a local water department.





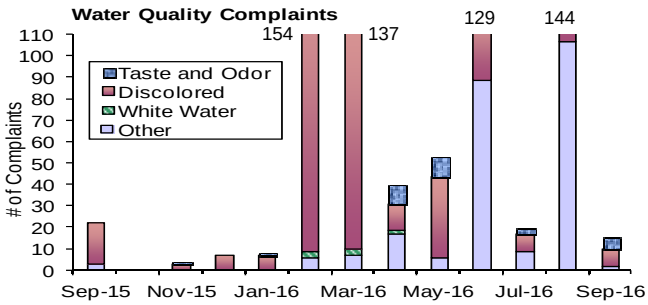
Drinking Water Quality Customer Complaints: Taste, Odor, or Appearance

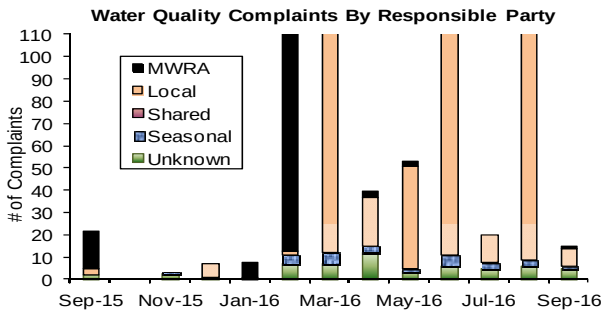
MWRA collects information on water quality complaints that typically fall into four categories: 1.) discoloration due to MWRA or local pipeline work; 2.) taste and odor due to algae blooms in reservoirs or chlorine in the water; 3.) white water caused by changes in pressure or temperature that traps 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 179 complaints during the quarter compared to 72 complaints for 1st Quarter of FY15. Of these complaints, 50 were for "discolored water" and 11 were for "taste and odor", and 118 were for "other". Of these complaints, 154 were local community issues, 2 were MWRA related, 7 were seasonal in nature, and 16 were unknown in origin.

•On August 2, Saugus reported one hundred no water complaints when a gate valve replacement was being performed.





Bacteria & Chlorine Residual Results for Communities in MWRA Testing Program

1st Quarter – FY17

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 1st Quarter, 14 of the 6,512 community samples submitted to MWRA labs for analysis tested positive for total coliform. Six of the 1,986 MWRA samples tested positive for total coliform. Three communities were required to conduct a Level 1 assessment since they had more than one positive total coliform sample (Bedford – August; South Hadley FD1, Winthrop - September). These were submitted to DEP within the required timeframe. On July 20, Finished Water Tap B at CWTP tested positive for total coliform and *E.coli*. All repeat samples were coliform free. Only 1.5 % of the samples had a chlorine residual lower than 0.2 mg/L for the quarter.

		# Coliform Samples (a)	Total Coliform # (%) Positive	E.coli # Positive	Assessment Required [e] Level 1 / 2	Violation [f]	Minimum Chlorine Residual (mg/L)	Average Chlorine Residual (mg/L)
MWRA		MWRA Locations	403	5 (1.24%)	1		1.92	2.57
	d	Shared Community/MWRA sites	1583	1 (0.06%)	0		0.03	2.13
		Total: MWRA	1986	6 (0.30%)	1	☐ / ☐	0.03	2.22
Fully Served		ARLINGTON	168	0 (0%)	0	☐ / ☐	0.13	1.86
		BELMONT	216	0 (0%)	0	☐ / ☐	0.07	1.63
		BOSTON	781	0 (0%)	0	☐ / ☐	1.23	2.41
		BROOKLINE	224	0 (0%)	0	☐ / ☐	0.56	2.16
		CHELSEA	169	0 (0%)	0	☐ / ☐	1.32	2.04
		DEER ISLAND	52	0 (0%)	0	☐ / ☐	1.64	2.14
		EVERETT	169	0 (0%)	0	☐ / ☐	0.75	2.26
		FRAMINGHAM	234	0 (0%)	0	☐ / ☐	0.37	2.20
		LEXINGTON	117	0 (0%)	0	☐ / ☐	1.13	2.26
		LYNNFIELD	18	0 (0%)	0	☐ / ☐	0.93	1.74
		MALDEN	238	1 (0.42%)	0	☐ / ☐	0.00	1.87
		MARBLEHEAD	72	0 (0%)	0	☐ / ☐	1.65	2.26
		MEDFORD	204	0 (0%)	0	☐ / ☐	1.20	1.86
		MELROSE	117	0 (0%)	0	☐ / ☐	0.18	1.89
		MILTON	101	0 (0%)	0	☐ / ☐	0.01	1.95
		NAHANT	30	0 (0%)	0	☐ / ☐	1.49	2.00
		NEWTON	276	0 (0%)	0	☐ / ☐	0.09	1.98
		NORTHBOROUGH	51	1 (1.96%)	0	☐ / ☐	0.40	2.05
		NORWOOD	99	0 (0%)	0	☐ / ☐	0.03	1.90
		QUINCY	302	1 (0.33%)	0	☐ / ☐	0.26	1.93
		READING	130	0 (0%)	0	☐ / ☐	0.40	1.71
		REVERE	180	0 (0%)	0	☐ / ☐	1.29	2.07
		SAUGUS	104	0 (0%)	0	☐ / ☐	1.38	1.96
		SOMERVILLE	272	0 (0%)	0	☐ / ☐	0.76	2.18
		SOUTHBOROUGH	30	0 (0%)	0	☐ / ☐	0.31	2.09
		STONEHAM	91	0 (0%)	0	☐ / ☐	1.84	2.28
		SWAMPSCOTT	57	1 (1.75%)	0	☐ / ☐	0.70	1.72
		WALTHAM	216	0 (0%)	0	☐ / ☐	0.69	2.19
		WATERTOWN	302	0 (0%)	0	☐ / ☐	0.61	2.10
		WESTBORO HOSPITAL	15	0 (0%)	0	☐ / ☐	0.07	0.55
		WESTON	47	0 (0%)	0	☐ / ☐	2.03	2.61
		WINTHROP	79	2 (2.53%)	0	☒ / ☐	0.29	1.90
		Total: Fully Served	*5161*	*6 (0.12%)*				
CVA&Partially Served	b	BEDFORD	66	3 (4.55%)	0	☒ / ☐	0.46	1.82
		CANTON	87	0 (0%)	0	☐ / ☐	0.03	1.17
		HANSCOM AFB	27	0 (0%)	0	☐ / ☐	0.07	1.71
		MARLBOROUGH	127	0 (0%)	0	☐ / ☐	0.08	2.49
		NEEDHAM	126	1 (0.79%)	0	☐ / ☐	0.08	1.00
		PEABODY	237	1 (0.42%)	0	☐ / ☐	0.22	1.87
		WAKEFIELD	147	0 (0%)	0	☐ / ☐	0.96	1.94
		WELLESLEY	106	0 (0%)	0	☐ / ☐	0.04	1.11
		WILMINGTON	85	0 (0%)	0	☐ / ☐	0.12	1.88
		WINCHESTER	91	0 (0%)	0	☐ / ☐	0.13	1.83
		WOBURN	195	0 (0%)	0	☐ / ☐	0.19	1.18
	c	SOUTH HADLEY FD1	57	3 (5.26%)	0	☒ / ☐	0.17	0.59
		Total: CVA & Partially Served	*1351*	*8 (0.59%)*				
		Total: Community Samples	*6512*	*20 (0.21%)*				

(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.
(e) The TCR requires an assesment be completed if more than 5% of all samples in a month are total coliform positive (or two or more samples are positive when fewer than 40 samples are collected each month).
(f) Some reasons a violation may occurr: the required # of TCR samples is not collected; failure to report; an E.coli MCL violation; coliform treatment techninque not followed properly; failure to conduct a level 1 or level 2 assessment within 30 days of trigger.

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

1st Quarter – FY17

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 locational running annual average (LRAA) standard is 80 µg/L for TTHMs and 60 µg/L for HAA5s.

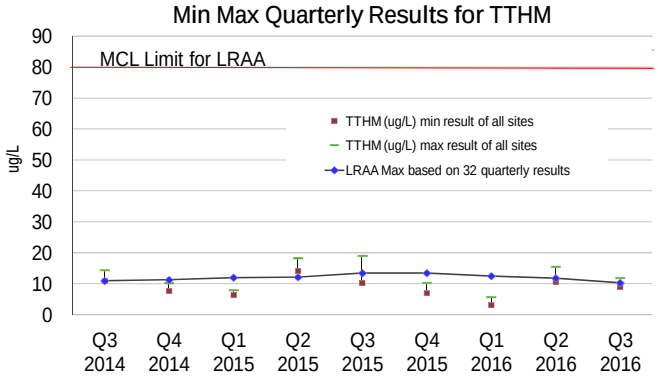
The locational running annual average at each individual sampling location must be below the standard. The charts below show the highest and lowest single values for all sites, and the LRAA of the highest location each quarter.

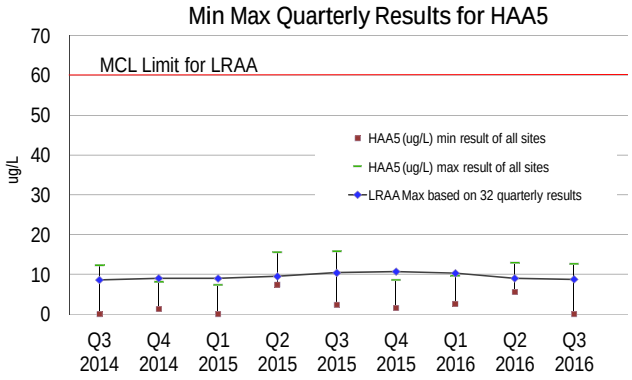
Partially served and CVA communities are responsible for their own compliance monitoring and reporting, and must be contacted directly for their individual results. The chart below combines all three CVA communities data (Chicopee, Wilbraham and South Hadley FD1).

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

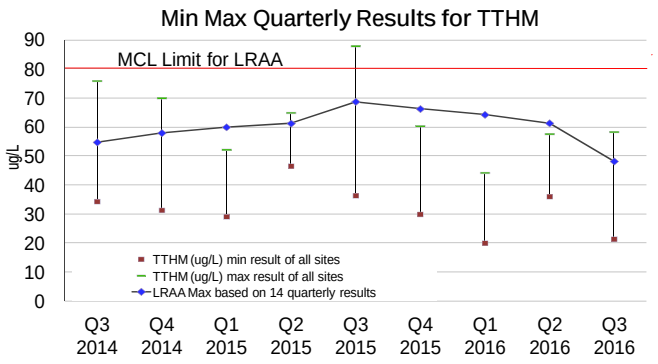
The LRAA for TTHMs and HAA5s for MWRA's Compliance Program (represented as the line in the top two graphs below) remain below current standards. The Max LRAA in the quarter for TTHMs = 10.4 ug/L; HAA5s = 8.8 ug/L. The current RAA for Bromate = 0.0 ug/L. CVA's DBP levels continue to be below current standards.

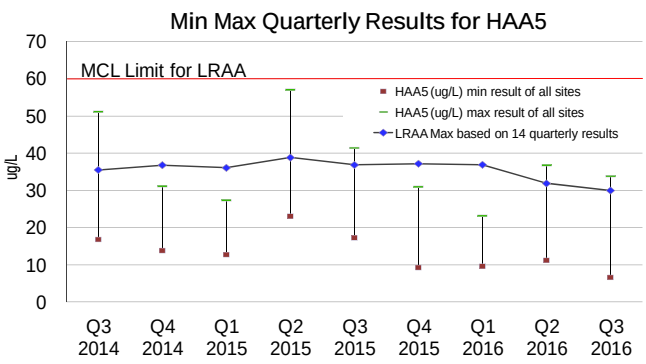
MetroBoston Disinfection By-Products





CVA Disinfection By-Products (Combined Results)





Water Supply and Source Water Management

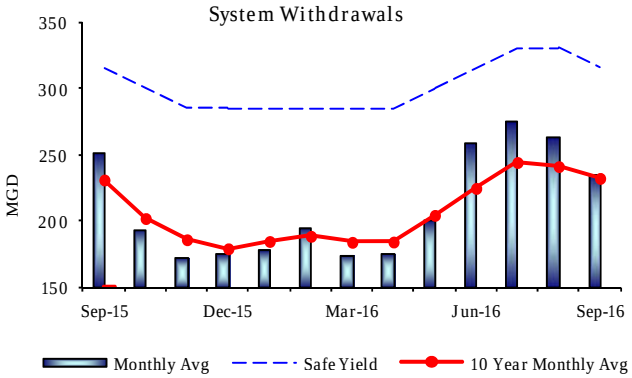
1st Quarter – FY17

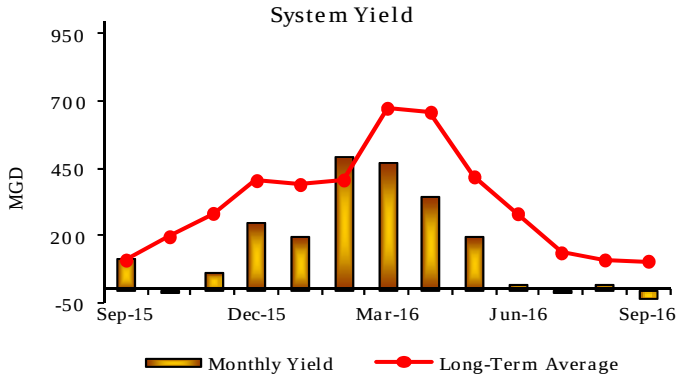
Background

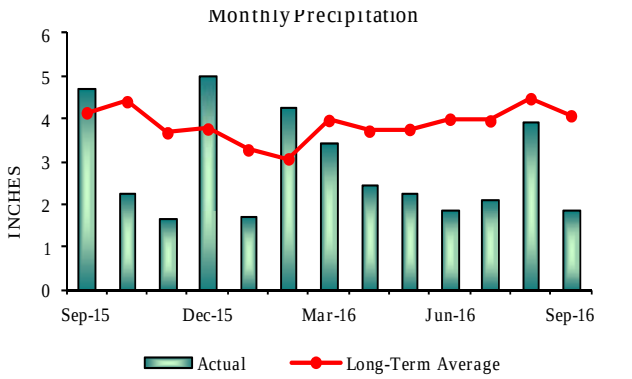
A reliable supply of water in MWRA's reservoirs depends on adequate precipitation during the year and seasonal hydrologic inputs from watersheds that surround the reservoirs. Demand for water typically increases with higher summer temperatures and then decreases as temperatures decline. Quabbin Reservoir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

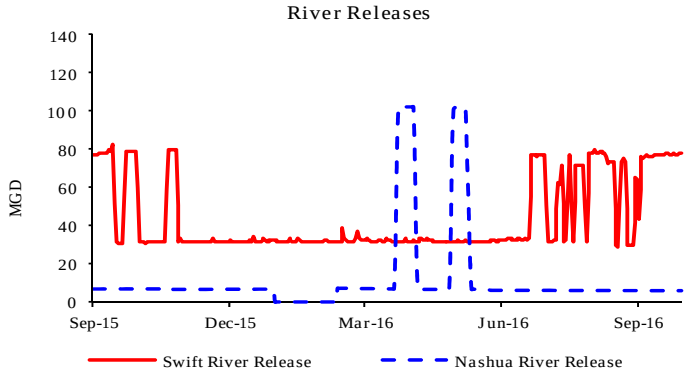
Outcome

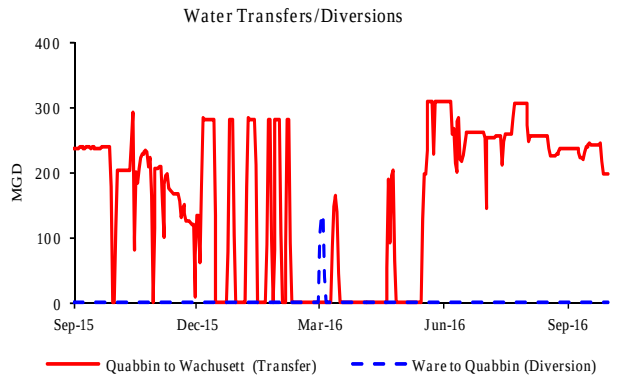
Quabbin Reservoir level remained within the normal operating range for this period of the year. The volume of the Quabbin Reservoir was at 82.5% as of September 30, 2016; a 7.6% decrease for the quarter, which represents a loss of more than 31 billion gallons of storage. Yield and precipitation for the quarter were below their respective quarterly long term averages. System withdrawal for the quarter is above the 10 year monthly average.

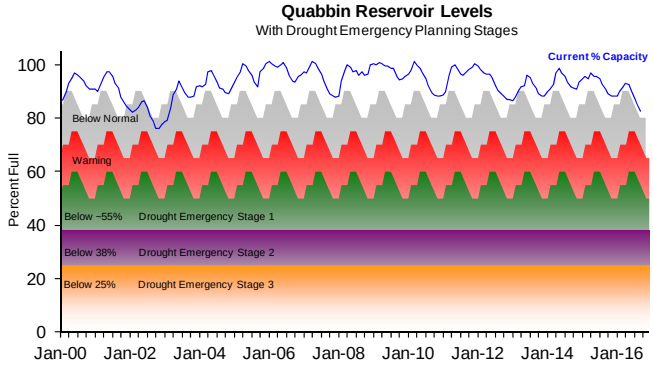












WASTEWATER QUALITY

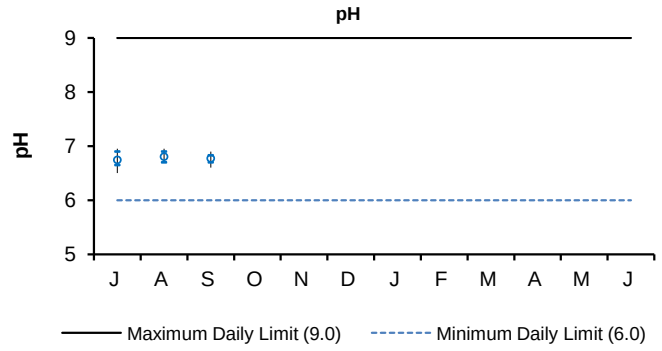
NPDES Permit Compliance: Deer Island Treatment Plant

1st Quarter - FY17

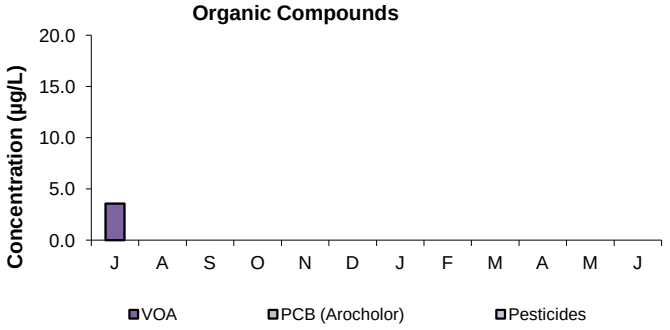
NPDES Permit Limits

Effluent Characteristics		*Units*	*Limits*	*July*	*August*	*September*	*1st Quarter Violations*	*FY17 YTD Violations*
Dry Day Flow:		mgd	436	256.7	254.9	253.9	0	0
cBOD:	Monthly Average	mg/L	25	4.9	4.6	5.5	0	0
	Weekly Average	mg/L	40	6.3	4.9	6.5	0	0
TSS:	Monthly Average	mg/L	30	7.7	6.4	6.8	0	0
	Weekly Average	mg/L	45	9.7	7.3	7.5	0	0
TCR:	Monthly Average	ug/L	456	<40	<40	<40	0	0
	Daily Maximum	ug/L	631	<40	<40	<40	0	0
Fecal Coliform:	Daily Geometric Mean	col/100mL	14000	6	6	7	0	0
	Weekly Geometric Mean	col/100mL	14000	14	14	13	0	0
	% of Samples >14000	%	10	0	0	0	0	0
	Consecutive Samples >14000	#	3	0	0	0	0	0
pH:		SU	6.0-9.0	6.5-7.0	6.7-7.0	6.7-7.2	0	0
PCB, Aroclors:	Monthly Average	ug/L	0.000045	UNDETECTED			0	0
Acute Toxicity:	Mysid Shrimp	%	≥50	>100	>100	>100	0	0
	Inland Silverside	%	≥50	>100	>100	>100	0	0
Chronic Toxicity:	Sea Urchin	%	≥1.5	100	100	100	0	0
	Inland Silverside	%	≥1.5	50	50	25	0	0

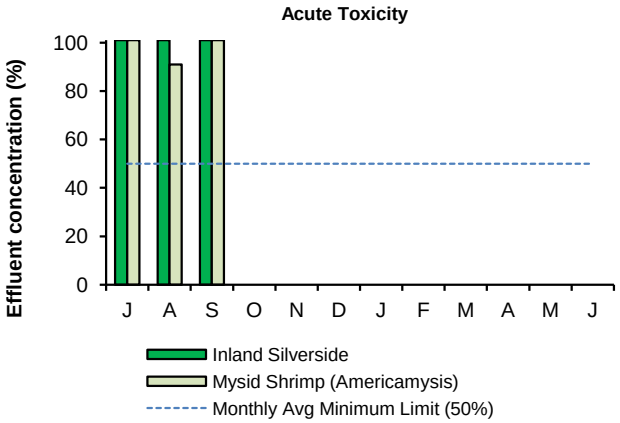
There have been no permit violations in FY16 to date at the Deer Island Treatment Plant.



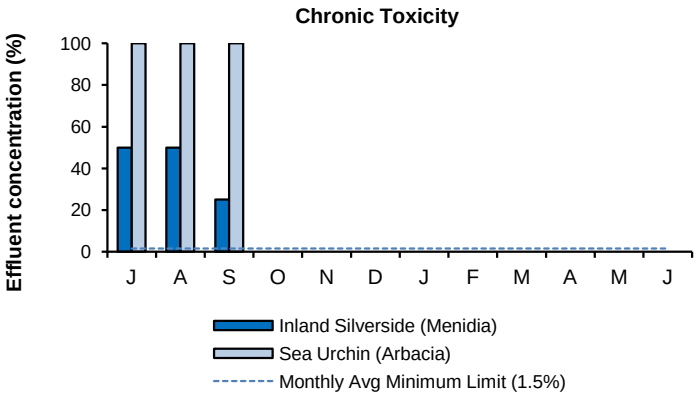
pH is a measure of alkalinity or acidity. Fluctuations in effluent pH are unlikely to impact on marine environments, which have significant buffering capacity. Because of the pure oxygen used in the activated sludge process, effluent pH tends to be at the lower end of the permit-required range. All pH measurements for the 1st 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 1st Quarter, some volatile organic compounds were detected in the effluent in July. 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 1st Quarter for both the inland silverside and mysid shrimp.



Typically, effects of chronic exposures differ from those of acute exposures. Because of this, chronic toxicity responses are not necessarily related to acute toxicity. The chronic toxicity test simulates the long-term toxic effects of chemicals in wastewater effluent on marine animals. To meet permit limits, a solution of 1.5% effluent and 98.5% dillution water must show no observed effect on the growth and reproduction of the test species. Chronic toxicity permit limits were met for the 1st Quarter for both the inland silverside and sea urchin.

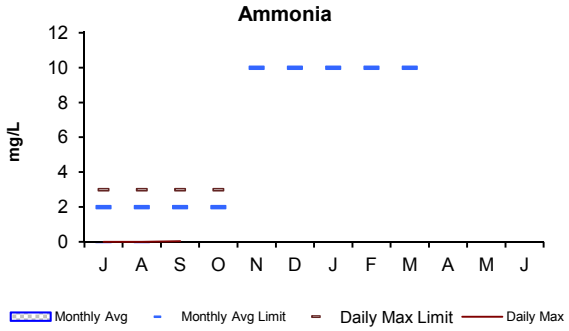
NPDES Permit Compliance: Clinton Wastewater Treatment Plant

1st Quarter - FY17

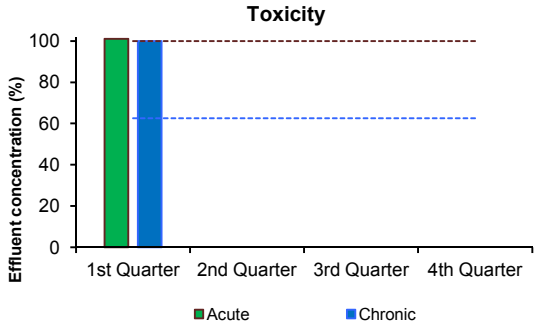
NPDES Permit Limits

Effluent Characteristics		*Units*	*Limits*	*July*	*August*	*September*	*1st Quarter Violations*	*FY17 YTD Violations*
Flow:		mgd	3.01	2.45	2.39	2.33	0	0
BOD:	Monthly Average:	mg/L	20	2.0	2.0	2.3	0	0
	Weekly Average:	mg/L	20	2.5	2.5	2.4	0	0
TSS:	Monthly Average:	mg/L	20	3.9	3.5	2.7	0	0
	Weekly Average:	mg/L	20	5.7	4.3	3.0	0	0
pH:		SU	6.5-8.3	7.1-7.6	7.0-7.4	7.1-7.7	0	0
Dissolved Oxygen:	Daily Minimum:	mg/L	6	6.9	6.7	6.8	0	0
Fecal Coliform:	Daily Geometric Mean:	col/100mL	400	32	19	9	0	0
	Monthly Geometric Mean:	col/100mL	200	6	4	4	0	0
TCR:	Monthly Average:	ug/L	50	0	0.0	0.0	0	0
	Daily Maximum:	ug/L	50	0.0	0.0	0.0	0	0
Total Ammonia Nitrogen:	June 1 - October 31							
	Monthly Average:	mg/L	2.0	0.00	0.00	0.01	0	0
	Daily Maximum:	mg/L	3.0	0.00	0.00	0.05	0	0
Copper:	Monthly Average:	ug/L	20	9.9	9.0	7.2	0	0
Phosphorus:	May 1 - Oct 31							
	Monthly Average:	mg/L	1.0	--	0.00	0.00	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

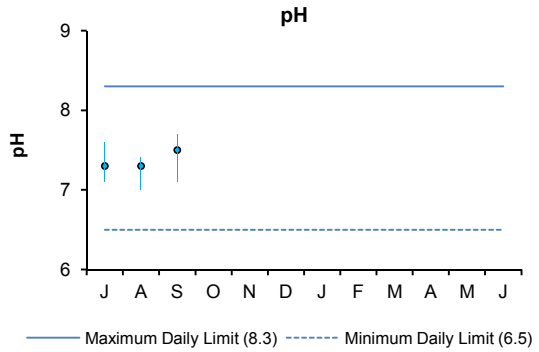
There have been no permit violations in FY17 at the Clinton Treatment Plant.
1st Quarter: There had been no permit violations in the first quarter.
*Toxicity testing at the Clinton Treatment Plant is conducted on a quarterly basis.



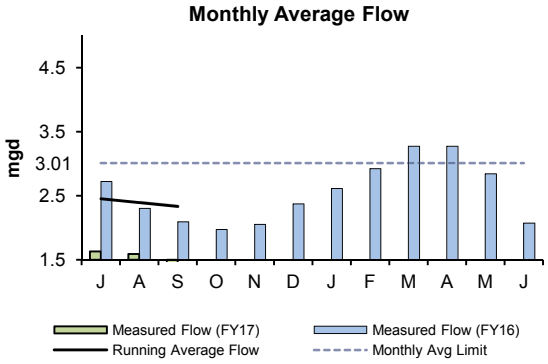
The 1st Quarter's monthly average and daily maximum concentrations were below the permit limits. The monthly average and daily maximum limits for the 1st Quarter are 2 mg/L and 3 mg/L, respectively. The permit limits are most stringent from June to October when warm weather conditions are most conducive 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 1st Quarter.



pH is a measure of the alkalinity or acidity of the effluent. All daily pH results for the 1st 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. The average monthly flows during this Quarter were below the NPDES permit limit.

COMMUNITY FLOWS AND PROGRAMS

Total Water Use

MWRA Core Customers

1st Quarter - FY17

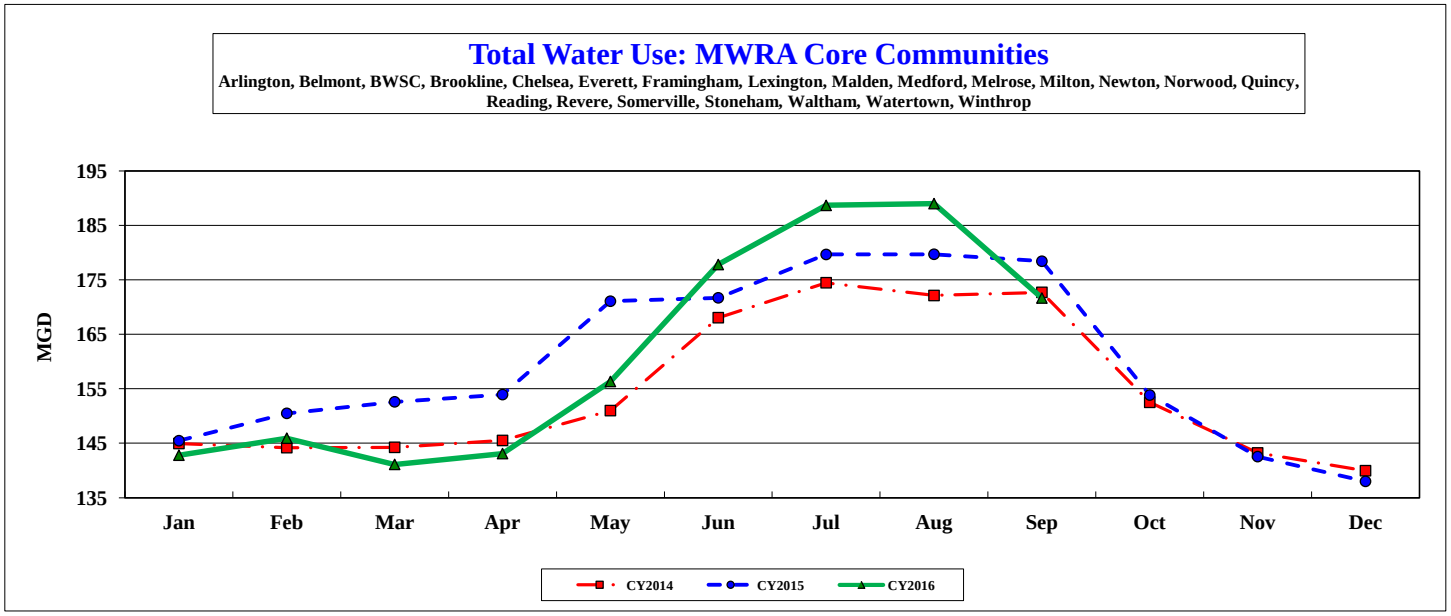
YTD CHANGES (CY16 vs. CY15)
Water Supplied
-1.5%

Water Supplied: MWRA Fully Served Communities*

*** Receive 100% MWRA Water Service**

MGD	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD Average	Average
CY2014	144.952	144.193	144.251	145.510	150.994	168.049	174.461	172.119	172.696	152.513	143.221	139.960	155.697	154.461
CY2015	145.466	150.488	152.603	153.932	171.068	171.693	179.652	179.689	178.407	153.846	142.547	138.005	164.899	159.839
CY2016	142.805	145.930	141.117	143.104	156.336	177.803	188.663	188.986	171.658	0.000	0.000	0.000	161.913	161.913

MG	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD Total	Total
CY2014	4,493.498	4,037.400	4,471.778	4,365.293	4,680.819	5,041.483	5,408.299	5,335.689	5,180.887	4,727.900	4,296.634	4,338.762	37,834.259	56,378.442
CY2015	4,509.447	4,213.655	4,730.692	4,617.960	5,303.114	5,150.793	5,569.210	5,570.350	5,352.198	4,769.225	4,276.398	4,278.141	45,017.419	58,341.183
CY2016	4,426.966	4,231.967	4,374.642	4,293.123	4,846.430	5,334.082	5,848.546	5,858.579	5,149.726	0.000	0.000	0.000	44,364.060	44,364.060



The September 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.

September 2016 water supplied of 230.9 mgd (for revenue generating users) is down 1.3 mgd or 0.5% compared to September 2015. September 2016 water use includes 8.9 mgd provided to the City of Worcester.

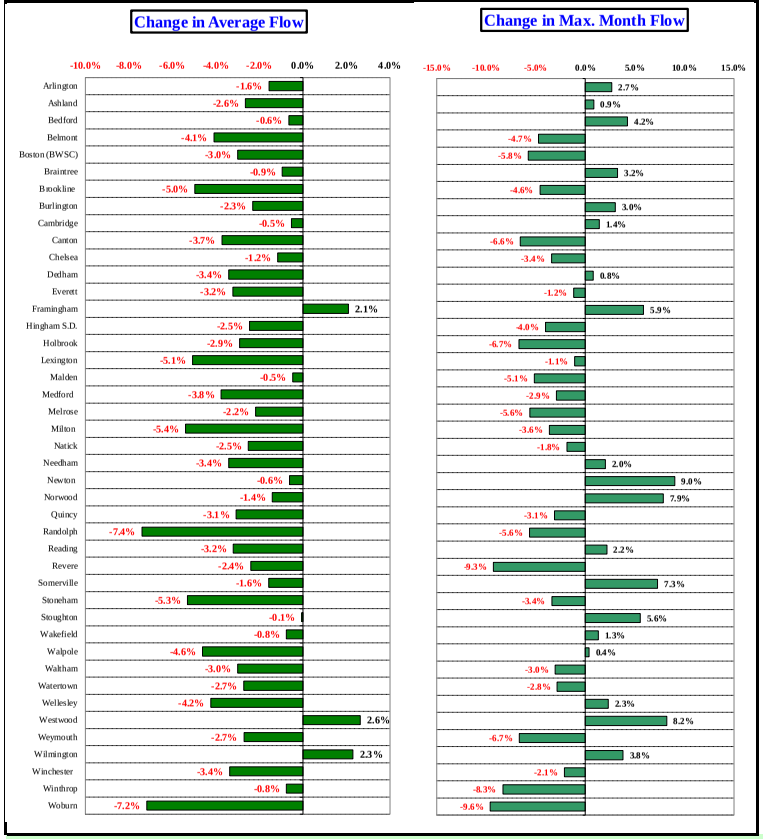
System-wide year to date consumption for CY16 remains higher than CY15 with 206.4 mgd being supplied to MWRA customers **through September**. This is 2.5 mgd higher than CY15, and is an increase of 1.2%.

Community Wastewater Flows

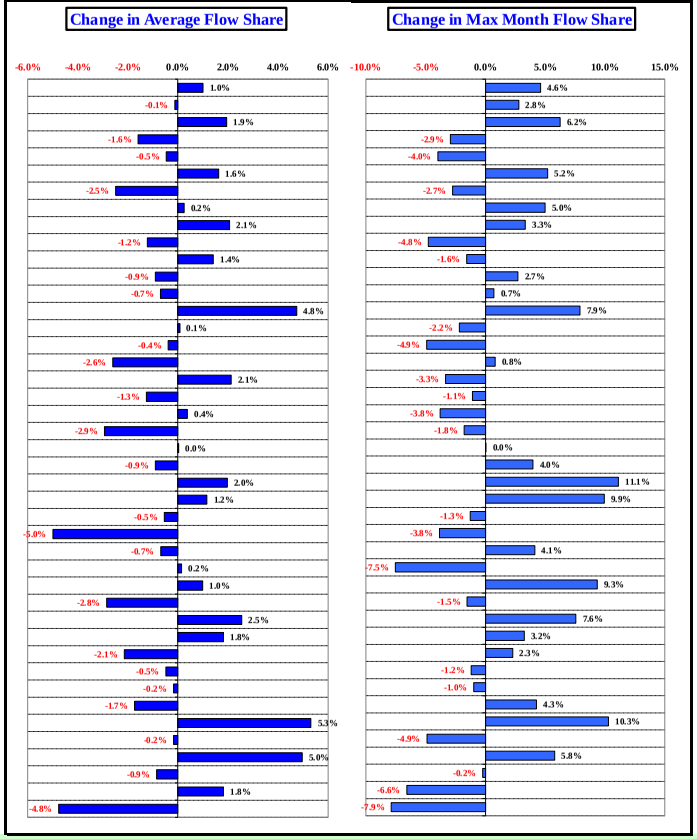
1st Quarter - FY17

How Projected CY2016 Community Wastewater Flows Could Effect FY2018 Sewer Assessments [1,2,3]

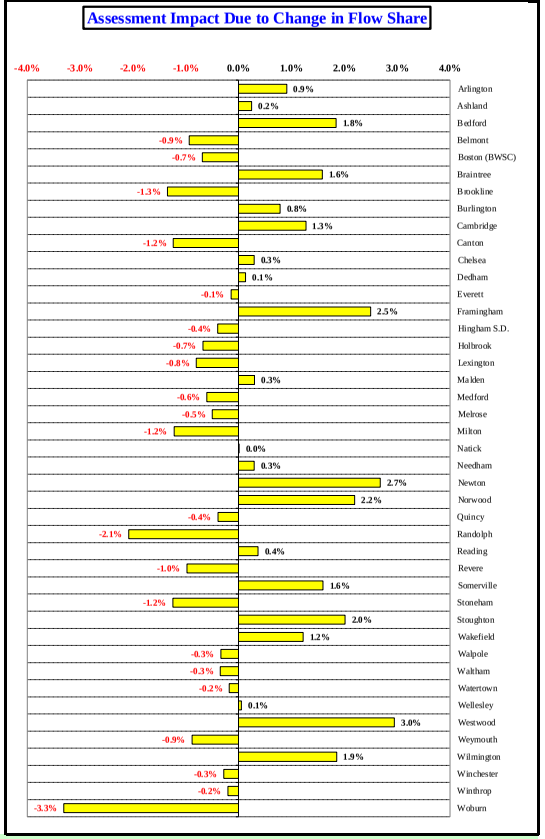
The flow components of FY2018 sewer assessments will be calculated using a 3-year average of CY2014 to CY2016 wastewater flows compared to FY2017 assessments that used a 3-year average of CY2013 to CY2015 wastewater flows.



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. [4]



Notes:

[1] MWRA uses a 3-year flow average to calculate sewer assessments. Three-year averaging smoothes the impact of year-to-year changes in community flow share, but does not eliminate the long-term impact of changes in each community's relative contribution to the total flow.

[2] Based on CY2013 to CY2016 average wastewater flows as of 10/12/16. Flow data is preliminary and subject to change pending additional MWRA and community review.

[3] CY2013 to August CY2016 wastewater flows based on actual meter data. September to December 2016 flows based on the average of the prior three years.

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

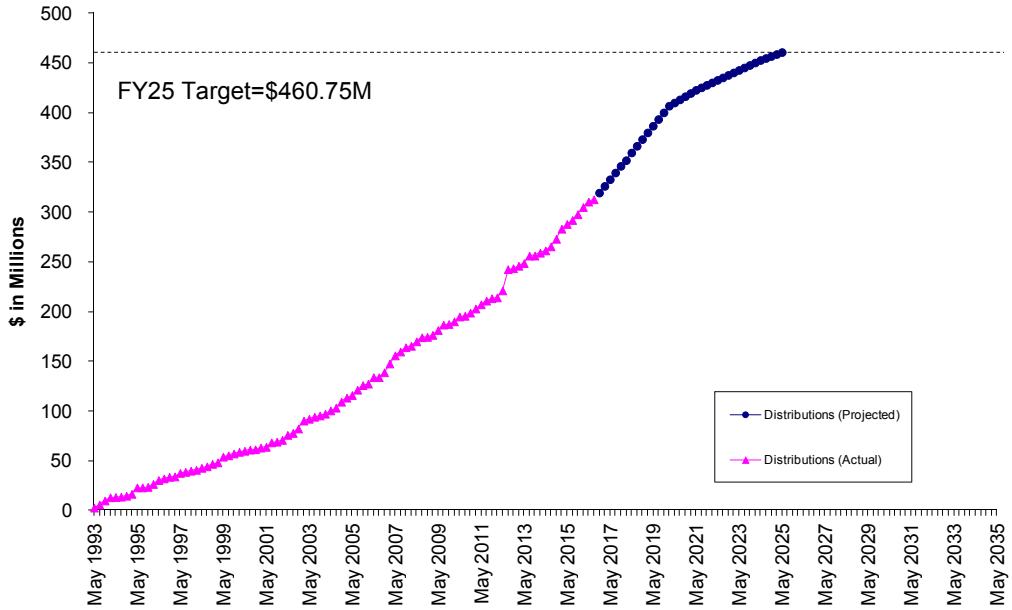
Community Support Programs

1st Quarter – FY17

Infiltration/Inflow Local Financial Assistance Program

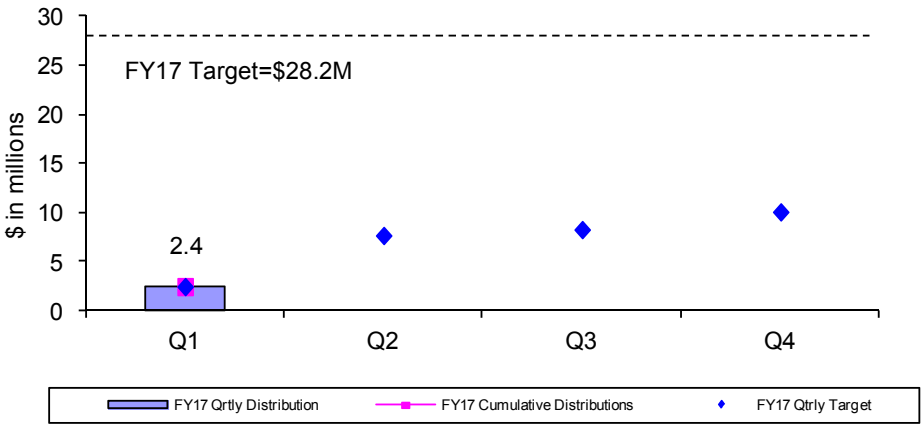
MWRA's Infiltration/Inflow (I/I) Local Financial Assistance Program provides $460.75 million in grants and interest-free loans (average of about $14 million per year from FY93 through FY25) to member sewer communities to perform I/I reduction and sewer system rehabilitation projects within their locally-owned 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 and 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 1st Quarter of FY17, $2.4 million in financial assistance (grants and interest-free loans) was distributed to fund local sewer rehabilitation projects in Everett, Reading and Winchester. Total grant/loan distribution for FY17 is $2.4 million. From FY93 through the 1st Quarter of FY17, all 43 member sewer communities have participated in the program and more than $312 million has been distributed to fund 511 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.

FY17 Quarterly Distributions of Sewer Grant/Loans



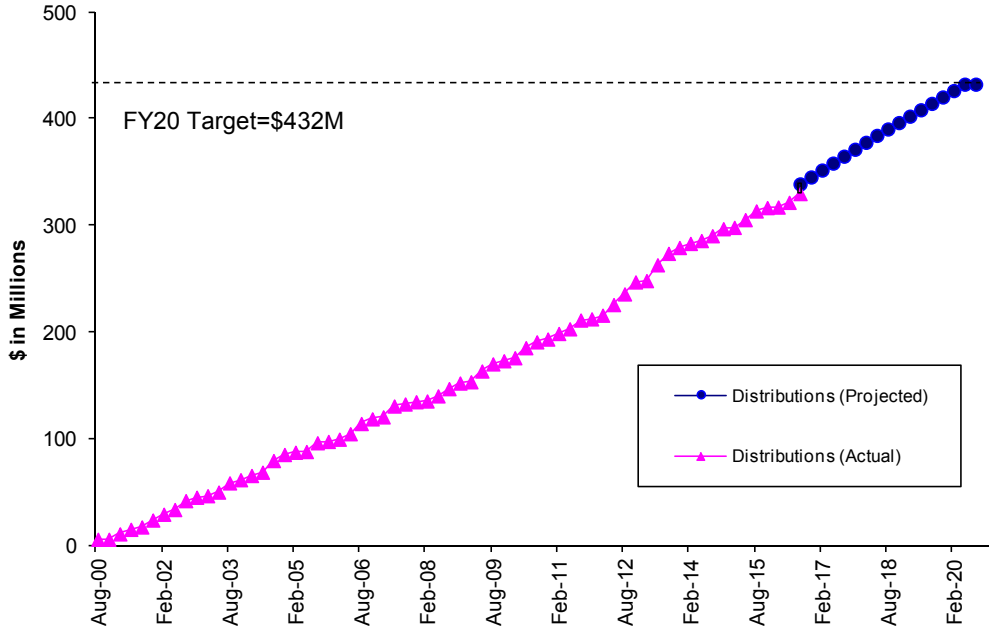
Community Support Programs

1st Quarter – FY17

Local Water System Assistance Program

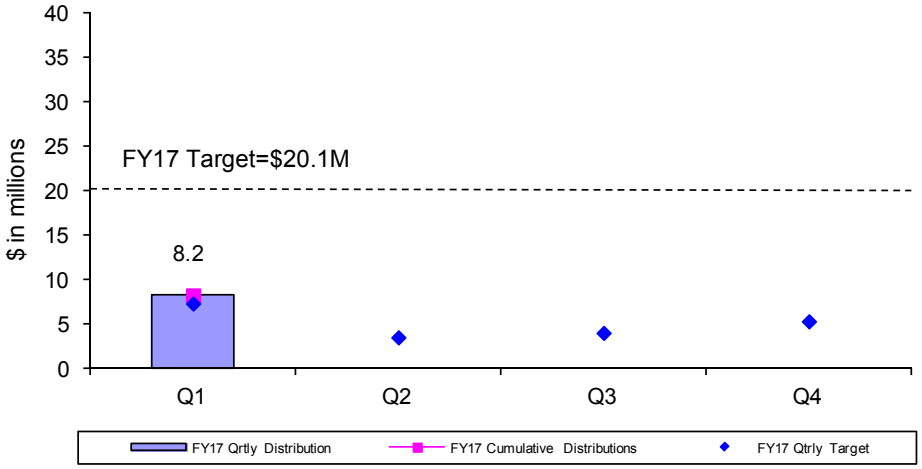
MWRA's Local Water System Assistance Programs (LWSAP) provides $432 million in interest-free loans (an average of about $22 million per year from FY01 through FY20) to member water communities to perform water main rehabilitation projects within their locally-owned water distribution systems. Eligible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

Local Water System Assistance Program Distribution FY01-FY20



During the 1st Quarter of FY17, $8.2 million in interest-free loans was distributed to fund local water projects in Boston, Everett, Nahant, Norwood, Quincy and Swampscott. Total loan distribution for FY17 is $8.2 million. From FY01 through the 1st Quarter of FY17, more than $330 million has been distributed to fund 373 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.

FY17 Quarterly Distributions of Water Loans

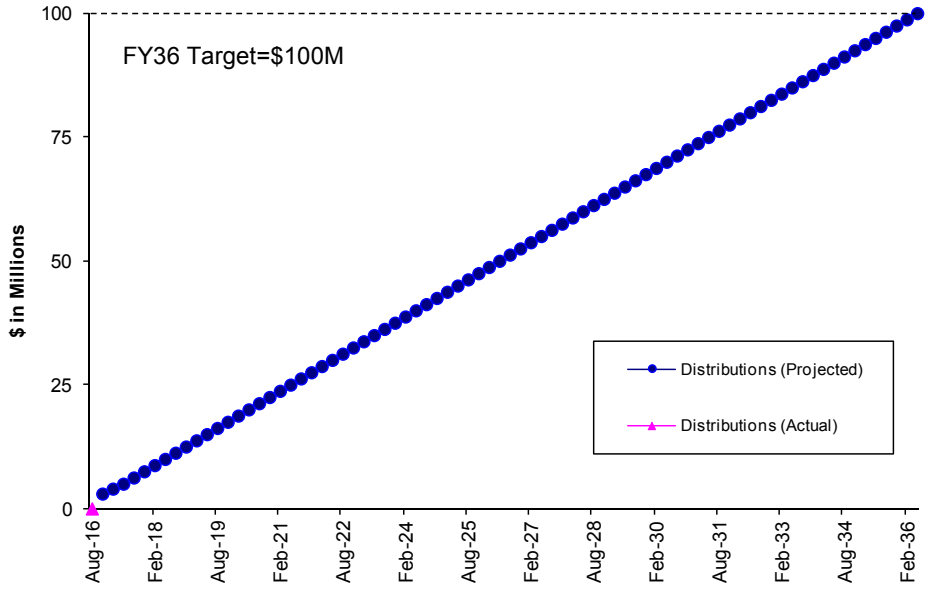


Community Support Programs
1st Quarter – FY17

Lead Service Line Replacement Loan Program

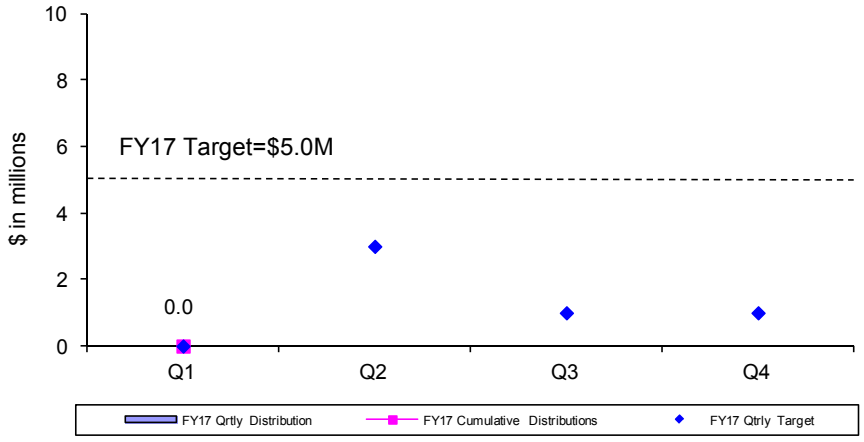
By its vote on March 16, 2016, the Board approved an enhancement to the Local Water System Assistance Program to provide up to $100 million in 10-year zero-interest loans to communities solely for efforts to fully replace lead service lines. The Lead Service Line Replacement Loan Program is also referenced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

Lead Service Line Replacement Loan Program Distributions FY17-FY36



FY17 is the first year of the Lead Service Line Replacement Loan Program. During the 1st Quarter of FY17, no interest-free loan funds were distributed to member water communities. Although the Board has not set a time limit for distribution of the approved $100 million in loan funds, for budget purposes, staff have targeted distributions at $5.0 million per year over 20 years.

FY17 Quarterly Distributions of Lead Service Line Replacement Loans

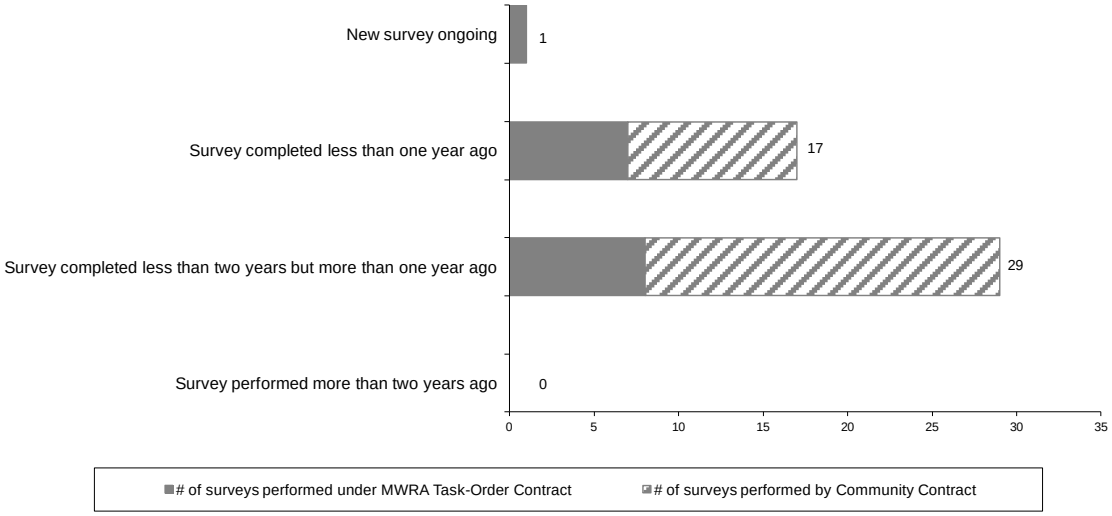


Community Support Programs

1st Quarter – FY17

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 1st Quarter of FY17, all member water communities were in compliance with MWRA's Leak Detection Regulation.



Community Water Conservation Outreach

MWRA's Community Water Conservation Program helps to maintain average water demand below the regional water system's safe yield of 300 mgd. Current 5-year average water demand is less than 205 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	324				324
Low-Flow Fixtures (showerheads and faucet aerators)	10,000	3,162				3,162
Toilet Leak Detection Dye Tablets	------	2,265				2,265

BUSINESS SERVICES

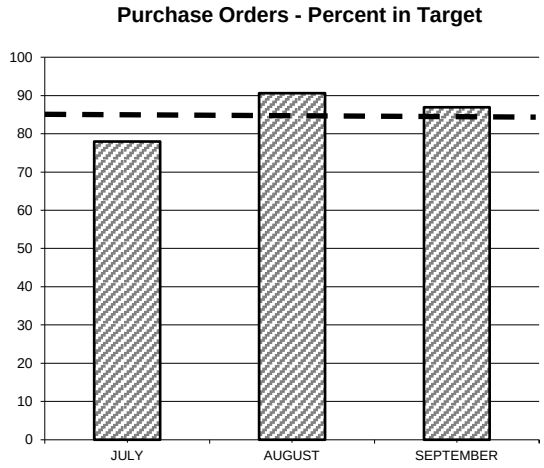
Procurement: Purchasing and Contracts

1st Quarter - FY17

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

Outcome: Processed 86.9% of purchase orders within target; Average Processing Time was 4.69 days vs. 5.92 days in Qtr 1 of FY16. Processed 75% (18 of 24) of contracts within target timeframes; Average Processing Time was 101 days vs. 100 days in Qtr 1 of FY16.

Purchasing



	No.	TARGET	PERCENT IN TARGET
$0 - $500	730	3 DAYS	77.5%
$500 - $2K	745	7 DAYS	90.0%
$2K - $5K	349	10 DAYS	94.2%
$5K - $10K	45	25 DAYS	80.0%
$10K - $25K	49	30 DAYS	89.7%
$25K - $50K	10	60 DAYS	70.0%
Over $50K	19	90 DAYS	89.4%

The Purchasing Unit processed 1,947 purchase orders, 278 less than the 2225 processed in Qtr 1 of FY16 for a total value of $2,639,781 versus a dollar value of $9,316,838 in Qtr 1 of FY16.

The purchase order processing target was not met for the $0 - $500 due to vendor sourcing and the $25k - $50k due to staff summary requirements.

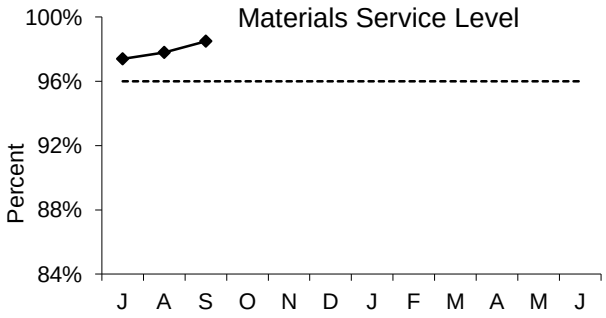
Contracts, Change Orders and Amendments

Six contracts were not processed within the target timeframes. One was due to extended negotiations of contract terms and conditions, delaying contract finalization and execution; two were due to timing of award to coincide with expiration of existing task order contracts and delays associated with conforming document approvals and required changes to insurance documents; and another was due to scheduling prioritization (new contract is in place according to schedule and budget needs.) In addition, one contract (Insurance Program Renewal FY17) was not processed within the target timeframe due to additional procurement requirements necessary for insurance services. However, insurance for all categories of coverage was obtained timely and according to schedule. The final contract was not processed within the target timeframe due to the contractor's delay in accepting the MWRA's contractual terms and conditions, resulting in a delay of the notice to proceed.

Procurement processed twenty four contracts with a value of $9,851,658 and eight amendments with a value of $102,694. Twenty six change orders were executed during the period. The dollar value of all non-credit change orders during Q1 FY17 was $1,607,680 and the value of credit change orders was

Materials Management

1st Quarter - FY17



The service level is the percentage of stock requests filled. The goal is to maintain a service level of 96%. Staff issued 6,926 (97.9%) of the 7,071 items requested in Q1 from the inventory locations for a total dollar value of $1,421,715.

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 FY17 goal is to reduce consumable inventory from the July '16 base level ($8.10 million) by 2.0% (approximately $162,164), to $7.94 million by June 30, 2017 (see chart below).

Items added to inventory this quarter include:

- Deer Island – temperature controller seal kit, pump head and VFD for HVAC; circular saw blade, label cartridges, cables and variable speed drive for Residuals; proximity sensor for I&C; actuator assembly knobs and longitudinal head shaft for Liquid Train; check valves, spring kits, conveyor belts and wear ring cases for Power & Pump.
- Chelsea – tire pressure sensors, power steering hoses, a/c switches and a/c compressors for Fleet Services; fittings, transformer and motor for Field Operations; fuses and lamps for Work Order Coordination; o-rings, fuses, filters and seals for Engineering and Construction; manhole covers and frames for Metro Maintenance; anodes, junction boxes and shunts for Water Operations and Maintenance.
- Southboro – plungers and fittings for Facilities Maintenance; drinking water pump, brush unit and Telog data logger for Quality Assurance; toners for Administration.

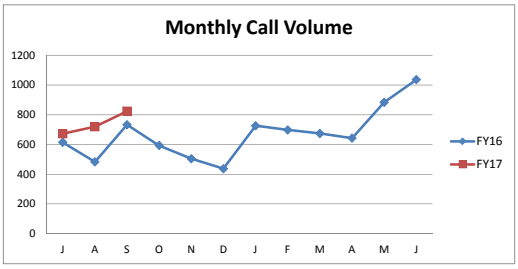
Property Pass Program:

- Six audits were conducted during Q1.
- Numerous obsolete flow switches, keyboards, printers, monitors, power supplies and cameras have been received into Property Pass as surplus. Disposition is being handled as part of our ongoing recycling efforts.
- Scrap revenue received for Q1 amounted to $4,740. Year to date revenue received amounted to $4,740.
- Revenue received from online auctions held during Q1 amounted to $60,930. Year to date revenue received amounted to $60,930.

Items	Base Value July-16	Current Value w/o Cumulative New Adds	Reduction / Increase To Base
Consumable Inventory Value	8,108,240	7,942,988	-165,252
Spare Parts Inventory Value	8,841,332	8,736,320	-105,012
Total Inventory Value	16,949,572	16,679,308	-270,264

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.

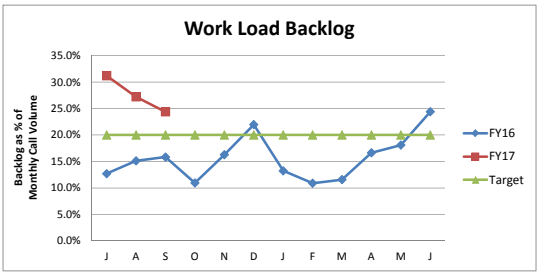
MIS Program
1st Quarter FY17

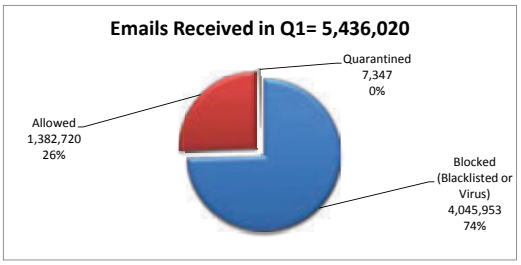


Performance and Backlog

Call Volume: Peaked in September. FY17-Q1 call volume increased by 21% from FY16-Q1.

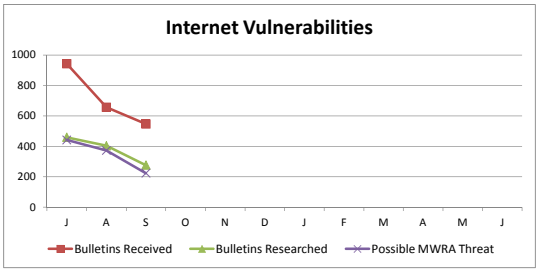
Call Backlog: Peaked in July. FY17-Q1 backlog average is 7.6% above the targeted benchmark of 20%.





Information Security

During Q1, pushed security fixes/updates to desktops/ servers to protect against 336 vulnerabilities. LANDesk Antivirus quarantined 31 distinct viruses from 26 PCs. PCs are current with anti-virus providers' signatures for all known malware.



Infrastructure:

Citrix Mobile Application Design and Development: Test and validation of monthly Worx updates. Sharefile job-aid and quick reference guide posted to Pipeline. Office Web Application Server deployed to support View-Only capabilities with Sharefile. XenMobile development environment built. Developing upgrade path for XenMobile server updates in support of iOS10. Scheduling resources for the build of the Disaster Recovery environment.

Applications/Training/Records Center:

Library Catalog Replacement Project (InMagic): Completed design and testing of the new Library Resources Portal Home page and search results pages. Completed integration of O&M manuals into the Library catalog.Created browsable collections for popular categories of documents, and new book and journal issue displays for the home page. Prepared loan records for final switch to new system and prepared list of beta testers and an email invitation for an October go-live with beta-testers. Library operations switched to the new system.

ApplicantPro (Talent Acquisition): Completed a final pass of the Job Templates and made final configuration changes. Created a job aid for Hiring Managers to set up an Outlook rule to forward the "Requisition Needs Approval" email to their delegate. Supported a Hiring Manager presentation in the Chelsea. Began designing data export process for records retention requirements. Went live September 19th and by the end of the 2nd week, 127 applications (22 internal candidates) were received for 21 posted jobs.

Miscellaneous Lawson Support: Successfully ran payroll at DITP Disaster Recovery Site using Bottomline and Century Bank; there were no issues. Met with users to begin documenting requirements for the Hyperion Pillar application replacement. Tested and updated all three Infor/Lawson servers with mandatory BSI Tax software updates. Several staff attended two day NELUG (New England Lawson User Group) Conference.

Lawson-Maximo Interface: Initial programming completed for 15 of 17 of Infor/Lawson-Maximo interface connections, two of which have been tested. Data scrubbing and consolidation continued, predominately focused on the Property Pass database.

Information Security Program: Continue User Awareness Training with the release of three additional training modules added July 1st , to date 79% of all employees have completed all seven modules.

LIMS/Electronic Library Notebook: Several ELN logs were developed and 95% of logs for Phase I have been completed .

Maximo Upgrade Project: Conducted User Acceptance Testing (UAT) of Asset Management and Calibration Applications. Trained 40 staff on Maximo Advanced Asset Management. 30% of Maximo Crystal reports have been converted successfully to the new version.

Library & Records Center: The Library fulfilled 35 research requests, and provided 175 periodicals, standards, books & reports. Research topics included tunnel redundancy, Deer Island archaeology, and the Harbor cable. The Records Center added 182 boxes, handled 415 boxes, disposed of 587 boxes and attended 2 Records Conservation Board Meetings.

IT Training: For the quarter, 60 staff attended 8 classes. 5% of the workforce has attended at least one class year-to-date. 137 staff completed the Information Security Awareness training held in 18 sessions at Chelsea and Deer Island. 42 staff completed MAXIMO 7.6 Advanced Asset Management training. New job-aids were developed for new Audio Visual Equipment installed in conference rooms. The Learning Management System (LMS) hosting Computer-based Training (CBT) was upgraded to version 3.1 on the production server.

Legal Matters

1st Quarter - FY17

PROJECT ASSISTANCE

COURT AND ADMINISTRATIVE ORDER

- **NPDES:** Reviewed EPA's NPDES Application and Program Updates; Reviewed 2015 Outfall Monitoring Overview submittal.
- **Water Quality Variances:** Reviewed final determinations on three-year extensions to water quality variances issued by MADEP for CSO discharges to the Lower Charles River/Charles Basin and to the Alewife Brook/Upper Mystic River.

REAL ESTATE, CONTRACT AND OTHER SUPPORT

- **Deer Island:** Reviewed and provided comments on an agreement for the installation and maintenance of an Irish Memorial on Deer Island.
-
- **Public Access:** Finalized 8(m) permit for Pine Brook Country Club's use of Weston Aqueduct land which allows for public access in conjunction with the Town of Weston and the Weston Forest and Trail Association's 8(m) public access permit.
- **Watershed Preservation Restriction:** Reviewed and approved four (4) Quabbin Reservoir Watershed Acquisitions W-000916; W-000033; W-000960; and W-000970 all in Petersham, MA.
- **Order of Conditions:** Recorded Certificate of Compliance for DEP File 337-1094 related to work at Shaft 5A in Weston.
- **Watertown Section Rehabilitation Contract # 7222:** Drafted Tolling Agreements with the designer and construction contractor for the project.
- **Ogin Energy:** Drafted demand to remove turbine from Deer Island.
- **UAS Certification Process:** Received Drone certification letter from Office of Attorney General.
- **Loring Road and JJCWTP:** Sent Notices of Termination of the PPA with NSTAR for the Loring Road and the Interconnection Services Agreement for the John J. Carroll Water Treatment Plant to allow MWRA to remain in compliance with the safe harbor provisions of U.S. Treasury regulation 1.141-7(f)(3) which permits MWRA to enter into a series of power output agreements, none of which has a term in excess of three years. Successor Agreements will be put in place to replace the current Agreements upon termination.
- **Cross Harbor Cable:** Continued to prosecute and defend the litigation commenced by the Army Corps of Engineers ("ACoE") through the U.S. Attorney regarding an alleged permit violation for failure to place the cable in the location required by permit.
- **Great Esker Park:** Finalized Third and Final Annual Compliance Report pursuant to Admin. Consent Order.

MISCELLANEOUS

- Reviewed and approved sixty-one (61) Section 8(m) Permits.
- Completed final review of lists of files to be disposed under Records Conservation Board Procedures.

LABOR, EMPLOYMENT AND ADMINISTRATIVE

New Matters

Three demands for arbitration were filed.
A Charge was filed at the Massachusetts Commission Against Discrimination alleging that the MWRA discriminated against an employee on the basis of sex, female.

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 a dismissal from the MCAD for lack of probable cause of a charge of discrimination on the basis of race, color, and retaliation.

LITIGATION/TRAC

New Matters

United States (Army Corps of Engineers) v. NStar, Harbor Electric Energy Company and MWRA, U.S. District Court, C.A. No. 16-11470-RGS: The United States, acting on behalf of the Army Corps. of Engineers (ACoE) commenced a civil action in U.S. District Court in Boston against the three defendants seeking to force compliance by them with certain depth requirements in a 1989 permit which allowed HEEC's cross-harbor cable to be placed beneath the Boston Harbor main shipping channel and beneath the Reserved Channel. ACoE asserts that the cable is not at the required permit depths and that its current position will interfere with a major dredging project which is intended to provide multiple "deep-draft" berths for use by MassPort. The complaint seeks as relief either or both (i) injunctive relief compelling the removal or relocation of the cable to bring its depth into compliance with the permit's requirements, or (ii) an assessment of penalties for the non-compliance with the permit. MWRA intends to defend against the lawsuit by asserting that MWRA was a permittee in name only, that MWRA does not own or control the cable, and that NStar and HEEC alone are the responsible parties.

Significant Claim Not in Court

There are no Significant Claims.

Significant Developments

United States (Army Corps of Engineers) v. NStar, et al., U.S. District Court, C.A. No. 16-11470-RGS: MWRA filed its Answer to the Complaint of the U.S. including the assertion of cross-claims seeking indemnification and other relief for the alleged misplacement of the cross harbor cable by NStar and HEEC and alleged non-compliance with the depth requirements of the Army Corps dredging permit. MWRA staff and outside counsel continue to follow developments and scheduling concerning potential interference by cable with Massport's intended deep draft berths (10 and 11). Prepared and filed MWRA's Initial Disclosure statement and provided assistance with opposition to Plaintiff's Motion for Summary Judgment and to co-defendants' motion to dismiss MWRA's cross-claims. Prepared motion papers to dismiss state court appeal so that claims against HEEC and NStar can be asserted as cross-claims in new federal district court lawsuit.

Matters Concluded

Western Surety Company, as Assignee and Subrogee of Interstate Engineering Corp. v. MWRA; Suffolk Superior Court C.A. No. 13-0893F and Western Surety Company, as Assignee and Subrogee of Interstate Engineering Corp.; Suffolk Superior Court C.A. No. 15-2300: The first case, served on MWRA in 2013, arose out of MWRA Contract 7063, Heat Loop Construction 3, Deer Island Treatment Plant, and the work of Interstate Engineering Corp. as the general contractor. MWRA withheld $136,186.99 from Interstate due to a leaking expansion joint that was part of the new primary heating water pipe system installed by Interstate, which had already repaired another new expansion joint that had begun leaking. The withheld amount consisted of retainage plus MWRA's good faith estimate of $100,000.00 as the cost to repair the second leaking expansion joint. During the course of the lawsuit, a third expansion joint (out of four in total) also began leaking. MWRA awarded separate contracts for repair of the second and third leaking expansion joints. Western Surety provided payment and performance bonds for the Heat Loop project. Interstate went out of business shortly after completing its work on the Heat Loop Contract. Western Surety claimed entitlement to the entire amount withheld by MWRA based on an assignment and indemnification agreement executed by Interstate in favor of Western Surety. MWRA's position was that because the cost to repair the failed expansion joints exceeded the sum withheld by MWRA, MWRA owed no money to Interstate, and accordingly, Western Surety had no right of recovery against MWRA.

The second case arose out of MWRA Contract 6966, Gravity Thickener Improvements – Phase I Deer Island Treatment Plant. Interstate was also the general contractor on this project. Western Surety executed and delivered payment and performance bonds to MWRA in the sum of $538,940.00. MWRA paid Interstate $82,555.00, but withheld the Contract balance of $456,385.00 from Interstate as liquidated damages per the Contract, because of Interstate's excessive delay in completing its Contract work. Western's suit sought recovery of the $456,385.00 withheld from Interstate. MWRA and Western Surety agreed to a monetary settlement of $300,000.00 for both cases. Out of the total funds that MWRA withheld on both Contracts, MWRA retained approximately $292,500 in the settlement, which is sufficient to compensate MWRA for its actual costs to repair the defective expansion joints under Contract 7063, and for Interstate's late performance under Contract 6966. The settlement also leaves the performance bonds in place in the event that additional claims under either Contract arise in the future. The parties filed Stipulations of Dismissal with Prejudice with the Superior Court in both cases, and final judgments of dismissal have been entered by the Court.

Subpoenas

During the First Quarter of FY 2017, no new subpoenas were received and no subpoenas were pending at the end of the First Quarter FY 2017.

Public Records

During the First Quarter of FY 2017, nine public records requests were received and four public records requests were closed.

SUMMARY OF PENDING LITIGATION MATTERS

TYPE OF CASE/MATTER	As of Sept 2016	As of June 2016	As of March 2016
Construction/Contract/Bid Protest (other than BHP)	3	5	5
Tort/Labor/Employment	1	1	2
Environmental/Regulatory/Other	2	2	2
Eminent Domain/Real Estate	0	0	0
total – all defensive cases	**6**	**8**	**9**
Affirmative cases not in suit:	0	0	0
Other Litigation matters (restraining orders, etc.) MWRA v. Thomas Mercer MWRA v. NSTAR and HEEC	2	2	2
total – all pending lawsuits	**8**	**10**	**11**
Significant claims not in suit:	0	0	2
Bankruptcy	2	2	2
Wage Garnishment	14	14	14
TRAC/Adjudicatory Appeals	0	2	3
Subpoenas	0	0	0
TOTAL – ALL LITIGATION MATTERS	**24**	**28**	**32**

TRAC/MISC.

New Appeals No new cases were received.

Settlement by Agreement of Parties Nova Biomedical Corporation; MWRA Docket No. 16-01

Stipulation of Dismissal Digital Silver Imaging, LLC; MWRA Docket No. 15-02

Notice of Dismissal Fine paid in full No cases of Notices of Dismissal, Fine paid in full.

Tentative Decisions No Tentative Decisions were issued in the 1st Quarter FY 2017.

Final Decisions One Final Decision was issued in the 1st Quarter FY 2017.

INTERNAL AUDIT AND CONTRACT AUDIT ACTIVITIES

1st Quarter FY17

Highlights

During the 1st quarter, Internal Audit (IA) completed 3 construction labor burden reviews, 2 consultant preliminary reviews and 1 incurred cost audit. Audits of the CNY Building 39 lease and the Griffin Way lease were completed. An assessment of the current controls over mobile equipment, laptops and other electronics, was conducted to determine if controls are adequate and functioning as intended to reduce the risk of loss or theft. The MWRA overhead rate for FY17 was prepared, as well as the rate for the Fore River Railroad Corporation billings.

Status of Recommendations

There were 12 recommendations made in FY17 and 11 of these have been closed. An additional 2 recommendations were closed from prior 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 (issue dates)	Audit Recommendations		
	Total	Closed	Open
Hardware Equipment Management Report (5/22/13)	36	30	6
Follow-Up Report on Fleet Services Activities (12/31/13)	17	13	4
8(m) Permit Fees (11/17/14)	6	4	2
Records Management (12/5/14)	8	6	2
Unmatched Receipts and Accruals (6/30/15)	10	5	5
Halon Inspections at DITP (9/30/15) & Caruso and DeLauri (12/31/15)	18	15	3
Warehouse Cycle Counts at DITP (11/5/15), Southboro (11/6/15) and Chelsea (12/4/15)	25	18	7
Security System Alarms (3/3/16)	3	1	2
AVL Tracking 2016 (5/6/16)	9	*3*	*6*
MIS Mobile Equipment Asset Tracking (9/26/16)	12	*11*	*1*
Total Recommendations	***144***	***106***	***38***

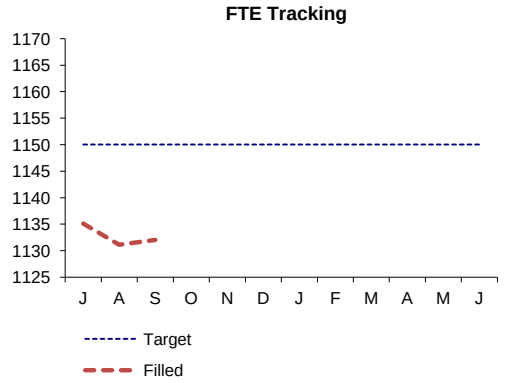
Cost Savings

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.

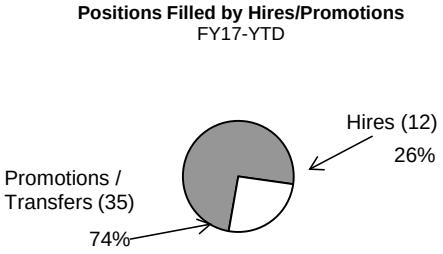
Cost Savings	FY13	FY14	FY15	FY16	FY17 (1Q)	TOTAL
Consultants	$587,314	$294,225	$87,605	$88,312	$3,901	$1,061,357
Contractors & Vendors	$2,153,688	$415,931	$1,146,742	$1,772,422	$323,548	$5,812,331
Internal Audits	$391,083	$923,370	$543,471	$220,929	$54,726	$2,133,579
Total	**$3,132,085**	**$1,633,526**	**$1,777,818**	**$2,081,663**	**$382,175**	**$9,007,267**

OTHER MANAGEMENT

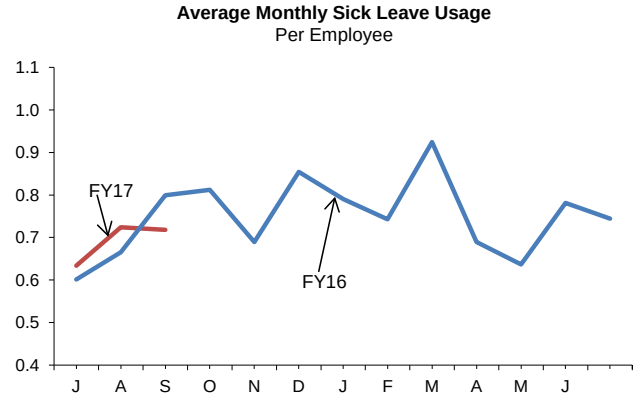
Workforce Management
1st Quarter FY17



FY17 Target for FTE's = 1150
FTE's as of Sept 2016 = 1132



	Pr/Trns	Hires	Total
FY14	111 (69%)	51 (31%)	162
FY15	133 (67%)	65 (33%)	198
FY16	99 (62%)	60 (38%)	159
FY17	35 (74%)	12 (26%)	47



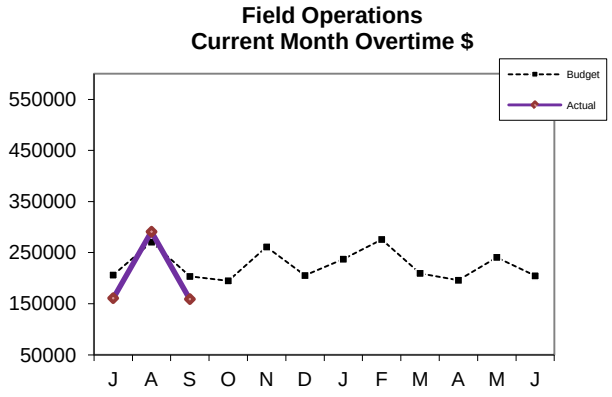
Bitmap Average monthly sick leave for the 1st Quarter of FY17 was approximately the same as the 1st Quarter of FY16 (8.30 to 8.26 days)

Average monthly sick leave for the 1st Quarter of FY17 was approximately the same as the 1st Quarter of FY16 (8.30 to 8.26

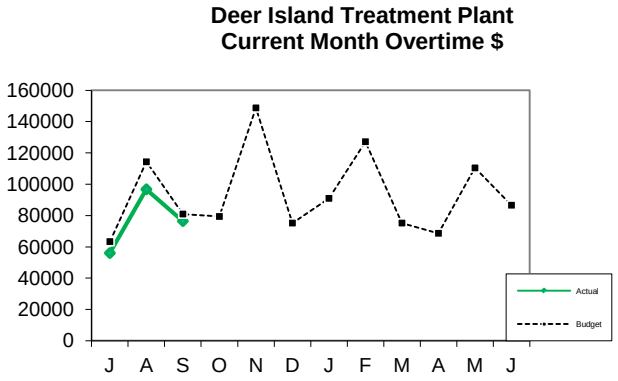
In Q1 of FY17, the average quarterly sick leave usage was approximately the same as last year.

	Number of Employees	YTD	Annualized Total	Annual FMLA %	FY16
Admin	138	1.61	6.45	20.3%	8.29
Aff. Action	5	0.98	3.92	0.0%	8.05
Executive	5	3.62	14.48	22.1%	10.97
Finance	37	1.58	6.33	2.4%	9.70
Int. Audit	7	1.51	6.06	65.3%	4.44
Law	16	1.50	6.01	5.8%	11.41
OEP	5	2.33	9.31	61.7%	6.62
Operations	925	2.18	8.70	21.9%	9.06
Pub. Affs.	14	2.11	8.46	15.8%	9.16
MWRA Avg	**1152**	**2.08**	**8.30**	**21.4%**	**8.99**

Percent of sick leave usage for FY17, attributable to Family and Medical Leave Act (FMLA) is 21.4% .



Total Overtime for Field Operations for the first quarter of FY17 was $610,967 which is ($69k) under budget. Emergency overtime was $256k, which was ($35k) **under** budget. Rain events totaled $175k, emergency maintenance was $62k, approximately $4k of which was for response to the Nut Island Fire. Coverage overtime was $161k, which was ($11k) under budget, reflecting the quarter's shift coverage requirements. Planned overtime was $194k or ($23k) under budget, mainly due to lower than expected activity related to the North Main Pump Station project. Spending for the quarter includes maintenance off-hours work at $99k, maintenance work completion at $30k, and planned operations at $10k.
YTD, FOD has spent $610,967 on overtime which is ($69k) under budget.

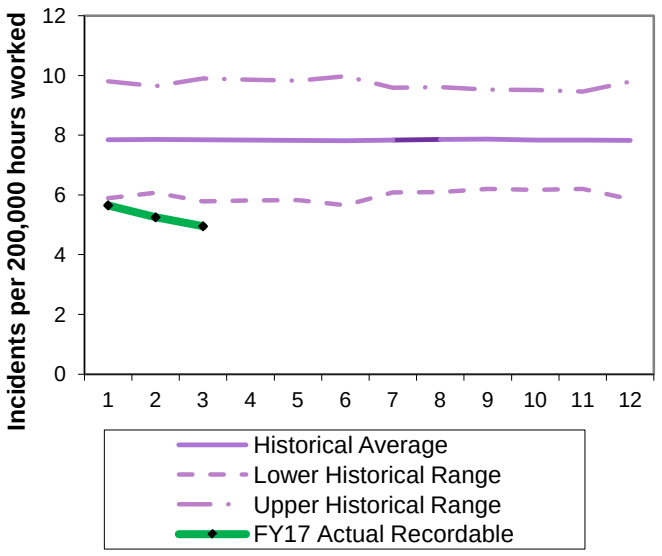


Total overtime for Deer Island for the first quarter of FY17 was $229,260, which is ($29k) under budget. No storm caverage requirements were needed in the first quarter, ($64k), is partially offset by a higher planned/unplanned overtime was $11k and higher than anticipated shift coverage, $24k mainly due to vacany operator positions.

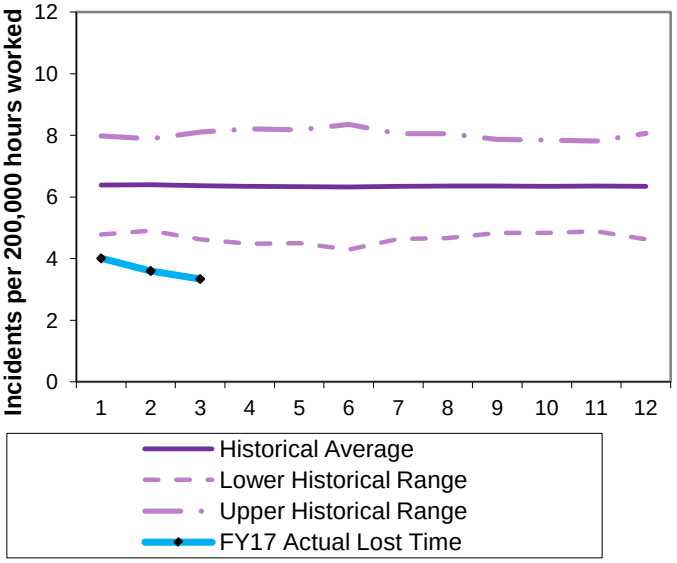
Workplace Safety

First Quarter - FY17

Recordable Injury & Illness Rates



Lost Time Injury & Illness Rates



1 “Recordable" incidents are all work-related injuries and illnesses which result in death, loss of consciousness, restriction of work or motion, transfer to another job, or require medical treatment beyond first aid.

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 - 1st Quarter FY17

	New	Closed	Open Claims
Lost Time	2	2	58
Medical Only	4	4	13
Report Only	7		
	New	YTD Light Duty Returns	
Light Duty Returns	3		3

Highlights/Comments:

Light Duty Returns

Three employees returned to light duty from IA

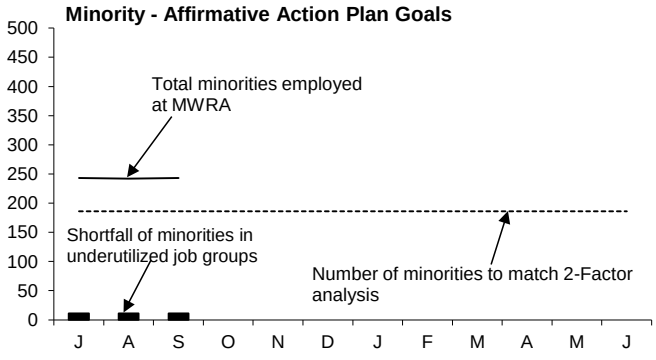
Regular Duty returns

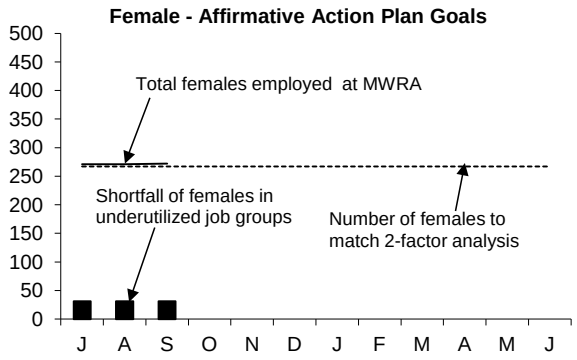
Note: Claims may initially be counted in one category and changed to another category at a later date. Examples include a medical treatment only claim (no lost time from work) but the employee may require surgery at a later date resulting in the claim becoming a lost time claim. At that time we would 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

1st Quarter - FY17





Highlights:

At the end of Q1 FY17, 4 job groups or a total of 11 positions are underutilized by minorities as compared to 10 job groups or a total of 47 positions at the end of Q1 FY16; for females 8 job groups or a total of 31 positions are underutilized by females as compared to 11 job groups or a total of 43 positions at the end of Q1FY16. During Q1, 4 minority and 5 female were hired. During this same period 8 minorities and 6 female terminated.

Underutilized Job Groups - Workforce Representation

Job Group	Employees as of 9/30/2016	Minorities as of 9/30/2016	Achievement Level	Minority Over or Under Underutilized	Females As of 9/30/2016	Achievement Level	Female Over or Under Underutilized
Administrator A	21	2	2	0	7	6	1
Administrator B	22	1	3	-2	2	6	-4
Clerical A	39	15	5	10	34	35	-1
Clerical B	30	8	7	1	11	15	-4
Engineer A	82	20	14	6	14	12	2
Engineer B	58	16	11	5	12	7	5
Craft A	109	16	14	2	0	6	-6
Craft B	146	29	17	12	4	4	0
Laborer	72	19	16	3	4	3	1
Management A	99	14	16	-2	36	25	11
Management B	45	9	4	5	11	11	0
Operator A	66	4	10	-6	1	9	-8
Operator B	61	10	1	9	3	1	2
Professional A	33	5	5	0	22	13	9
Professional B	158	45	34	11	78	65	13
Para Professional	55	16	11	5	27	29	-2
Technical A	49	13	10	3	5	10	-5
Technical B	7	1	2	-1	1	2	-1
Total	**1152**	**243**	**182**	**72/-11**	**272**	**259**	**44/-31**

AACU Candidate Referrals for Underutilized Positions

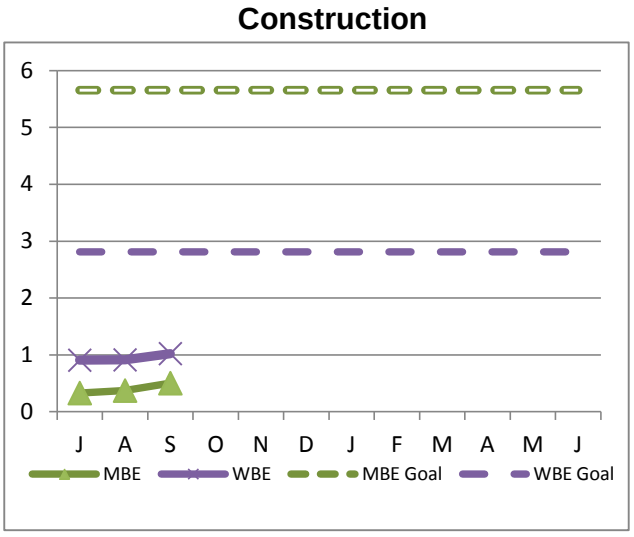
Job Group	Title	# of Vac	Requisition Int. / Ext.	Promotions/ Transfers	AACU Ref. External	Position Status
Craft A	Unit Supervisor	1	Int	1	0	Promo = WM
Craft A	Unit Supervisor, Motor Equipment Repairmen	1	Int	1	0	Promo = WM
Craft A	M&O Specialist	2	Int/Ext	2	1	Promo=(2)WM
Craft A	Heavy Equipment Operator 1	1	Int/Ext	1	0	Transfer = WM
Craft A	General Foreman	1	Int/Ext	1	0	Promo = WM
Craft B	Electrician	1	Int/Ext	0	0	NH = WM
Clerical B	Junior Instrument Technician	1	Int/Ext	0	1	In Progress
Engineer B	Project Manager, SCADA	2	Int	2	0	Promo=(2)WM
Engineer B	Staff Engineer	1	Int/Ext	0	1	NH = WM
Laborers	OMC Laborer	1	Int/Ext	0	0	NH = WM
Laborers	Building & Grounds Worker	3	Int/Ext	0	1	NH = BM & (2) WM
Management A	Senior Manager, Coordination & Control	1	Int	1	0	Promo = WF
Management A	Purchasing Manager	1	Int	1	0	Promo = WM
Management A	Construction Coordinator	1	Int/Ext	0	0	NH = WM
Management B	Area Manager	1	Int	1	0	Promo = WM
Professional B	Security Services Adminstrator	1	Int/Ext	0	1	In Progress
Professional B	Chemist I	1	Int	1	0	Transfer = WF
ParaProfessional	Administrative Systems Coordinator	1	Int	1	0	Transfer = WF
Technical A	Systems Administrator III	1	Int	1	0	Promo = BM
Technical A	Communication and Control Technician	2	Int/Ext	1	0	NH = WF & WM
Technical A	Sr.Field Service Technician	1	Int/Ext	0	2	NH = WM

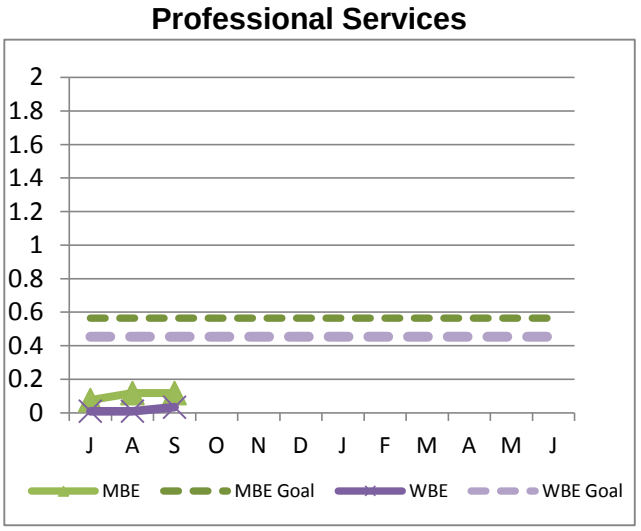
MBE/WBE Expenditures

1st Quarter - FY17

MBE/WBE targets are determined based on annual MWRA expenditure forecasts in the procurement categories noted below. The goals for FY17 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 September.





FY17 spending and percentage of goals achieved, as well as FY16 performance are as follows:

MBE					WBE			
FY17 YTD		FY16			FY17 YTD		FY16	
Amount	Percent	Amount	Percent		Amount	Percent	Amount	Percent
502,903	8.9%	1,805,604	37.9%	Construction	1,021,956	36.3%	1,114,916	47.1%
117,661	20.8%	828,841	55.3%	Prof. Svcs	32,930	7.2%	314,752	26.1%
42,712	7.1%	255,324	40.6%	Goods.Svcs	411,267	48.1%	1,124,374	160.7%
663,276	9.7%	2,889,769	41.9%	**Totals**	1,466,153	35.6%	2,554,042	59.8%

FY16 MBE/WBE dollar totals do not include MBE and WBE payments to prime contractors and consultants.

FY17 CEB Expenses
1st Quarter FY17

	September 2016 Year-to-Date					
	Period 3 YTD Budget	Period 3 YTD Actual	Period 3 YTD Variance	%	FY17 Approved	% Expended
EXPENSES						
WAGES AND SALARIES	$ 22,026,185	$ 21,739,199	$ (286,986)	-1.3%	$ 101,588,897	21.4%
OVERTIME	1,021,966	914,231	(107,735)	-10.5%	4,192,676	21.8%
FRINGE BENEFITS	5,002,091	4,573,719	(428,372)	-8.6%	20,242,323	22.6%
WORKERS' COMPENSATION	586,048	108,277	(477,771)	-81.5%	2,344,190	4.6%
CHEMICALS	2,652,427	2,841,517	189,090	7.1%	9,110,407	31.2%
ENERGY AND UTILITIES	4,389,287	4,598,064	208,777	4.8%	21,541,077	21.3%
MAINTENANCE	6,754,180	7,934,632	1,180,452	17.5%	31,080,642	25.5%
TRAINING AND MEETINGS	65,990	103,736	37,746	57.2%	435,481	23.8%
PROFESSIONAL SERVICES	1,484,364	1,456,676	(27,688)	-1.9%	6,531,939	22.3%
OTHER MATERIALS	822,308	993,751	171,443	20.8%	6,219,630	16.0%
OTHER SERVICES	6,118,260	5,603,209	(515,051)	-8.4%	22,974,855	24.4%
TOTAL DIRECT EXPENSES	**$ 50,923,106**	**$ 50,867,011**	**$ (56,093)**	**-0.1%**	**$ 226,262,117**	**22.5%**
INSURANCE	$ 499,474	$ 427,968	$ (71,506)	-14.3%	$ 1,997,898	21.4%
WATERSHED/PILOT	6,072,817	6,017,497	(55,320)	-0.9%	24,291,268	24.8%
BECo PAYMENT	193,465	194,994	1,529	0.8%	773,859	25.2%
MITIGATION	389,500	385,700	(3,800)	-1.0%	1,558,000	24.8%
ADDITIONS TO RESERVES	(41,936)	(41,936)	-	0.0%	(167,742)	25.0%
RETIREMENT FUND	4,632,624	4,632,624	-	0.0%	4,632,624	100.0%
POST EMPLOYEE BENEFITS	-	-	-	---	4,876,050	0.0%
TOTAL INDIRECT EXPENSES	**$ 11,745,944**	**$ 11,616,847**	**$ (129,097)**	**-1.1%**	**$ 37,961,957**	**30.6%**
STATE REVOLVING FUND	$ 19,880,426	$ 19,880,426	$ -	0.0%	$ 86,971,915	22.9%
SENIOR DEBT	65,712,028	65,493,958	(218,070)	-0.3%	268,472,556	24.4%
CORD FUND	-	-	-	---	-	---
DEBT SERVICE ASSISTANCE	-	-	-	---	(873,804)	---
CURRENT REVENUE/CAPITAL	3,050,000	3,050,000	-	0.0%	12,200,000	25.0%
SUBORDINATE MWRA DEBT	13,704,926	13,704,926	-	0.0%	69,997,992	19.6%
LOCAL WATER PIPELINE CP	1,037,310	1,037,310	-	0.0%	4,149,242	25.0%
CAPITAL LEASE	804,265	804,265	-	0.0%	3,217,060	25.0%
DEBT PREPAYMENT	-	-	-	---	10,994,960	0.0%
VARIABLE DEBT	-	(2,768,995)	(2,768,995)	---	-	0.0%
DEFEASANCE ACCOUNT	-	-	-	---	-	---
TOTAL DEBT SERVICE	**$ 104,188,956**	**$ 101,201,891**	**$ (2,987,065)**	**-2.9%**	**$ 455,129,921**	**22.2%**
TOTAL EXPENSES	**$ 166,858,006**	**$ 163,685,749**	**$ (3,172,256)**	**-1.9%**	**$ 719,353,995**	**22.8%**
REVENUE & INCOME						
RATE REVENUE	$ 173,719,625	$ 173,719,625	$ -	0.0%	$ 694,878,500	25.0%
OTHER USER CHARGES	2,271,527	2,260,982	(10,545)	-0.5%	8,752,834	25.8%
OTHER REVENUE	979,548	1,051,829	72,281	7.4%	6,519,171	16.1%
RATE STABILIZATION	-	-	-	---	-	---
INVESTMENT INCOME	2,196,173	1,959,620	(236,553)	-10.8%	9,473,490	20.7%
TOTAL REVENUE & INCOME	**$ 179,166,873**	**$ 178,992,056**	**$ (174,817)**	**-0.1%**	**$ 719,623,995**	**24.9%**

As of September 2016, total expenses are $163.7 million, $3.2 million or 1.9% lower than budget and total revenue was $179.0 million, $175k or 0.1% below budget, for a net variance of $3.0 million.

Expenses –

Direct Expenses are $50.9 million, $56k or 0.1% below budget.

- **Wages & Salaries** are under budget by $287k or 1.3%. At the end of September, the average Full Time Equivalent (FTE) positions were 1,136, 14 positions fewer than the 1,150 budgeted FTE's.
- **Maintenance** is over budget by $1.2 million or 17.5%. Services are overspent by $880k and Materials are overspent by $301k. Over spending includes $397k for Nut Island fire repairs and the remaining variance reflecting other work completed ahead of schedule.
- **Other Services** are under budget by $515k or 8.4% mainly due to lower Sludge Pelletization expense of $248k reflecting lower year to date quantities, lower membership and dues of $92k due to timing, and lower Grit Screenings Removal $91k reflecting lower than budgeted quantities.
- **Workers' Compensation** is underspent by $478k or 81.5% due to lower than budgeted Medical Payments of $246k and Compensation Payments of $240k, due mostly to reserve adjustments.
- **Fringe Benefits** are under budget by $428k or 8.6% mainly due to one week under accrual and lower than budgeted FTE's.
- **Utilities** are over budget by $209k or 4.8% mainly due to electricity purchases $221k over budget reflecting an over accrual at Deer Island.
- **Chemicals** are overspent by $189k or 7.1% mainly due to higher spending on Sodium Hypochlorite of $91k due to timing at Deer Island and higher contract prices at the Carroll and Brutsch water treatment facilities, Hydrogen Peroxide of $82k due to increased need for pretreatment of hydrogen sulfide gas due to lower flows at Deer Island, and Activated Carbon of $36k.
- **Other Materials** are over budget by $171k or 20.8% mainly due to vehicle purchase of $131k, Other Materials of $54k, and Computer Hardware of $52k, partially offset by lower Vehicle Expenses of $87k reflecting lower gasoline pricing.

Indirect Expenses of $11.6 million, 129k under budget or 1.1%.

Debt Service Expenses totaled $101.2 million, which was $3.0 million or 2.9% under budget due mainly to lower than budgeted variable rate interest of $2.8 million and savings from the August 2016 refunding.

Revenue and Income –

Total Revenue / Income for September is $179.0 million, $175k or 0.1% under budget mainly due to lower investment Income of $237k due to unexpected calls and lower reinvestment rates.

Cost of Debt
1st Quarter– FY17

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.

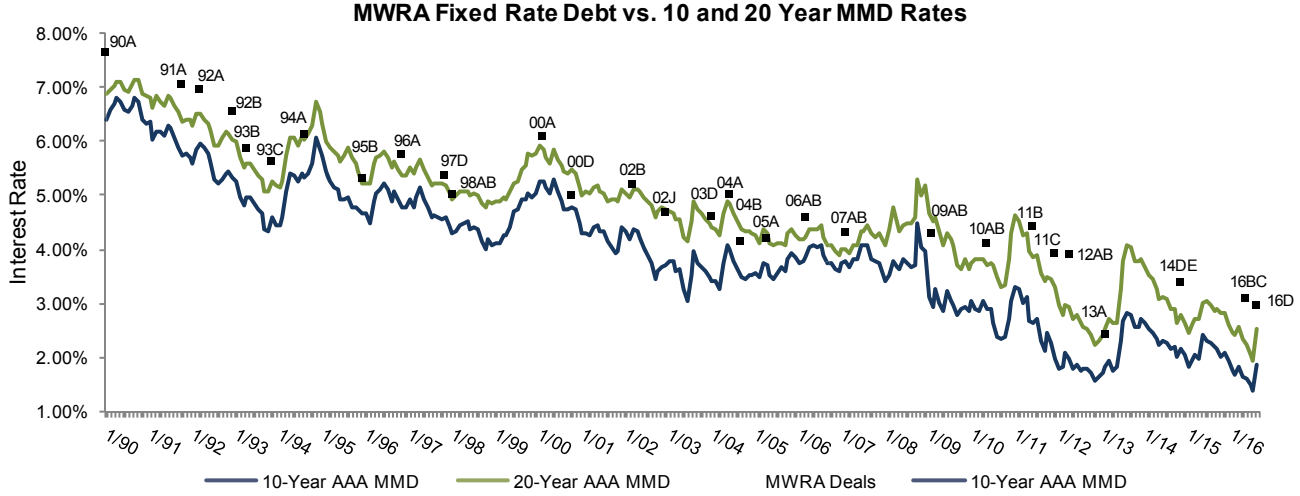
Average Cost of MWRA Debt

Fixed Debt ($3,621)	3.95%
Variable Debt ($481.2)	0.93%
SRF Debt ($980.1)	1.38%
Weighted Average Debt Cost ($5,083)	3.17%

Most Recent Senior Fixed Debt Issue
August 2016

2016 Series D ($104.3)	2.99%

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

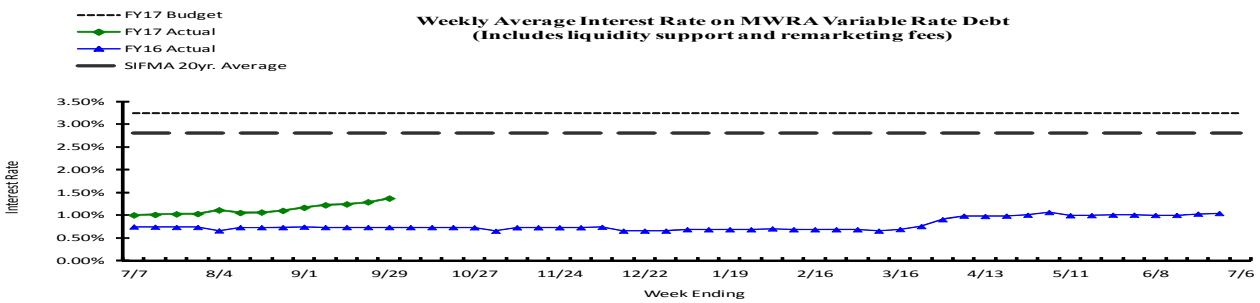


Bond Deal	1992A	1992B	1993B	1993C	1994A	1995B	1996A	1997D	1998AB	2000A	2000D	2002B	2002J	2003D
Rate	6.98%	6.58%	5.89%	5.66%	6.15%	5.34%	5.78%	5.40%	5.04%	6.11%	5.03%	5.23%	4.71%	4.64%
Avg Life	22.6 yrs	6.3 yrs	19.8 yrs	19.1 yrs	19.5 yrs	20.5 yrs	19.5 yrs	21.6 yrs	24.4 yrs	26.3 yrs	9.8 yrs	19.9 yrs	19.6 yrs	18.4 yrs

Bond Deal	2004A	2004B	2005A	2006AB	2007AB	2009AB	2010AB	2011B	2011C	2012AB	2013A	2014DEF	2016BC	2016D
Rate	5.05%	4.17%	4.22%	4.61%	4.34%	4.32%	4.14%	4.45%	3.95%	3.93%	2.45%	3.41%	3.12%	2.99%
Avg Life	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	17.4 yrs	18.8 yrs

Weekly Average variable Interest Rates vs. Budget

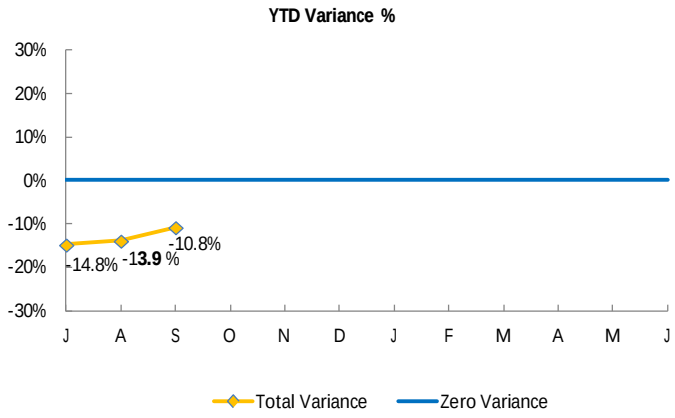
MWRA currently has eleven variable rate debt issues with $903 million outstanding, excluding commercial paper. Of the eleven outstanding series, five have portions which have been swapped to fixed rate. Variable rate debt has been less expensive than fixed rate debt in recent years as short-term rates have remained lower than long-term rates on MWRA debt issues. In September, SIFMA rates ranged from a high of 0.78% to a low of 0.63% 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.



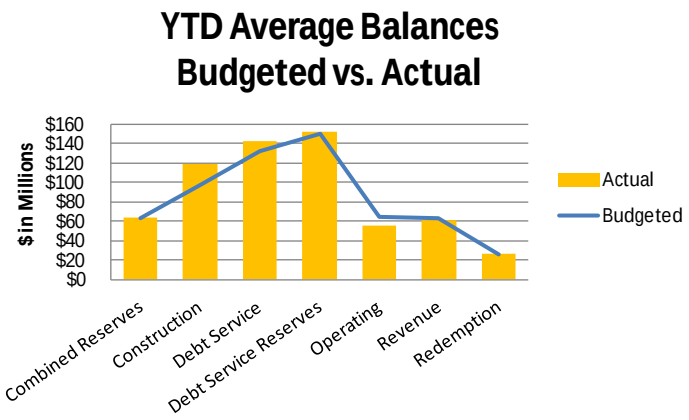
Investment Income

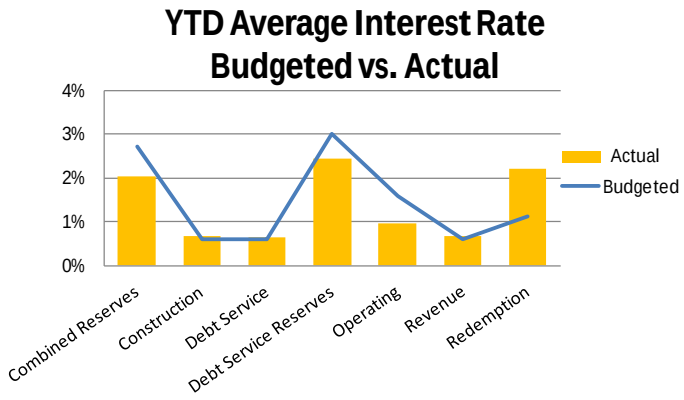
1st Quarter – FY17

Year To Date

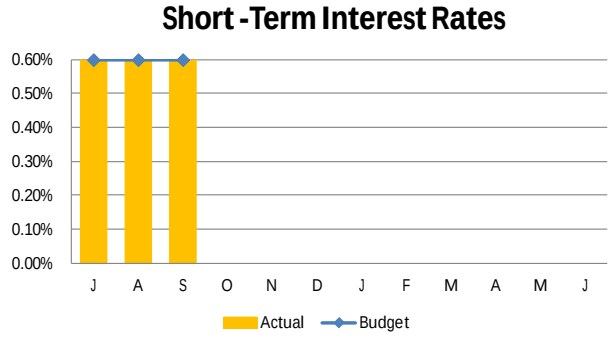


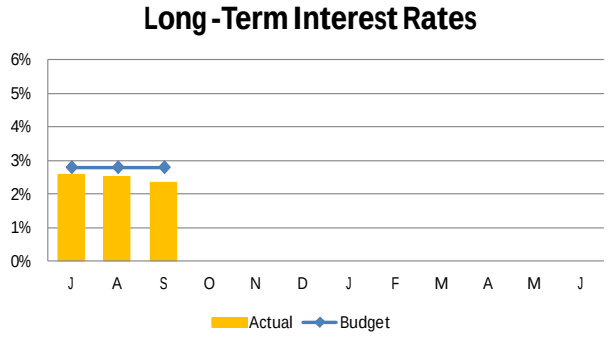
	YTD BUDGET VARIANCE ($000)			
	BALANCES IMPACT	RATES IMPACT	TOTAL	%
Combined Reserves	($0)	($100)	(100)	-24.6%
Construction	$30	$21	50	36.3%
Debt Service	$15	$21	35	18.9%
Debt Service Reserves	$3	($189)	(185)	-17.4%
Operating	($32)	($81)	(113)	-46.7%
Revenue	($4)	$12	8	9.4%
Redemption	$0	$68	68	96.4%
Total Variance	$12	($248)	($237)	-10.8%

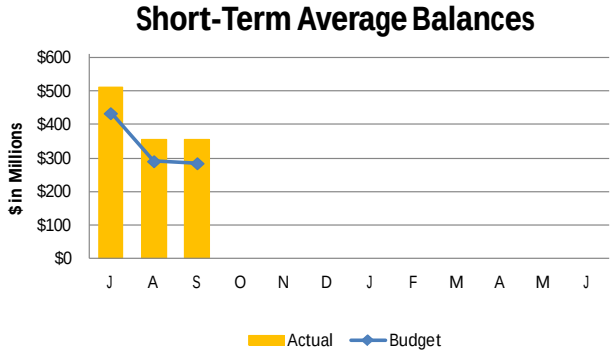


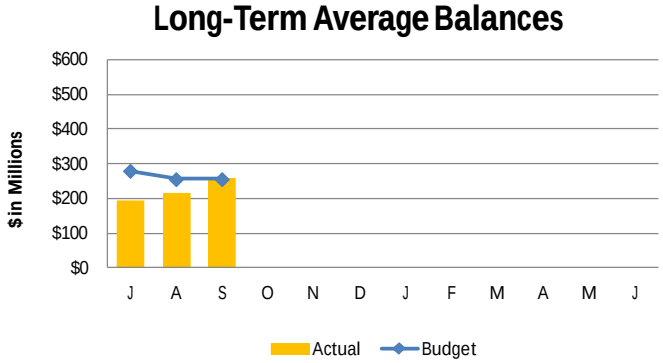


Monthly









STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: November 16, 2016
SUBJECT: Delegated Authority Report – October 2016

COMMITTEE: Administration, Finance & Audit

X INFORMATION
___ VOTE

Michele S. Gillen
Director, Administration

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

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 October 1 – 31 , 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 OCTOBER 1 - 31, 2016

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMEND/CO	COMPANY	FINANCIAL IMPACT
C-1.	10/04/16	**NUT ISLAND HEADWORKS FREIGHT ELEVATOR MODERNIZATION** AWARD OF CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE NUT ISLAND HEADWORKS FREIGHT ELEVATOR REPAIR AND MODERNIZATION, AS RECOMMENDED AFTER POST-FIRE REPAIR ATTEMPTS WERE UNSUCCESSFUL, FOR A TERM OF 126 CALENDAR DAYS.	OP-329	AWARD	BBE CORPORATION	$179,000.00
C-2.	10/13/16	**DEER ISLAND TREATMENT PLANT - LIGHTING IMPROVEMENTS PLAN, PHASE 5 EXTERIOR LIGHTING** AWARD OF ENERGY EFFICIENT CONTRACT TO EVERSOURCE PREQUALIFIED VENDOR FOR LIGHTING IMPROVEMENTS FOR DEER ISLAND TREATMENT PLANT PHASE 5 EXTERIOR LIGHTING FOR A TERM OF 240 CALENDAR DAYS. REBATE TOTALING $35,107.45 WILL BE RECEIVED FROM EVERSOURCE UPON PROJECT COMPLETION, RESULTING IN A PAYBACK PERIOD OF 5.9 YEARS.	5557	AWARD	HORIZON SOLUTIONS LLC	$94,125.04
C-3.	10/13/16	**DEER ISLAND TREATMENT PLANT - LIGHTING IMPROVEMENTS PLAN, PHASE 8 EXTERIOR LIGHTING** AWARD OF ENERGY EFFICIENT CONTRACT TO EVERSOURCE PREQUALIFIED VENDOR FOR LIGHTING IMPROVEMENTS FOR DEER ISLAND TREATMENT PLANT PHASE 8 EXTERIOR LIGHTING FOR A TERM OF 240 CALENDAR DAYS. REBATE TOTALING $42,363 WILL BE RECEIVED FROM EVERSOURCE UPON PROJECT COMPLETION, RESULTING IN A PAYBACK PERIOD OF 4.7 YEARS.	5558	AWARD	RISE ENGINEERING	$99,564.00
C-4.	10/17/16	**REPLACEMENT OF SCUM SKIMMERS - DEER ISLAND TREATMENT PLANT** REMOVE, FURNISH AND INSTALL ONE GEAR BOX DRIVE IN GRAVITY THICKENER NO. 3.	7396	3	WALSH CONSTRUCTION COMPANY	$85,695.60
C-5.	10/17/16	**CATHODIC PROTECTION REPLACEMENT, SHAFT 5A/5** AWARD OF CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE CATHODIC PROTECTION REPLACEMENT, SHAFT 5A/5 FOR A TERM OF 189 CALENDAR DAYS.	7477	AWARD	CORRTECH, INC.	$132,000.00
C-6.	10/27/16	**ADAMS STREET CROSSING/CATTLE PASS BRIDGE REMOVAL** TRANSPORT AND DISPOSE OF SOIL TO AN IN-STATE UNLINED LANDFILL; INSTALL A RETAINING WALL AT THE ADAMS STREET GRADE CROSSING AND REPLACE THE EXISTING FENCE; CHIP TOP OF ROCK AND EXTEND THE CULVERT BY FIVE FEET; PERFORM AN ADDITIONAL THIRTY-FIVE TEST PITS; REMOVE THREE TREES, RELOCATE TWO SIGNS AND REMOVE A SECTION OF STONE WALL AND TREE; PAVE AN ADDITIONAL SIXTY-FOUR SQUARE FEET AT THE QUINCY AVENUE CROSSING; REMOVE 80-FEET OF CORRUGATED METAL PIPE AND FURNISH AND INSTALL 80-FEET OF DUCTILE IRON PIPE; EXCAVATE, TRANSPORT AND DISPOSE OF HOT MIX ASPHALT; EXCAVATE, TRANSPORT AND DISPOSE OF CONCRETE FOUNDATION.	FRR29	2	LM HEAVY CIVIL CONSTRUCTION LLC	$95,703.42
C-7.	10/27/16	**WIND TURBINE MAINTENANCE** AWARD OF CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR WIND TURBINE MAINTENANCE AT THE DEER ISLAND TREATMENT PLANT FOR A TERM OF 730 CALENDAR DAYS.	5555	AWARD	BALDWIN CRANE & EQUIPMENT CORP.	$365,300.00
C-8.	10/31/16	**SOUTHBOROUGH WATER QUALITY LABORATORY UPGRADES** MODIFY HVAC HEATING HOT WATER SYSTEM; FURNISH AND INSTALL TWO EMERGENCY BATTERY LIGHTING UNITS IN THE MEN'S AND WOMEN'S RESTROOMS; FURNISH AND INSTALL A SMOKE DETECTOR IN CORRIDOR 102; FURNISH AND INSTALL HVAC CONDENSATE PUMP.	6650A	6	PAUL J. RYAN CO. INC.	$57,747.25

PURCHASING DELEGATED AUTHORITY ITEMS - October 1 - 31, 2016

NO.		TITLE AND EXPLANATION	CONTRACT #	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-1.	10/4/16	**REPAIRS TO ONE VACTOR JET** AWARD OF A SOLE SOURCE PURCHASE ORDER TO REPAIR ONE VACTOR JET FOR THE VEHICLE MAINTENANCE DEPARTMENT. THE AUTHORITY CURRENTLY HAS TWO VACTOR MANUFACTURING, INC. VACTOR TRUCKS IN OPERATION USED BY PIPELINE WASTEWATER MAINTENANCE. BOTH VACTOR JETS WERE PURCHASED TOGETHER IN JANUARY, 2011. ONE OF THE TWO VACTOR JETS, WRA-165, WAS BROUGHT INTO THE MAINTENANCE GARAGE BECAUSE THE UNIT WAS HAVING A PROBLEM BUILDING UP VACUUM IN THE MAIN BODY. IT WAS ALSO REPORTED THAT THERE HAD BEEN A SMALL FIRE IN THE CYCLONE COLLECTION/DEBRIS HOPPER. BECAUSE THIS IS A SPECIALIZED PIECE OF EQUIPMENT, IT WAS DECIDED TO BRING THE VEHICLE TO THE ONLY AUTHORIZED MANUFACTURER'S REPAIR FACILITY, C.N. WOOD COMPANY, INC.			C N WOOD COMPANY, INC.	$29,990.86
P-2.	10/6/16	**JANITORIAL SERVICES** AWARD OF A THREE YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR JANITORIAL SERVICES AT THE CLINTON WASTEWATER TREATMENT PLANT.	WRA-4275Q		SJ SERVICES, INC.	$39,920.00
P-3.	10/6/16	**ANNUAL MAINTENANCE AND SUPPORT OF PORTIA INVESTMENT AND CASH MANAGEMENT SOFTWARE** AWARD OF A SOLE SOURCE PURCHASE ORDER FOR THE ANNUAL MAINTENANCE AND SUPPORT OF THE PORTIA INVESTMENT & CASH MANAGEMENT SOFTWARE. IN 1991, UNDER DELEGATED AUTHORITY, THE FINANCE DIVISION PURCHASED PORTIA SOFTWARE, USED TO MANAGE MWRA'S INVESTMENT PORTFOLIO. THE MAINTENANCE AND SUPPORT AGREEMENT INCLUDES CUSTOMER TELEPHONE SUPPORT AND UPDATES TO THE PRODUCT. SS & C TECHNOLOGIES IS THE MANUFACTURER AND SOLE SOURCE PROVIDER OF PORTIA AND ITS MAINTENANCE.			SS & C TECHNOLOGIES, INC.	$48,869.91
P-4.	10/6/16	**HARDWARE & SERVICES FOR SCADA ACTIVE DIRECTORY** AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER TO PROVIDE HARDWARE AND INTEGRATION SERVICES FOR THE IMPLEMENTATION OF THE ACTIVE DIRECTORY AND DOMAIN CONTROLLERS ON THE SCADA NETWORKS AS RECOMMENDED BY THE U.S. DEPARTMENT OF HOMELAND SECURITY DURING A RECENT ASSESSMENT.	WRA-2464Q-OP ITC47		PRESIDO NETWORK SOLUTIONS, INC.	$144,216.90
P-5.	10/12/16	**SIXTEEN SCUM MIXERS** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR SIXTEEN SCUM MIXERS FOR THE DEER ISLAND TREATMENT PLANT. THE SCUM COLLECTION SYSTEM FOR THE DEER ISLAND TREATMENT PLANT HAS BEEN AGING AND IN SOME AREAS COMPLETELY INOPERABLE. THE EXISTING MIXERS ARE APPROXIMATELY TWENTY YEARS OLD. SPARE PARTS HAVE BEEN DIFFICULT TO PROCURE AND THERE ARE SEVERAL STYLE MIXERS BY SEVERAL DIFFERENT MANUFACTURERS WHICH IS CUMBERSOME TO MAINTENANCE TASKS AND STOCKING SPARE PARTS. PURCHASING ALL THE SIXTEEN MIXERS AT ONCE THROUGH ONE QUALIFIED BIDDER WILL ALSO PROVIDE MORE EFFICIENT MAINTENANCE AS PERSONNEL BECOME FAMILIAR WITH ONE STYLE MIXER. THE MIXERS WILL BE INSTALLED BY MWRA STAFF.	WRA-4196		SPX FLOW TECHNOLOGY	$700,944.00
P-6.	10/13/16	**ONE VERTICAL TURBINE 10-INCH FIRE PUMP** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR ONE VERTICAL TURBINE 10-INCH FIRE PUMP FOR THE NUT ISLAND HEADWORKS.	WRA-4281Q		F.W. WEBB COMPANY	$32,295.00
P-7.	10/13/16	**NEW PROCESS INFORMATION SYSTEM LICENSE AND SUPPORT** APPROVAL OF A SOLE SOURCE PURCHASE ORDER FOR A NEW PROCESS INFORMATION (PI) SYSTEM SOFTWARE LICENSE AND SUPPORT. MWRA'S PROCESS INFORMATION AND CONTROL SYSTEM (PICS) ON DEER ISLAND IS ONE OF THE LARGEST INSTALLATIONS OF ITS KIND IN THE UNITED STATES. THOUSANDS OF FIELD INSTRUMENTATION DEVICES ARE USED TO GATHER PROCESS INFORMATION SUCH AS: TEMPERATURES, PRESSURES, FLOWS, AND ON/OFF STATES OF REMOTE EQUIPMENT. THESE DEVICES ARE WIRED BACK TO A DISTRIBUTED CONTROL SYSTEM (DCS), WHICH CONSISTS OF 64 CONTROL CABINETS LOCATED AT VARIOUS LOCATIONS AROUND THE 150-ACRE SITE. THE CURRENT PI SERVER LOCATED ON THE MIS NETWORK WILL BE UPGRADED TO THE LATEST VERSION OF THE PI SYSTEM AND MOVED OVER TO THE PICS NETWORK TO SERVE AS THE MASTER PI SERVER WITH 50,000 TAGS. THE NEW LICENSE WILL BE USED FOR THE ANCILLARY PI SERVER WITH 50,000 TAGS FOR INSTALLATION ON THE MIS NETWORK. OSI SOFTWARE IS THE SOLE SOURCE VENDOR FOR SOFTWARE LICENSES AND SUPPORT OF THE PI SYSTEM.			OSI SOFTWARE, INC.	$74,218.36
P-8.	10/13/16	**ONE NEW ARTICULATING TRACTOR** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR ONE NEW ARTICULATING TRACTOR. DEER ISLAND TREATMENT PLANT'S STAFF USES AN ARTICULATING TRACTOR FOR SNOW AND ICE REMOVAL OPERATIONS THROUGHOUT THE FACILITY. THIS COMPACT TRACTOR IS AN ARTICULATING AND OSCILLATING MULTI-PURPOSE, MULTI-SEASON USE MODEL AND HAS THE ABILITY TO ACCOMMODATE MULTIPLE ATTACHMENTS SUCH AS SNOW REMOVAL EQUIPMENT. DEER ISLAND'S CURRENT TRACTOR IS TWENTY-TWO YEARS OLD AND IS PAST A COMPACT TRACTOR'S USEFUL SERVICE LIFE. THE EXISTING TRACTOR IS NO LONGER IN PRODUCTION, MAKING REPLACEMENT PARTS SCARCE AND DIFFICULT TO PROCURE, THUS INCREASING DOWN TIME BETWEEN REPAIRS.	WRA-4261		SUNBELT RENTAL INC.	$92,899.00
P-9.	10/14/16	**ONE SPARE PUMP PULL OUT ASSEMBLY** AWARD OF A SOLE SOURCE PURCHASE ORDER FOR ONE SPARE PUMP PULL OUT ASSEMBLY FOR THE CARUSO PUMP STATION. CARUSO PUMP STATION UTILIZES FOUR FAIRBANKS MORSE 250-HP, 21 MILLION GALLON PER DAY (MGD) DRY PIT CENTRIFUGAL PUMPS TO TRANSFER WASTEWATER TO THE WINTHROP TERMINAL FACILITY VIA THE NORTH METROPOLITAN TRUCK SEWER. THE 21 MGD PUMPS ARE 25-YEARS OLD AND ALTHOUGH PERFORMANCE HAS BEEN SATISFACTORY, PERIODIC REPAIRS ARE NECESSARY. THE DESIGN LIFE FOR MECHANICAL EQUIPMENT IN SEWER PUMPING STATIONS IS 20 YEARS. HAVING A SPARE PULL OUT ASSEMBLY ON HAND AND AVAILABLE FOR QUICK INSTALLATION BY IN HOUSE STAFF WOULD SHORTEN THE DURATION OF PUMP DOWNTIME SHOULD A PROBLEM DEVELOP WITH A PUMP. STAFF RECOMMENDED THE PROCUREMENT OF A COMPLETE SPARE PUMP PULL OUT ASSEMBLY TO HAVE IN THE EVENT THAT A PUMP REBUILD IS REQUIRED.			HAYES PUMP COMPANY	$176,510.00

PURCHASING DELEGATED AUTHORITY ITEMS - October 1 - 31, 2016

NO.		TITLE AND EXPLANATION	CONTRACT #	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-10	10/26/16	**ONE SPARE PUMP PULL OUT ASSEMBLY** AWARD OF A SOLE SOURCE PURCHASE ORDER FOR ONE SPARE PUMP PULL OUT ASSEMBLY FOR THE BRAINTREE WEYMOUTH INTERMEDIATE PUMP STATION. DURING DRY AND WET WEATHER, THE INTERMEDIATE PUMP STATION UTILIZES THREE FAIRBANKS MORSE 450-HP, 23 MILLION GALLON PER DAY (MGD) NON-CLOG PUMPS AND ONE FLOW SERVE 100-HP, 12 MGD DRY PIT CENTRIFUGAL PUMP TO TRANSFER WASTEWATER TO THE INTER ISLAND TUNNEL. THE STATION WAS BUILT IN 2005 AND THE PUMPS HAVE NOT BEEN OVERHAULED DURING THIS ELEVEN-YEAR PERIOD. STAFF RECOMMENDED THE PROCUREMENT OF A COMPLETE FAIRBANKS MORSE PUMP ASSEMBLY TO HAVE AS A SPARE IN THE EVENT THAT A PUMP REBUILD BECOMES NECESSARY.			HAYES PUMP COMPANY	$128,734.00
P-11	10/27/16	**TWO S::CAN SPECTRO::LYZERS** AWARD OF A SOLE SOURCE PURCHASE ORDER FOR TWO SPARE, FULLY LICENSED S::CAN SPECTRO::LYZERS AS PART OF MWRA'S SPARE COMPONENT INVENTORY FOR THE EXISTING CONTAMINANT WARNING SYSTEM. MWRA'S CONTAMINANT WARNING SYSTEM (CWS) PROVIDES CONTINUOUS MONITORING TO DETECT CHANGES IN WATER QUALITY THAT MAY SIGNAL A CONTAMINATION EVENT. CURRENTLY, STAFF HAVE INSTALLED NINETEEN CWS UNITS THROUGHOUT THE MWRA SERVICE AREA. IN ORDER TO ENSURE MAXIMUM UP-TIME FOR THE CWS, STAFF RECOMMENDED THE PURCHASE OF TWO FULLY-LICENSED SPARE SPECTRO::LYZERS, WHICH WOULD BE AVAILABLE FOR IMMEDIATE DEPLOYMENT. STAFF ARE OF THE OPINION THAT USING THE ORIGINAL MANUFACTURER'S EQUIPMENT PROVIDES THE GREATEST LEVELS OF SAFETY, RELIABILITY, AND HIGHEST PROBABILITY FOR LONG-TERM SUCCESS FOR THE OPERATION OF THE SYSTEM.			S::CAN MEASURING SYSTEMS LLC	$40,530.00
P-12	10/27/16	**ONE NEW 10 WHEEL DIESEL POWERED TRUCK** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR ONE NEW 10 WHEEL DIESEL POWERED TRUCK WITH A 26 TON TELESCOPIC BOOM/CATCH BASIN. THE WASTEWATER PIPE MAINTENANCE MAINTAINS 6-INCH TO 60-INCH DIAMETER SEWER AND DRAIN LINES, INVERTED SIPHON BARRELS, CATCH BASINS, MANHOLES, METER AND VAULT CHAMBERS, AND WASTEWATER FACILITY WET WELLS WITHIN THE AUTHORITY'S SERVICE AREA. ADDITIONALLY, STAFF AND EQUIPMENT ARE DISPATCHED TO MWRA USER COMMUNITIES TO PROVIDE ASSISTANCE IN THEIR REGULAR SEWER CLEANING ACTIVITIES AND IN EMERGENCIES. WASTEWATER'S PIPE MAINTENANCE PRIMARY PIECE OF HEAVY DUTY EQUIPMENT IS WRA-187, A 1997 WESTERN STAR CAB AND CHASSIS OUTFITTED WITH A FLATBED AND AN 18-TON CRANE. WRA-1897 IS A CLASS 3 TRUCK THAT IS OVER 19 YEARS OLD WITH 28,166 MILES. DESPITE THE LOW MILEAGE, THE TRUCK EXCEEDS THE AUTHORITY'S CURRENT REPLACEMENT CRITERIA FOR AGE AND CONDITION. STAFF HAVE DETERMINED THAT CONTINUED REPAIRS TO WRA-187 ARE NO LONGER COST EFFECTIVE AND RECOMMEND A REPLACEMENT.	WRA-4282		MINUTEMAN TRUCKS, INC.	$316,998.00
P-13	10/28/16	**TWO SULFUR SLURRY PUMPS** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR TWO SULFUR CHEMICAL FEED PUMPS FOR THE DEER ISLAND TREATMENT PLANT. THE DEER ISLAND TREATMENT PLANT WAS DESIGNED TO MEET A PORTION OF ITS ENERGY NEEDS BY USING THE METHANE GAS GENERATED FROM THE SLUDGE DIGESTION PROCESS. THIS PROCESS UTILIZES A GAS COMPRESSOR SYSTEM FOR SUPPLYING METHANE GAS TO POWER BOILERS FOR BURNING GAS WITHIN THE THERMAL POWER PLANT BOILERS. PART OF THE GAS SYSTEM EQUIPMENT INCLUDES FOUR HORIZONTAL STRAIGHT-LINE SULFUR SLURRY PUMPS, TWO OF WHICH OPERATE AT ALL TIMES. THE CURRENT SULFUR PUMPS ARE TEN YEARS OLD AND HAVE BEEN PREVIOUSLY REBUILT. THERE ARE A TOTAL OF FOUR SLURRY PUMPS AVAILABLE FOR SULFUR REMOVAL, TWO ALWAYS IN OPERATION AND EACH WITH A BACKUP PUMP IMMEDIATELY AVAILABLE. DUE TO THE HARSHNESS OF THE CHEMICAL SLURRY BEING PROCESSED THROUGH THESE PUMPS ON A 24-HOURS/7-DAYS PER WEEK BASIS, THE TWO PUMPS NOW OPERATING ARE CONSIDERED TO HAVE OUTLIVED THEIR USEFUL LIFE.	WRA-4252Q		VALVE INDUSTRIES, INC.	$33,327.00
P-14	10/28/16	**ANNUAL MAINTENANCE AND SUPPORT OF CRYSTAL REPORTS/BUSINESS OBJECTS BUSINESS INTELLIGENCE SUITE** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE ANNUAL MAINTENANCE AND SUPPORT FOR CRYSTAL REPORTS/BUSINESS OBJECTS BUSINESS INTELLIGENCE SUITE. CRYSTAL REPORTS/BUSINESS OBJECTS BUSINESS INTELLIGENCE (BI) SUITE IS THE STANDARD REPORTING AND AD-HOC QUERY TOOL FOR THE AUTHORITY AND IS USED FOR LAWSON, MAXIMO, PLANT INFORMATION SYSTEM, HELPLINE, PRETREATMENT INFORMATION MANAGEMENT SYSTEM AND LABORATORY INFORMATION MANAGEMENT SYSTEM. THIS ANNUAL AGREEMENT PROVIDES MAINTENANCE AND SUPPORT FOR 10 NAMED LICENSES AND 25 CONCURRENT LICENSES.	WRA-4292Q		CARAHSOFT TECHNOLOGY CORPORATION	$45,213.86
P-15	10/28/16	**MAXIMO TECHNICAL CONSULTANT** APPROVAL OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER TO PROVIDE MAXIMO TECHNICAL CONSULTANT SERVICES. ON MAY 13, 2015 THE BOARD AWARDED A CONTRACT TO UPGRADE MWRA'S COMPUTERIZED MAINTENANCE MANAGEMENT SYSTEM. AT THAT SAME MEETING, STAFF PRESENTED AN INFORMATIONAL STAFF SUMMARY TO THE BOARD ON MWRA'S OVERALL MAINTENANCE PROGRAM, AN IMPORTANT COMPONENT OF WHICH IS MAXIMO. BECAUSE OF THE ONGOING UPGRADE AND STAFF DEPARTURES, STAFF RECOMMEND THAT AN OUTSIDE CONSULTANT BE HIRED TO TEMPORARILY MANAGE THE DAY-TO-DAY MAXIMO SUPPORT AND TO PROVIDE OCCASIONAL, AS NEEDED SUPPORT OF THE UPGRADE EFFORT. AMOUNT NOT TO EXCEED $85,500.00 FOR A PERIOD OF 24 WEEKS.	WRA-4274Q ITS63		TRILLIUM TECHNICAL INC.	$85,500.00
P-16	10/28/16	**KRING SHORING SYSTEM** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR ADDITIONAL PARTS FOR MWRA'S KRING SHORING SYSTEM. AS PART OF ITS OVERALL MAINTENANCE AND OPERATION OF THE METROPOLITAN WATER SYSTEM, MWRA'S WATER PIPELINE UNIT PERFORMS APPROXIMATELY FIFTY EXCAVATIONS ANNUALLY TO REPLACE VALVES, RETROFIT BLOW-OFF VALVES, REPAIR LEAKS, DIG TEST PITS, AND FOR OTHER MISCELLANEOUS REQUIREMENTS. THESE EXCAVATIONS MUST BE PROTECTED AND SUPPORTED BY TRENCH BOXES, WOOD SHORING, OR AN ENGINEERED TRENCH SUPPORT SYSTEM, REFERRED TO AS THE KRING SHORING SYSTEM. THE KRING SHORING SYSTEM IS COMPRISED OF A SERIES OF SLIDE RAILS, LONG CORNER POSTS, AND DIFFERENT SIZED PANELS THAT HOLD BACK THE SOIL. MWRA'S CURRENT KRING SHORING SYSTEM WAS FIRST PURCHASED IN 1995, AND SINCE THAT TIME HAS BEEN USED EXTENSIVELY. NORMAL WEAR HAS TAKEN ITS TOLL ON MUCH OF THE EXISTING PIECES OF THE SYSTEM. THE PURCHASE ORDER IS FOR ADDITIONAL PANEL SECTIONS, GUIDE RAILS, AND SUPPORTS WHICH WILL AFFORD STAFF GREATER FLEXIBILITY WHEN SUPPORTING LARGER EXCAVATIONS.	WRA-4277		UNITED RENTALS NA, INC.	$91,462.00

POSITION CONTROL REGISTER (PCR) LOCATION CHANGES OCTOBER 2016 BOARD

DATE OF CHANGE	POSITION TITLE	CURRENT PCR#	CURRENT COST CENTER	NEW PCR #	NEW COST CENTER	REASON FOR CHANGE
10/22/2016	Administrative Systems Coordinator	8810002	Procurement	8150010	Administration Director's Office	To move position to correct cost center. Position reports to Director, Administration.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: November 16, 2016
SUBJECT: FY17 Financial Update and Summary

COMMITTEE: Administration, Finance & Audit

_X_ INFORMATION
___ VOTE

Kathy Soni, Budget Director
Louise L. Miller, Budget Manager
Preparer/Title

Thomas J. Durkin
Director, Finance

RECOMMENDATION:

For information only. This staff summary provides the financial update and variance highlights through October 2016, comparing actual spending to the budget.

DISCUSSION:

Total year-to-date budget variance is $5.5 million, with total expenses lower than budgeted by $5.5 million or 2.5% and total revenues at budget levels.

FY17 Current Expense Budget

The expense variances through October 2016 by major budget category were:

- Net Lower Direct Expenses of $1.6 million or 2.3%. Spending is lower for Wages and Salaries, Other Services, Worker's Compensation, Energy & Utilities, Fringe Benefits, Overtime, and Professional Services. This is offset by higher spending for Maintenance, Other Materials, and Chemicals.

- Lower Indirect Expenses of $70,000 or 0.5% for lower Watershed reimbursements and Insurance costs.

- Lower Debt Service expenses of $3.8 million or 2.8% mostly related to the favorable short-term variable interest rate and the impact of the August 2016 refunding.

FY17 Budget and FY17 Actual Year to Date Variance by Expenditure Category

	FY17 Budget YTD	FY17 Actual YTD	$ Variance	% Variance
Direct Expenses	$69.4	$67.8	-$1.6	-2.3%
Indirect Expenses	$13.9	$13.9	-$0.1	-0.5%
Debt Service	$137.9	$134.1	-$3.8	-2.8%
Total	**$221.2**	**$215.8**	**-$5.5**	**-2.5%**

Totals may not add due to rounding.

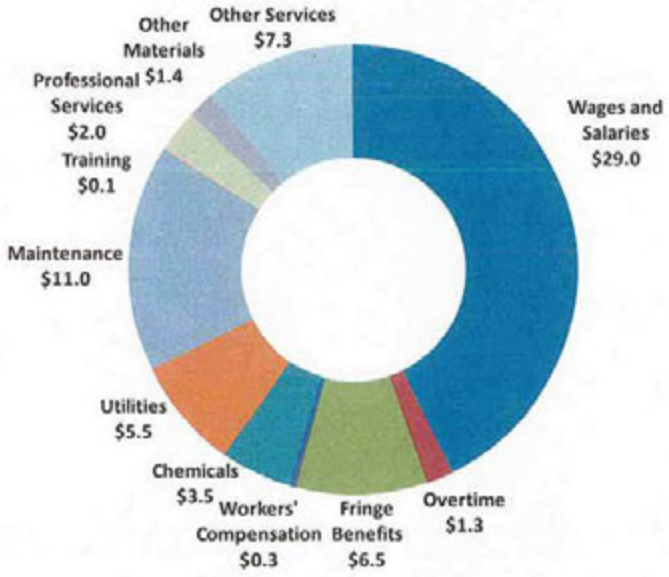
Total Revenues of $235.2 million were at budget.

Please refer to Attachment 1 for a more detailed comparison by line item of the budget variances for the year to date.

Direct Expenses

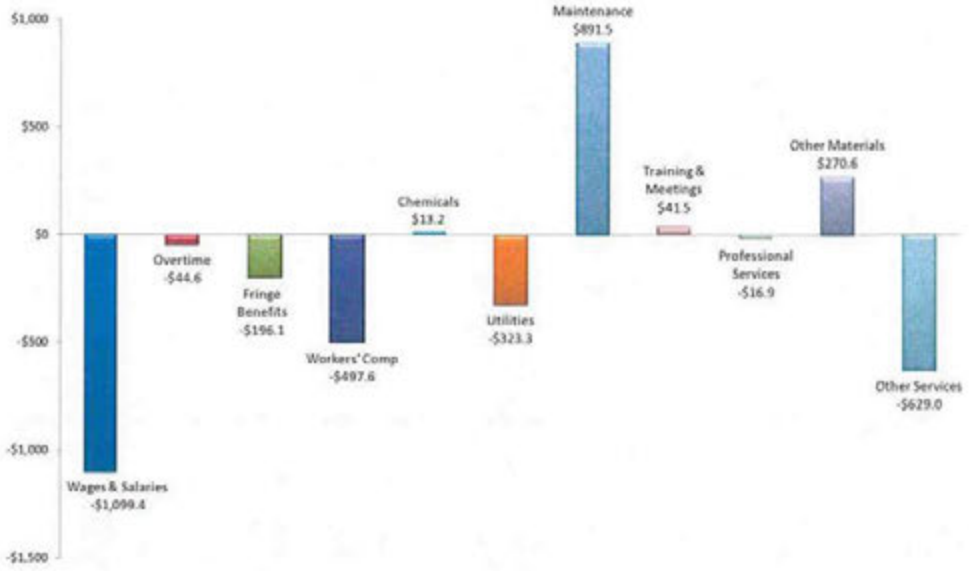
Year-to-date direct expenses totaled $67.8 million, $1.6 million or 2.3% less than budgeted.

FY17 Direct Expenses (in millions)



The underspending on direct expenses is related to Wages and Salaries, Other Services, Worker's Compensation, Energy & Utilities, Fringe Benefits, Overtime, and Professional Services; offset by higher spending for Maintenance, Other Materials, and Chemicals.

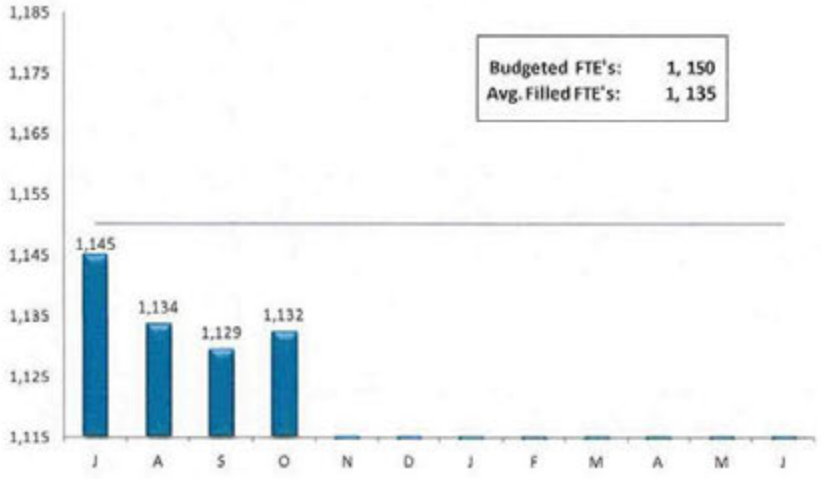
FY17 Direct Expense Variance
(in 000's)



Wages and Salaries

Wages and Salaries were underspent by $1.1 million or 3.7% mainly as a result of lower average Full Time Equivalent positions (FTEs) than budgeted, the timing of backfilling vacant positions, and the salary mix differential between staff retiring and new hires. The average FTEs through October were 1,135, which was 15 positions lower than the 1,150 FTEs budgeted.

FY17 MWRA Full Time Equivalent (FTE) Position Trend



Other Services

Other Services spending was lower than budget by $629,000 or 7.9% due to lower spending of $322,000 for sludge pelletization services because of lower year to date quantities; $119,000 for

Space/Lease Rentals due to lower escrow payments at the Chelsea Facility for taxes and insurance, and lower pass-through maintenance cost at the Charlestown Navy Yard Facility; $113,000 for Grit and Screenings disposal services primarily due to lower quantities; and $64,000 for Other Services primarily for timing of community lead testing assistance.

Workers' Compensation

Workers' Compensation expenses were lower than budget by $498,000 or 63.7% based on lower medical expenses of $253,000 and compensation payments of $250,000. In October, actual spending was $20,000 under budget. The majority of lower expenses are due to reserve decreases earlier in the fiscal year associated with a few cases.

Energy and Utilities

Energy and Utilities were underspent by $323,000 or 5.6%, due to lower electricity costs of $285,000, primarily for lower than budgeted pricing at Deer Island Treatment Plant.

Fringe Benefits

Fringe Benefits spending was lower than budgeted by $196,000 or 2.9% primarily for lower Health Insurance costs of $181,000 due to fewer than budgeted participation, and the mix change between family and individual plans.

Overtime

Overtime was lower than budgeted by $45,000 or 3.4% primarily due to lower spending in Wastewater Operations.

Maintenance

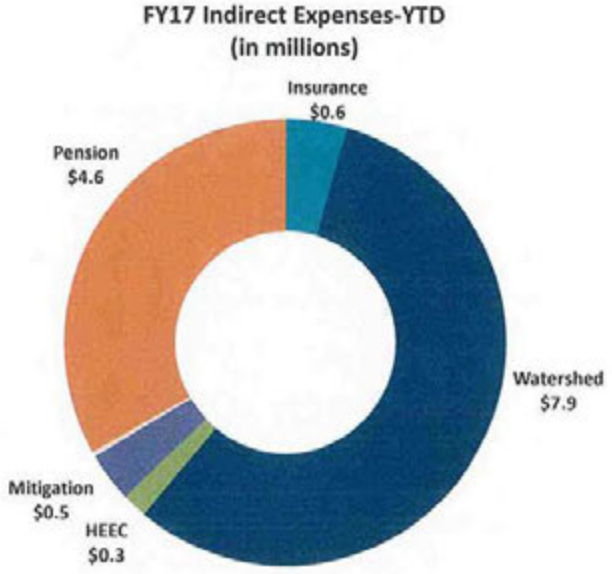
Maintenance expenses were higher than budgeted by $891,000 or 8.8%. The Nut Island fire incident accounts for $398,000 of the variance. The rest is primarily related to timing of the expenditures of funds budgeted in later months. Some projects include sewer system manhole rehabilitation, paving of in-house maintenance projects, spare assembly for DeLauri Pump Station wastewater pump, and maintenance under the Deer Island cryogenic contract.

Other Materials

Other Materials were higher than budget by $271,000 or 24.2% mainly due to timing of Vehicle Purchases of $185,000; Other Materials of $75,000 primarily for gravel at the Clinton Landfill; and Computer Hardware of $73,000. This is offset by lower Vehicle Expenses of $109,000 due to lower fuel prices.

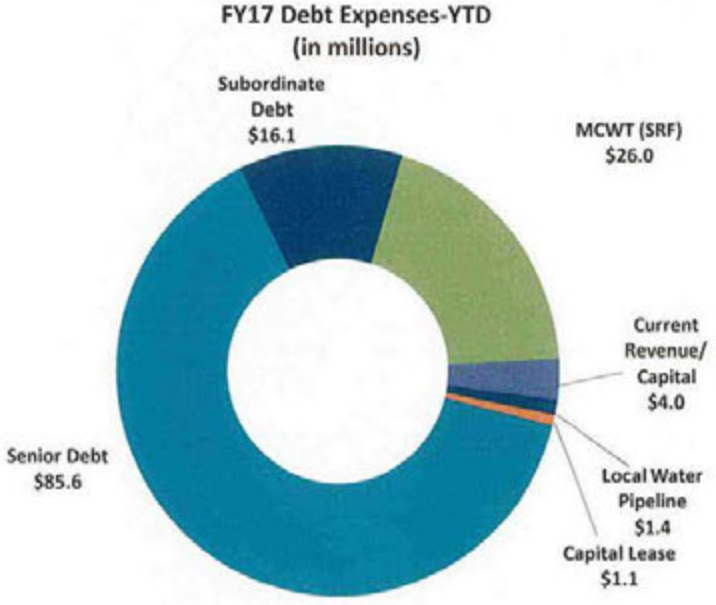
Indirect Expenses

For the fiscal year, Indirect Expenses totaled $13.8 million, $70,000 or 0.5% lower than budget, related to lower than budgeted insurance claims and an over-accrual in FY16 for Watershed management operating expenses.



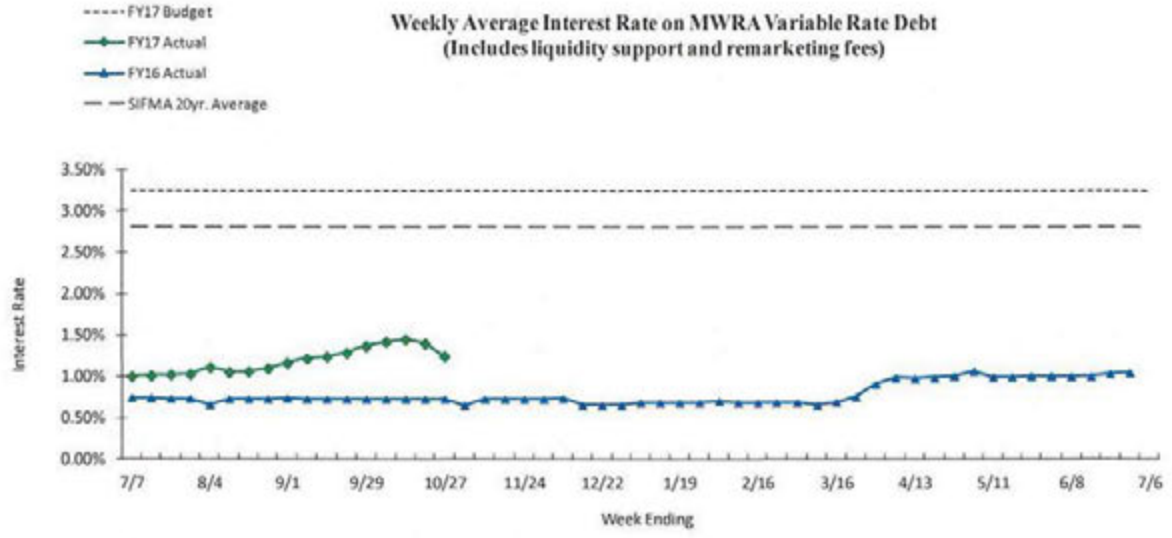
Debt Service

Debt Service expenses include the principal and interest payment for fixed debt, the variable subordinate debt, 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.



Debt Service expenses for the fiscal year totaled $134.1 million, which was $3.8 million or 2.8% lower below budget, reflecting lower variable rate of $3.5 million, and $313,000 for the impact of the August 2016 refunding.

The graph below reflects the FY17 actual variable rate trend by week over the past year and the FY17 Budget.



Revenue &Income

Total Revenue for the fiscal year totaled $235.2 million which was $7,000 higher than budget.

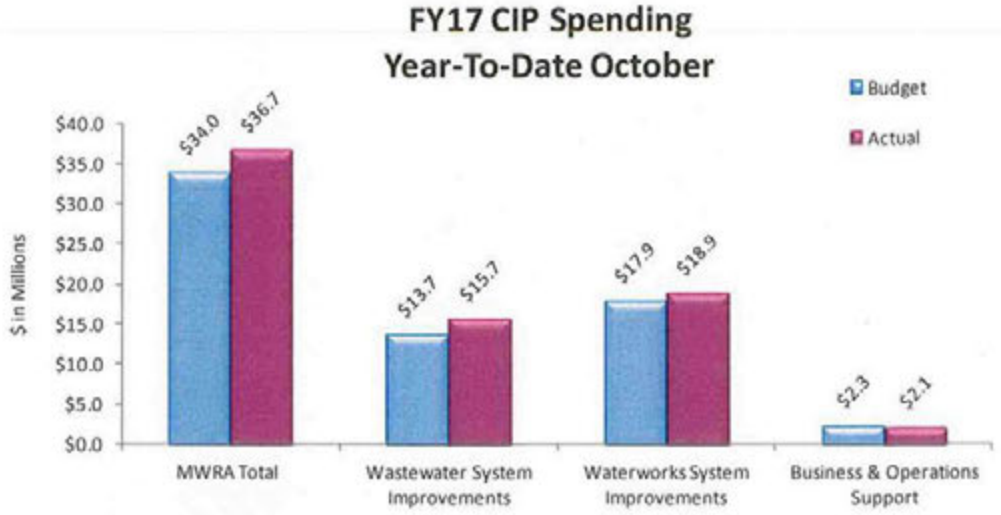
Higher than budget non-rate Revenue was driven by higher Other Revenue of $270,000, related to a class action lawsuit settlement for derivative agreements, and higher than budgeted sale of surplus equipment. This is offset by lower Investment Income of $279,000 for unanticipated calls re-invested at lower rates.

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

FY17 Capital Improvement Program

Capital expenditures in FY17 total $36.7 million through the end of October, $2.7 million or 8.2% higher than 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, total capital spending was $31.2 million, $0.9 million or 3.0% over budget.



Totals may not add due to rounding.

Overall overspending reflects the combined overspending of Waterworks Improvements of $1.0 million and Wastewater Improvements of $1.9 million, offset by Business and Operations Support underspending of $0.1 million.

Spending By Program:

$ in Millions	Budget	Actuals	$ Var.	% Var.
Wastewater System Improvements				
Interception & Pumping	5.4	5.7	0.2	4.5%
Treatment	4.6	6.3	1.6	34.6%
Residuals	0.0	0.0	0.0	N/A
CSO	5.7	5.8	0.1	1.4%
Other	(2.0)	(2.0)	0.0	0.0%
Total Wastewater System Improvements	**$13.7**	**$15.7**	**$1.9**	**14.1%**
Waterworks System Improvements				
Drinking Water Quality Improvements	0.9	0.3	(0.6)	-68.4%
Transmission	9.0	7.5	(1.5)	-16.7%
Distribution & Pumping	5.5	7.1	1.6	28.7%
Other	2.5	4.1	1.6	N/A
Total Waterworks System Improvements	**$17.9**	**$18.9**	**$1.0**	**5.5%**
Business & Operations Support	**$2.3**	**$2.1**	**($0.1)**	**-6.0%**
Total MWRA	**$34.0**	**$36.7**	**$2.8**	**8.2%**

Totals may not add due to rounding.

The main reasons for the project spending variances in order of magnitude are:

Water Distribution and Pumping: Net overspending of $1.6 million

- $1.4 million for Spot Pond Supply Mains due to additional work for Webster Avenue Pipeline Construction and $1.2 million for Section 89/29 Redundancy Phase 1B Construction due to contractor progress.
- The overspending was partially offset by underspending on Weston Aqueduct Supply Mains Section 36/C/S9-A11 Valve of $0.8 million due to timing of work, and Redundancy Pipeline Section 111 Phase 1 of $0.2 million due to delay of pipe materials delivery.

Wastewater Treatment: Net overspending of $1.6 million

- $1.3 million for Deer Island Power System Improvements and $0.5 million for Clinton Phosphorus Reduction Construction due to contractor progress, and $0.3 for Electrical Upgrades Construction 4 due to timing of final work.
- The overspending was partially offset by underspending on Butterfly Valve Replacement of $1.0 million due to equipment delivery delays.

Waterworks Other: Net overspending of $1.6 million

- $0.2 million for Quabbin Power, Communication & Security due to contractor progress.
- $1.8 million due to greater than anticipated local water pipeline loans.
- The overspending was partially offset by underspending on the Beacon Street Line Repair of $0.5 million due to a delay in the start of construction for tree relocation and permits.

Waterworks Transmission: Net underspending of $1.5 million

- $1.3 million for Long Term Redundancy primarily due to less than anticipated progress due to construction issues for the Wachusett Aqueduct Pump Station Construction.
- $0.6 million caused by less than anticipated progress for the Sudbury/Weston Aqueduct Repairs.
- The underspending was partially offset by overspending $0.3 million for the Hatchery Pipeline Construction due to contractor progress.

Drinking Water Quality Improvements: Net underspending of $0.6 million

- $0.3 million for Southborough Water Quality Upgrades and Spot Pond Storage Facility Design/Build of $0.3 due to timing of final work.

Interception & Pumping: Net overspending of $0.2 million

- $1.2 million for Alewife Brook Pump Station Rehab Construction due to contractor progress, and $0.5 million for Chelsea Screenhouse Upgrades due to timing of final work.
- The overspending was partially offset by underspending on Caruso Pump Station Improvements Construction of $1.4 million due to construction delays.

Construction Fund Balance

The construction fund balance was at $91.0 million as of the end of October. Commercial Paper availability was at $222.0 million to fund construction projects.

Attachment 1 – Variance Summary October 2016
Attachment 2 – Current Expense Variance Explanations
Attachment 3 – Capital Improvement Program Variance Explanations

ATTACHMENT 1

	October 2016 Year-to-Date					
	Period 4 YTD Budget	Period 4 YTD Actual	Period 4 YTD Variance	%	FY17 Approved	% Expended
EXPENSES						
WAGES AND SALARIES	$ 30,098,053	$ 28,998,662	$ (1,099,391)	-3.7%	$ 101,588,897	28.5%
OVERTIME	1,322,693	1,278,113	(44,580)	-3.4%	4,192,676	30.5%
FRINGE BENEFITS	6,653,804	6,457,723	(196,081)	-2.9%	20,242,323	31.9%
WORKERS' COMPENSATION	781,397	283,787	(497,610)	-63.7%	2,344,190	12.1%
CHEMICALS	3,465,798	3,478,980	13,182	0.4%	9,110,407	38.2%
ENERGY AND UTILITIES	5,783,850	5,460,562	(323,288)	-5.6%	21,541,077	25.3%
MAINTENANCE	10,081,038	10,972,498	891,460	8.8%	31,080,642	35.3%
TRAINING AND MEETINGS	88,679	130,148	41,469	46.8%	435,481	29.9%
PROFESSIONAL SERVICES	2,043,564	2,026,652	(16,912)	-0.8%	6,531,939	31.0%
OTHER MATERIALS	1,116,622	1,387,232	270,610	24.2%	6,219,630	22.3%
OTHER SERVICES	7,965,286	7,336,303	(628,983)	-7.9%	22,974,855	31.9%
TOTAL DIRECT EXPENSES	**$ 69,400,784**	**$ 67,810,660**	**$ (1,590,125)**	**-2.3%**	**$ 226,262,117**	**30.0%**
INSURANCE	$ 653,159	$ 636,122	$ (17,037)	-2.6%	$ 1,997,898	31.8%
WATERSHED/PILOT	7,941,376	7,886,056	(55,320)	-0.7%	24,291,268	32.5%
BECo PAYMENT	252,993	259,992	6,999	2.8%	773,859	33.6%
MITIGATION	509,346	504,377	(4,969)	-1.0%	1,558,000	32.4%
ADDITIONS TO RESERVES	(54,839)	(54,839)	-	0.0%	(167,742)	32.7%
RETIREMENT FUND	4,632,624	4,632,624	-	0.0%	4,632,624	100.0%
POST EMPLOYEE BENEFITS	-	-	-	---	4,876,050	0.0%
TOTAL INDIRECT EXPENSES	**$ 13,934,659**	**$ 13,864,332**	**$ (70,327)**	**-0.5%**	**$ 37,961,957**	**36.5%**
STATE REVOLVING FUND	$ 25,997,481	$ 25,997,481	$ -	0.0%	$ 86,971,915	29.9%
SENIOR DEBT	85,931,114	85,617,833	(313,281)	-0.4%	268,472,556	31.9%
CORD FUND	-	-	-	---	-	---
DEBT SERVICE ASSISTANCE	-	-	-	---	(873,804)	---
CURRENT REVENUE/CAPITAL	3,988,462	3,988,462	-	0.0%	12,200,000	32.7%
SUBORDINATE MWRA DEBT	19,585,470	19,585,470	-	0.0%	69,997,992	28.0%
LOCAL WATER PIPELINE CP	1,356,483	1,356,483	-	0.0%	4,149,242	32.7%
CAPITAL LEASE	1,051,732	1,051,732	-	0.0%	3,217,060	32.7%
DEBT PREPAYMENT	-	-	-	---	10,994,960	0.0%
VARIABLE DEBT	-	(3,513,599)	(3,513,599)	---	-	0.0%
DEFEASANCE ACCOUNT	-	-	-	---	-	---
TOTAL DEBT SERVICE	**$ 137,910,741**	**$ 134,083,861**	**$ (3,826,880)**	**-2.8%**	**$ 455,129,921**	**29.5%**
TOTAL EXPENSES	**$ 221,246,184**	**$ 215,758,853**	**$ (5,487,332)**	**-2.5%**	**$ 719,353,995**	**30.0%**
REVENUE & INCOME						
RATE REVENUE	$ 227,171,818	$ 227,171,818	$ -	0.0%	$ 694,878,500	32.7%
OTHER USER CHARGES	3,768,187	3,783,989	15,802	0.4%	8,752,834	43.2%
OTHER REVENUE	1,340,087	1,610,279	270,192	20.2%	6,519,171	24.7%
RATE STABILIZATION	-	-	-	---	-	---
INVESTMENT INCOME	2,891,595	2,612,749	(278,846)	-9.6%	9,473,490	27.6%
TOTAL REVENUE & INCOME	**$ 235,171,687**	**$ 235,178,834**	**$ 7,148**	**0.0%**	**$ 719,623,995**	**32.7%**

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY17 Budget YTD October	FY17 Actuals YTD October	FY17 YTD Actual vs. FY17 Budget		Explanations
			$	%	
Direct Expenses					
Wages & Salaries	30,098,053	28,998,662	(1,099,391)	-3.7%	Underspending is mainly the result of lower average Full Time Equivalent positions (FTEs) than budgeted, the timing of backfilling vacant positions and the salary mix differential between staff retiring and new hires. The average FTEs for the fiscal year was 1,135, which was 15 positions lower than the 1,150 FTEs budgeted.
Overtime	1,322,693	1,278,113	(44,580)	-3.4%	Underspending is primarily in Wastewater Ops.
Fringe Benefits	6,653,804	6,457,723	(196,081)	-2.9%	Lower than budget mainly due to Health Insurance of $181,000, due to fewer than budgeted participation and the mix change between family and individual plans.
Worker's Compensation	781,397	283,787	(497,610)	-63.7%	Underspending due to lower medical payments of $253,000 and compensation payments of $250,000. In October actual spending was $20,000 under budget. It is important to note that spending on this line item can change significantly depending on future claims and severity of cases.
Chemicals	3,465,798	3,478,980	13,182	0.4%	Overspending of Sodium Hypochlorite of $64,000; Hydrogen Peroxide; of $37,000; Carbon Dioxide of $24,000; and Ferric Chloride of $16,000. This is offset by lower spending of Activated Carbon of $44,000; Liquid Oxygen of $25,000; Other of $21,000; Hydrofluosilic Acid of $14,000; and Other Oxidizers of $8,000.

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY17 Budget YTD October	FY17 Actuals YTD October	FY17 YTD Actual vs. FY17 Budget		Explanations
			$	%	
Utilities	5,783,850	5,460,562	(323,288)	-5.6%	Underspending in Electricity of $285,000 primarily at DITP due to lower prices and Wastewater facilities partially for not using wet scrubbers at NI and lower flows throughout the system. This is offset by higher spending at waterworks facilities attributed to pumping more water to Bedford and higher than anticipated demand charges at the new Spot Pond Pump Station.
Maintenance	10,081,038	10,972,498	891,460	8.8%	Services were overspent by $578,000 and Materials were overspent by $313,000. Nut Island fire remediation efforts have costs $398,000 in FY17 for both materials and services. The rest is primarily related to timing of the expenditures of funds budgeted in later months. Some projects include sewer system manhole rehab, paving of in-house maintenance projects, spare assembly for DeLauri Pump Station raw wastewater pump, and maintenance under the Deer Island cryo contract.
Training & Meetings	88,679	130,148	41,469	46.8%	Overspending primarily in FOD and MIS due to timing.
Professional Services	2,043,564	2,026,652	(16,912)	-0.8%	Lower spending on Other Services of $57,000 primarily in Treasury and Op Admin; $29,000 for Resident Inspection; $11,000 in Security; and $10,000 for Audit Services. This is offset by higher spending for Legal Services of $80,000 in the Law Department.
Other Materials	1,116,622	1,387,232	270,610	24.2%	Higher than budget spending of $185,000 due to timing of Vehicle Purchases/ Replacements; $75,000 for Other Materials primarily for gravel for Clinton landfill; and $73,000 for Computer Hardware in MIS. This is offset by underspending of $109,000 in vehicle expenses primarily due to lower fuel prices.
Other Services	7,965,286	7,336,303	(628,983)	-7.9%	Lower than budgeted spending of $322,000 for sludge pelletization services for lower year to date quantities; $119,000 for Space Lease/Rentals due to lower escrow for Chelsea taxes and insurance and pass through maintenance cost at CNY; $113,000 for Grit and Screenings disposal services primarily due to lower quantities; and $64,000 for Other Services primarily for timing of community lead testing assistance.
Total Direct Expenses	**69,400,784**	**67,810,660**	**(1,590,124)**	**-2.3%**	

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY17 Budget YTD October	FY17 Actuals YTD October	FY17 YTD Actual vs. FY17 Budget		Explanations
			$	%	
Indirect Expenses					
Insurance	653,159	636,122	(17,037)	-2.6%	Lower Claims of $27,000 offset by higher premiums of $10,000.
Watershed/PILOT	7,941,376	7,886,056	(55,320)	-0.7%	Lower Watershed Reimbursement due to over accrual at the end of FY16 as compared to actual invoiced paid.
HEEC Payment	252,993	259,992	6,999	2.8%	
Mitigation	509,346	504,377	(4,969)	-1.0%	Actual inflation rate was 1.5% vs. 2.5% used for the budget.
Addition to Reserves	(54,839)	(54,839)	-	0.0%	
Pension Expense	4,632,624	4,632,624	-	0.0%	
Post Employee Benefits	-	-	-		
Total Indirect Expenses	**13,934,659**	**13,864,332**	**(70,327)**	**-0.5%**	
Debt Service					
Debt Service	137,910,741	134,083,861	(3,826,880)	-2.8%	Lower variable rate of $3.5 million.
Debt Service Assistance	-	-	-		
Total Debt Service Expenses	**137,910,741**	**134,083,861**	**(3,826,880)**	**-2.8%**	
Total Expenses	**221,246,184**	**215,758,853**	**(5,487,331)**	**-2.5%**	
Revenue & Income					
Rate Revenue	227,171,818	227,171,817	-	0.0%	
Other User Charges	3,768,187	3,783,989	15,802	0.4%	
Other Revenue	1,340,087	1,610,279	270,192	20.2%	$179k for settlement of class action lawsuit settlement for derivative agreements and $84k from sale of surplus equipment.
Rate Stabilization	-	-	-		
Investment Income	2,891,595	2,612,749	(278,846)	-9.6%	Investment Income is under budget for unanticipated calls re-invested at lower rates.
Total Revenue	**235,171,687**	**235,178,834**	**7,147**	**0.0%**	
Net Revenue in Excess of Expenses	**13,925,503**	**19,419,981**	**5,494,478**		

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

	FY17 Budget YTD October	FY17 Actuals YTD October	YTD Actuals vs. Budget		Explanations
			$	%	
Wastewater					
Interception & Pumping (I&P)	$5,413	$5,658	$245	4.5%	Overspending Alewife Brook Pump Station Rehab Construction: $1.2M (project progress) Chelsea Screenhouse Upgrades: $0.5M (work scheduled for FY16 performed in FY17) Offset Underspending Caruso Pump Station Improvements Construction: $1.4M (delay in receipt of HVAC equipment due to unforeseen roof replacement)
Treatment	$4,650	$6,257	$1,607	34.6%	Overspending Power System Improvements - Construction: $1.3M (project progress) Clinton Wastewater Treatment Plant Phosphorus Removal - Construction: $0.5M (project progress) Electrical Equipment Upgrades Construction 4: $0.3M (project progress) Other smaller projects: $0.5M Offset Underspending Butterfly Valve Replacement: $1.0M (longer than anticipated lead time for valves as a result of coating issues)
Residuals	$0	$0	$0	-	
CSO	$5,698	$5,779	$81	1.4%	
Other Wastewater	($2,019)	($2,019)	$0	0.0%	
Total Wastewater	**$13,742**	**$15,675**	**$1,933**	**14.1%**	

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

	FY17 Budget YTD October	FY17 Actuals YTD October	YTD Actuals vs. Budget		Explanations
			$	%	
Waterworks					
Drinking Water Quality Improvements	$927	$293	($634)	-68.4%	Underspending CP7 Existing Facilities: $0.3M (timing of move into Southboro lab and pending balancing credit change order) Spot Pond Storage Facility: $0.3M (installation of communication tower delayed but has begun)
Transmission	$8,996	$7,491	($1,505)	-16.7%	Underspending Wachusett Aqueduct Pump Station: $1.3M (pending redesign of work adjacent to City of Marlborough water pipe and progress less than anticipated at the pump station) Rosemary Brook Building Repair: $0.6M (anticipated time extension) Offset Overspending Hatchery Pipeline construction: $0.3M (project progress)
Distribution & Pumping	$5,506	$7,086	$1,580	28.7%	Overspending Section 4 Webster Ave Bridge Pipe Rehab - Construction: $1.4M (additional change order work based on redesign) Section 89/29 Redundancy Phase 1B Construction: $1.2M (project progress) Offset Underspending Weston Aqueduct Supply Mains Section 36/C/S9 - A11 Valve: $0.8M (anticipated credit change order for less than estimated quantities of rock and contaminated soil, and timing of valve installation work) Redundancy Pipeline Section 111 Phase 1 Construction: $0.2M (delivery of pipe material delayed)
Other Waterworks	$2,510	$4,061	$1,552	61.8%	Overspending Local Water System Assistance Program: $1.9M (greater community requests for loans) Quabbin Power, Communication & Security - Construction: $0.2M (project progress) Offset Underspending
Total Waterworks	**$17,939**	**$18,931**	**$992**	**5.5%**	

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

	FY17 Budget YTD October	FY17 Actuals YTD October	YTD Actuals vs. Budget		Explanations
			$	%	
Business & Operations Support					
Total Business & Operations Support	$2,272	$2,136	($136)	-6.0%	Underspending Application Improvement Program: $0.3M (timing of IT Strategic Plan implementation) Offset overspending Equipment Purchase: $0.2M (timing of vehicle purchases)
Total MWRA	$33,953	$36,742	$2,789	8.2%	

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: November 16, 2016
SUBJECT: MWRA's Overtime Trends (FY2011-2016)

COMMITTEE: Administration ,Finance & Audit

_X_ Information
_____ Vote

Kathy Soni, Budget Director
Louise L. Miller, Budget Manager
Preparer/Title

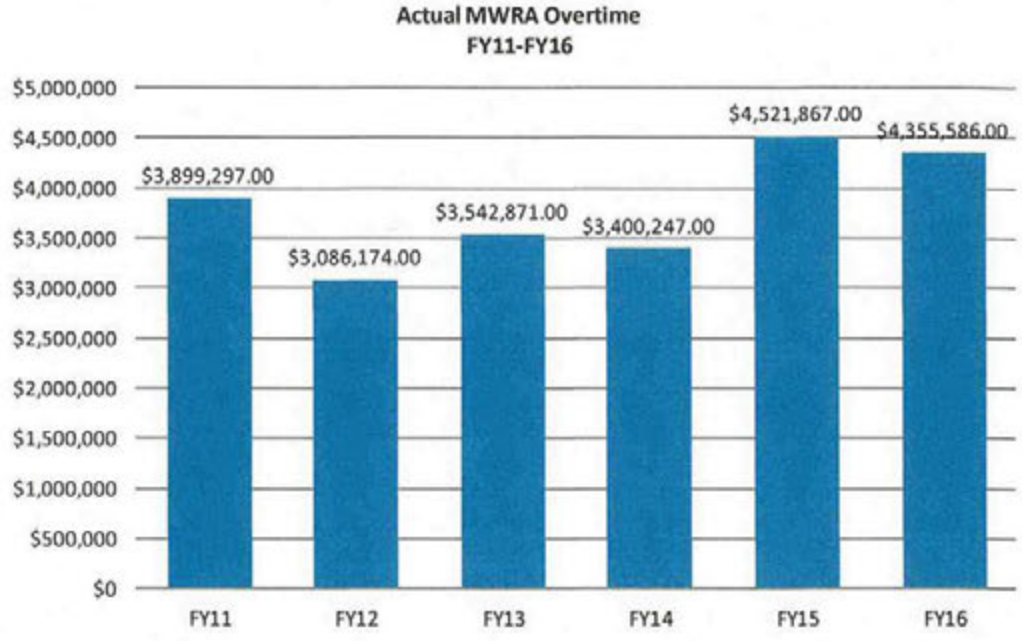
Thomas J. Durkin
Director, Finance

RECOMMENDATION:

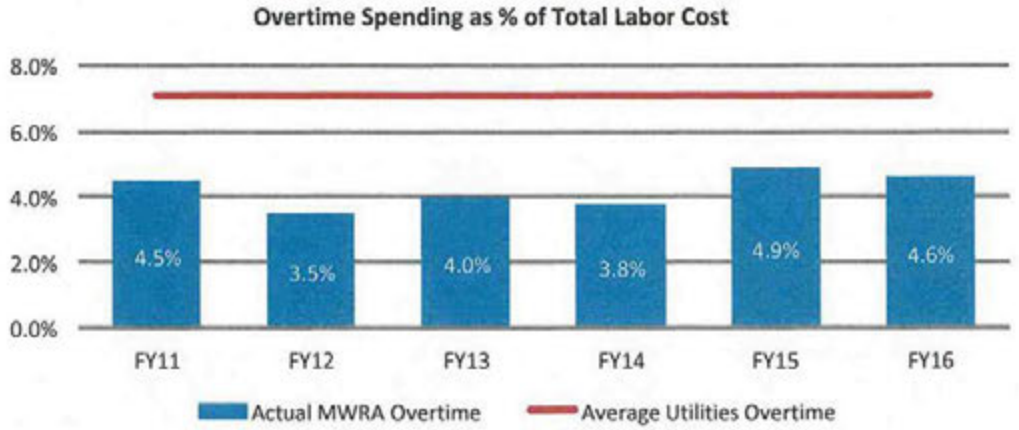
For information only. This staff summary provides an overview of trends for overtime budgets and expenditures over the past six fiscal years. Annual budgets for overtime and actual expenditures are consistent as a percentage of total salaries and wages. MWRA overtime spending continues to be below the industry standard as identified in a May 2012 staffing study by the Amawalk Consulting Group, LLC. Based on a review of overtime usage by the various MWRA departments, it also continues to be more cost-effective to pay overtime to existing employees rather than hire new employees.

DISCUSSION:

From FY 2011 through FY 2016, MWRA spent an average of $3.8 million for overtime, with actual spending ranging from $3.1 million to $4.5 million depending mostly upon weather events and emergencies.



The overtime spending is 4.2% of the average salaries and wages during that same period of time and represents 1.8% of the average direct operating expenses. The MWRA Staffing Study included a brief analysis of the use of overtime by MWRA. The Study concluded that "MWRA is significantly below the average of comparable utilities in terms of overtime spending as percentage of total labor costs." (p.61). The Study was based on MWRA FY 2011 actual expenditures, with overtime spending as 4.5% of total labor costs. According to the Report, the average overtime expenditure for comparable utilities was 7.1% with a median of 7.3%. From FY 2012 through FY 2016, actual expended overtime, which ranged from 3.5% to 4.9% of total labor costs, has remained well below the industry norm.



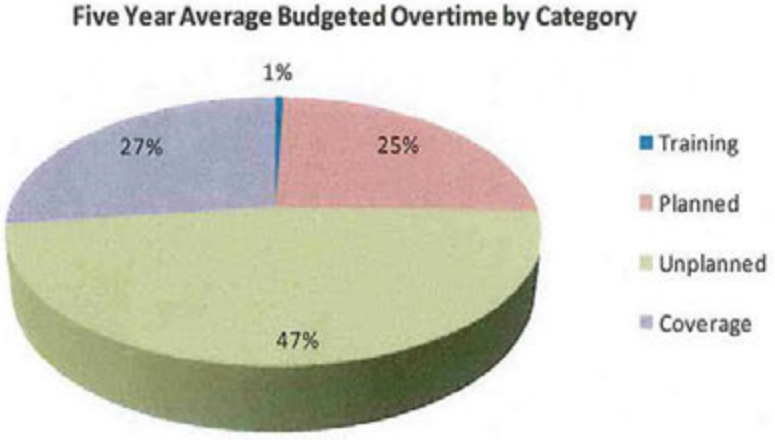
The three years in which the overtime exceeded 4%, either weather events, such as heavy rains in FY 2011 and heavy snowfall in FY 2015, emergency events including the fire at the Nut Island Headworks in FY 2016 or scheduled overtime due to construction projects, such as the North Main Pump Station Valve Replacement Project at Deer Island in FY 2016, accounted for the additional overtime.

MWRA achieved these spending levels as a result of management controls such as: negotiated union contracts related to coverage needs, cross functional training, consolidation of water and sewer operations, de-staffing of facilities, evaluation of cost impacts for certain operations of additional staffing versus use of overtime.

MWRA has been managing overtime by four categories: unplanned/emergencies, coverage, planned miscellaneous, and planned training. The majority of unplanned overtime relates to weather events, such as wet weather or snow, and the remainder are emergencies related to operational issues. Coverage is overtime to cover another person's shift when minimum staffing requirements will not be met when that person is out for sick, vacation or personal days. Planned miscellaneous comprises other categories of planned overtime, such as overtime in support of construction projects. Planned training is scheduled training outside of normal work hours.

Every year, the budget for overtime is set based upon the historical average of the unplanned/emergency overtime and a projection of coverage and planned overtime categories. An analysis of the overtime budgets for the past five years shows that the relative percentage of each category to the budget has remained similar over the years. Variations have occurred most frequently in planned overtime to support specific projects such as the partial shutdowns of the Deer Island Treatment Plant for the Valve Replacement Project.

On average, unplanned events account for approximately 50% of MWRA overtime budget, with coverage and planned miscellaneous each accounting for approximately 25% of overtime, and training contributing 1% to the budget.



While MWRA's overtime expenditures are lower than the industry norm, whether overtime can be reduced by hiring additional employees is reviewed from time to time. Each situation when additional staff are required is evaluated on the merit of that particular circumstance. Before a new employee is hired, there must be a sufficient number of work hours for that employee, and the hours must be able to be aggregated into what would be normal working shifts. This is at least 1680 total hours of overtime, the average number of working hours for MWRA employees, distributed monthly so that there are a consistently sufficient number of hours, and the hours of overtime must be non-emergency and not related to projects. Unplanned/emergency overtime by definition is not able to be covered through additional employees since unplanned/emergency hours are irregular. Project related overtime is also highly variable.

The Operations Division looks at the maintenance backlog as well as a measure of appropriate staffing levels. Industry standards for maintenance suggest that no maintenance backlog indicates overstaffing. For MWRA Operations, a maintenance backlog of 4-8 weeks is the standard for full staffing. Should the maintenance backlog increase and remain consistently above 8 weeks, then an evaluation of additional staffing would be done. An analysis would be based on the following:

Backlog = number of hours of work based on Maximo (maintenance software) / number of available craft hours

- Available craft hours are evaluated taking into consideration:
  - Vacation
  - Sick
  - Personal
  - Travel time to work site
  - Lunch breaks
- Special circumstances impacting the backlog are also reviewed:
  - Unforeseen events such as the Nut Island Fire can result in staff resources being redirected to address non-maintenance issues and as a result temporarily increase the backlog.

MWRA's Internal Audit Unit reviewed overtime expenditures by employee in calendar year 2015. Based on that data, the departments with sufficient overtime to warrant further analysis were: Deer Island with 21,237 hours, Metro Maintenance with 15,452 hours, Wastewater Operations with 18,411 hours, and Water Operations and Maintenance with 24,584 hours. After review of the overtime hours expended by category, only Deer Island and Metro Water Operations had sufficient overtime hours to consider the cost effectiveness of adding a new employee. Deer Island's total number of hours only allowed for the addition of one employee, if the hours were distributed over a normal working hours shift, which was unlikely given that the month with the lowest coverage only produced 340 hours of overtime. The same was true for Metro Water Operations with a total of 290 hours of coverage for the lowest month.

A review of the cost of paying overtime to existing employees versus the cost of hiring a new employee yields a lower overtime rate for existing employees than the hourly rate for a new employee, including the cost of fringe benefits, assuming that both the new employee and existing employee will receive the same rate of pay. It is true that most MWRA employees are at the top step and that there may be some short-term potential savings from hiring new employees at a lower step. The savings, however, would be minimal, given that the cost of overtime for coverage of the new employee's work shift should also be included, as well as training the new employee although no monetary value is attached to either of these.

Overtime Hourly Cost Compared to New Employee Hourly Cost

Assumptions

Annual Salary	$60,000
Total Annual Hours	2,080
Annual Benefit Hours	400
Annual Working Hours	1,680
Overtime at 1.5	

Costs per Working Hour for New Employee		**Costs per Working Hour for Existing Employee**	
Salary	$60,000	Overtime Hourly Rate	$43.27
Benefits at 33%	$19,800	Benefits at 1.45%	$0.63
Annual Cost	$79,800	Overtime Hourly Cost	$43.90
Cost per Working Hour	$47.49	Cost per Working Hour	$43.90

*Annual benefit hours and benefits costs based on Internal Audit fringe rate computation for FY17.

In conclusion, overtime for MWRA has been consistent in the range of 3.5% to 4.9% during the FY11-16 period, as a percent of total wages and salaries, compared to the 7.1% to 7.3% range for comparable utilities.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: November 16, 2016
SUBJECT: Approval of the Seventy-Fourth Supplemental Bond Resolution

---

COMMITTEE: Administration, Finance &Audit

X VOTE
___INFORMATION

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

Thomas J. Durkin
Director, Finance

RECOMMENDATION:

To adopt the Seventy-Fourth Supplemental Resolution authorizing the issuance of up to $55,000,000 of Massachusetts Water Resources Authority Subordinated General Revenue Bonds and the supporting issuance resolution.

DISCUSSION:

The Massachusetts Clean Water Trust ("MCWT") is in the process of finalizing its plans to issue its Pool 20 bonds for the purpose of providing subsidized financing for water and wastewater capital projects to Massachusetts governmental entities. In order to move ahead with the Pool 20 borrowing, MCWT requires that all borrowers sign loan commitment documents which indicate that they have the authorization to borrow these funds. Typically once that process is complete, MCWT will issue bonds and close on the loans with the various borrowers within three to six months. MCWT is currently planning on issuing its Pool 20 bonds in either late January or early January 2017.

In Fiscal Year 2017, MWRA anticipates receiving up to $55 million in new low interest loans from the Pool 20 proceeds to fund several water and wastewater projects. Depending upon the useful life of the assets financed, water projects funded with MCWT financing may have a maturity schedule of up to 20 years; wastewater projects funded with MCWT financing may have a maturity of up to 30 years. The loans with a 20-year maturity will have a fixed interest rate of 2.15% and loans with a 30-year maturity will have a fixed interest rate of approximately 2.55%, including the MCWT administrative fee of 0.15%.

MWRA expects to receive reimbursements for projects including: Wachusett Aqueduct Pump Station, Weston Aqueduct Supply Mains, Spot Pond Covered Storage, Combined Sewer Overflow ("CSO") Control Plan, and Deer Island Treatment Plant Improvements.

BUDGET/FISCAL IMPACT:

There are sufficient funds available in the FY17 CEB to pay the debt service costs associated with these borrowings.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: November 16, 2016
SUBJECT: Security Equipment Maintenance and Repair Services
Viscom Systems, Inc.
Contract EXE-038

COMMITTEE: Administration, Finance & Audit

X Information
_____ Vote

Michele S. Gillen
Director of Administration

Victor L'Esperance, Deputy Director, OEP
Andrew Hildick-Smith, Director, OEP
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

That the Executive Director, on behalf of the Authority, approve the award of Contract EXE-038, Security Equipment Maintenance and Repair Services, to the lowest responsible and eligible bidder, Viscom Systems, Inc., and execute said contract in the bid amount of $1,874,705.20, for a contract term of 1,095 calendar days from the Notice to Proceed.

DISCUSSION:

Protecting critical water and wastewater facilities is one of MWRA's highest priorities. MWRA currently employs a comprehensive security system to monitor and control access to critical facilities. The security system is comprised of a broad network of intrusion alarms, motion detection sensors, card access readers, closed-circuit television surveillance cameras, routers, a public address intercom network, panic strobe lighting, identification badge classifying and printing equipment, and the software, recorders, and servers that make up the "head end" of the system.

Contract EXE-038 is a three-year contract that will provide preventive and scheduled maintenance, and repair services for all components of MWRA's extensive security system. Provisions for software integration and response to unforeseen emergencies are also included in the contract. MWRA's Office of Emergency Preparedness has developed an appropriate preventive maintenance schedule for each piece of equipment and will determine on a case-by-case basis when to call the contractor in to repair critical equipment outside of normal business hours.

Procurement Process

Contract EXE-038 was advertised and bid in accordance with Chapter 149, Sections 44A-J of the Massachusetts General Laws. On October 20, 2016. Bid results are as follows:

Bidders	**Total Bid Amount**
Engineers Estimate	*$1,800,000.00*
Viscom Systems, Inc.	**$1,874,705.20**

Viscom's bid is 4.1% higher than the Engineer's Estimate.

The bid specifications included mandatory requirements that each bidder must employ field service technicians that are currently certified to maintain the security system in use at MWRA, and also must have at least three years experience maintaining systems of a similar size and type as MWRA's.

Staff reviewed Viscom's bid to confirm that it included all required elements of the work. The bid amount of $1,874,720.20 is $653,597.05 higher than the previous contract, although that was anticipated based upon adding an additional year and the increased number of cameras added at the western sites around the Quabbin Reservoir. These new requirements increased the price, but were included in the Engineer's Estimate. The new contract includes cost-of-living increases for the staff, and the allowance for spare/replacement parts was slightly decreased by approximately $5,000 over the previous contract because the prior contract included a one-time update requirement to replace end of life equipment.

References were checked and found to be favorable. Viscom Systems, Inc. is a local security systems integrator and maintenance provider with numerous clients in the greater Boston area. Viscom holds the current contract for these services, which expires on December 31, 2016. Staff have been very satisfied with the Contractor's performance.

Staff contacted LAN-TEL Communications, Inc., and Schneider Electric, the two other eligible firms who had obtained bid documents, to determine why these firms had not submitted bids. They both responded that existing business requirements precluded each from bidding.

Staff determined that Viscom Systems' bid price is reasonable, complete, and includes the payment of prevailing wage rate as required. Staff further determined that Viscom Systems' bid meets all of the requirements of the specifications, and that Viscom possesses all of the required certifications and manufacturers' authorizations. Staff are of the opinion that Viscom possesses the skill, ability, and integrity necessary to successfully complete the work under this contract and is qualified to do so.

Therefore, staff recommend the award of this contract to Viscom Systems, Inc. as the lowest responsible and eligible bidder.

BUDGET/FISCAL IMPACTS:

The FY17 Current Expense Budget contains adequate funds for this contract and consequent CEB's will include the required funding.

MBE/WBE PARTICIPATION:

There were no MBE/WBE participation requirements established for this contract because of limited opportunities for subcontracting.

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, November 16, 2016

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

Time: Immediately following AF&A Comm.

AGENDA

A. Contract Awards

1. Harbor and Outfall Monitoring 2017-2020: Water Column Monitoring, Battelle Memorial Institute, Contract OP-326A; and Benthic, Fish and Shellfish Monitoring, Normandeau Associates, Inc., Contract OP-326B

2. Cooperative Research Project with Center for Coastal Studies in Provincetown to Conduct Water Quality Monitoring in Cape Cod Bay: Contract S556

3. Supply and Delivery of Ferrous Chloride to the Deer Island Treatment Plant: Kemira Water Solutions, Inc., Bid WRA-4291

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the
Wastewater Policy and Oversight Committee

October 12, 2016

A meeting of the Wastewater Policy and Oversight Committee was held on October 12, 2016 at the Authority headquarters in Charlestown. Vice-Chairman Walsh presided. Present from the Board were Ms. Wolowicz and Messrs. Blackmon, Carroll, Foti, Pappastergion, Peña and Vitale. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Mike Hornbrook, John Vetere, Carolyn Fiore, John Riccio, Betsy Reilly, Ken Keay, Dave Duest, and Bonnie Hale. The meeting was called to order at 11:05 a.m.

Information

Chemical Delivery Incident at Clinton Wastewater Treatment Plant

Staff gave a presentation detailing an incident where a chemical delivery truck operator mistakenly pumped a small amount of chemical into the wrong line at the Clinton plant, the series of actions taken once the mistake was discovered, lessons learned and devices and procedures put in place to prevent another such incident in the future.

MWRA Industrial Waste Report #32: Industrial Pretreatment Program Annual Report to EPA for FY16

Staff gave a presentation on the annual report, and there was general discussion and question and answer.

2015 Deer Island Outfall Monitoring Overview

Staff gave a presentation outlining the results of the 2015 monitoring program.

Contract Awards

*Supply and Delivery of Sodium Hypochlorite to the Deer Island Treatment Plant: Borden & Remington Corp., Bid WRA-4269

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

The meeting adjourned at 12:00 p.m.

* Approved as recommended at October 12, 2016 Board of Directors meeting.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: November 16, 2016
SUBJECT: Harbor and Outfall Monitoring Contracts for 2017-2020
Water Column Monitoring, Battelle Memorial Institute, Contract OP-326A
Benthic, Fish and Shellfish Monitoring, Normandeau Associates, Inc. Contract OP-326B

COMMITTEE: Wastewater Policy & Oversight

___ INFORMATION
X VOTE

Michele S. Gillen
Director of Administration

Carolyn M. Fiore, Deputy COO, PP&P
Betsy Reilley, Ph.D., Director, Environmental Quality
Kenneth E. Keay, Senior Program Manager
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

The Harbor and Outfall Monitoring contracts provide regulatory required environmental monitoring of potential outfall impacts as required by the Environmental Protection Agency for MWRA's National Pollutant Discharge Elimination System (NPDES) permit for Deer Island. The scopes of work for Contracts OP-326A and OP-326B reflect reductions in the Ambient Monitoring Plan that came into effect in 2011. These contracts will provide field monitoring in 2017, 2018, and 2019, and sample analysis and report preparation in 2017 through 2020.

A Staff Summary on the 2015 results of the Harbor and Outfall Monitoring was presented at the October 12, 2016 Board meeting.

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to select two separate firms to provide Harbor and Outfall Monitoring services from 2017 to 2020, and to authorize the Executive Director, on behalf of the Authority, to execute two separate contracts as follows:

Contract OP-326A, Harbor and Outfall Monitoring, Water Column Monitoring, with Battelle Memorial Institute (Battelle), for an amount not to exceed $2,302,775.39, with a contract term of 48-months from the Notice to Proceed; and

Contract OP-326B, Harbor and Outfall Monitoring, Benthic, Fish and Shellfish Monitoring, with Normandeau Associates, Inc. (Normandeau), for an amount not to exceed $1,305,851.42, with a contract term of 46-months[1] from the Notice to Proceed.

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[1] The slightly longer term (48 months) for Contract OP-326A compared to Contract OP-326B (46 months) is necessary to allow for completion of the *Outfall Monitoring Overview* report.

BACKGROUND:

Specific, detailed regulatory requirements for environmental monitoring of the potential effects of MWRA's Deer Island Outfall discharges are incorporated into Deer Island's NPDES permit and are thus enforceable. The environmental monitoring requirements reflect the history of negotiations on several critical issues related to the planning and construction of the Deer Island Treatment Plant and the outfall. These issues include questions about environmental impacts of nutrients in MWRA's effluent, the environmental effects of the elimination of Secondary Treatment Battery D, endangered species issues raised by Cape Cod groups and the National Marine Fisheries Service, and EPA's decision to incorporate into the permit the provisions of the Contingency Plan that MWRA had prepared by agreement with EPA and the National Marine Fisheries Service in response to a recommendation issued with the Biological Opinion.

Results of the monitoring clearly document the dramatic environmental benefits of MWRA's investments in the Boston Harbor Project and the CSO Long-Term Control Program. This long-term monitoring, which began in 1992, has allowed MWRA to document that its outfall discharge into Massachusetts Bay has had only minimal impacts and has not caused environmental degradation. Environmental monitoring benefits MWRA in other ways since it has provided data that MWRA has been able to use to address concerns from regulatory agencies, public advocacy organizations, the media, and ratepayers, when phenomena that could be perceived to be caused by the outfall have occurred. For example, in the 16 years that the outfall has been on-line, staff have used the data to address questions about algal blooms in the harbor and the bay, including several major red tide events, changes in zooplankton populations, right whale population changes, harbor sediment quality, lobster fishery issues, a disease outbreak in winter flounder, shellfish safety, beach contamination, floatables, dissolved oxygen issues, and effects of CSOs and storm-water on environmental quality.

The ongoing monitoring dataset will continue to be valuable to MWRA in the future as EPA develops nutrient criteria for marine waters.

The results also allowed staff to propose a substantially reduced monitoring program that enables MWRA to meet its commitments at substantial savings. Direct expenditures in support of MWRA's required monitoring peaked in FY03 at approximately $4.3 million per year. Through a combination of initiatives, including two major revisions to the monitoring plan in 2003-2004 and in 2009-2010, and bringing many of the tasks in-house, MWRA has been able to reduce monitoring spending to approximately $1.5 million per year, a nearly 2/3 reduction from FY03.

The results of MWRA's Ambient Monitoring in calendar 2015 are discussed in the Permit-required 2015 *Outfall Monitoring Overview*, a report that was described in a staff summary presented to the Board at the October 12 meeting.

DISCUSSION:

Contracts OP-326A and OP-326B will provide field monitoring for three years (2017 through 2019), and sample analysis and report preparation in 2017 through 2020, as described in more detail below:

- Perform nine water quality surveys per year at 11 monitoring stations in Massachusetts Bay (See Figure 1), in compliance with the Permit-required monitoring Plan[2];
- At each station, sensors collect data at frequent intervals, from the surface to within a few feet of the seafloor, of water temperature, salinity, water clarity, dissolved oxygen, chlorophyll and other water quality parameters;
- In addition to sensor measurements, samples are collected at five water depths for dissolved and particulate nutrients, and for laboratory analyses of chlorophyll and dissolved oxygen used to calibrate the sensor measurements. Chlorophyll and nutrient analyses are carried out by MWRA's Department of Laboratory Services;
- Samples for the determination of the phytoplankton (microscopic algae) community are collected at two depths at every station, and a single zooplankton sample is collected to identify the community of tiny animals that eat the phytoplankton;
- Surveys of Massachusetts Bay in response to blooms of the algae responsible for red tide and paralytic shellfish poisoning in New England waters. When these blooms enter the bay from the Gulf of Maine, weekly surveys are triggered that continue until the bloom subsides. In years when no blooms enter the bay, no surveys are conducted; and
- Annual technical reports are prepared on the results of the water quality monitoring, and under contract OP-326A the consultant, along with MWRA staff, will compile and develop the annual "*Outfall Monitoring Overview*" report summarizing the Ambient Monitoring results for the year.

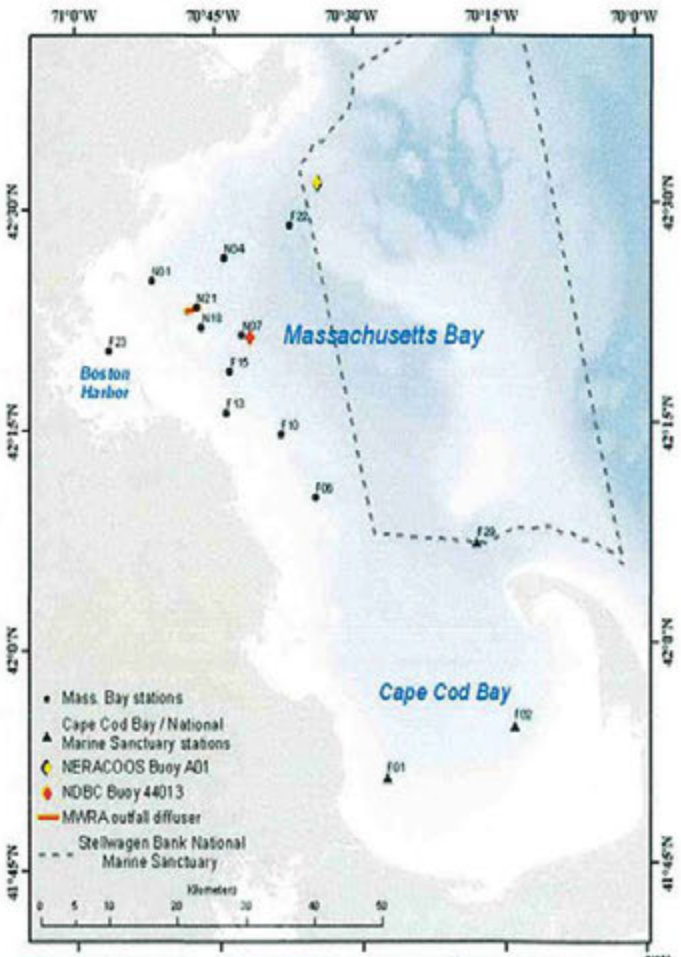

Figure 1. Location of MWRA's water quality monitoring stations

[2] Monitoring at the three stations in Cape Cod Bay shown in Figure 1 in 2017 to 2019 will be conducted under a separate cost-share agreement with the Provincetown Center for Coastal Studies, being presented to the Board at this meeting.

- Annual sampling will occur at 14 soft-bottom community monitoring stations, including 11 stations near the outfall (considered the "nearfield"), and three stations in reference areas, including the Stellwagen Bank National Marine Sanctuary. Sediment contaminant sampling will occur at these stations in 2017. Contaminant samples will be analyzed by MWRA's Department of Laboratory Services;
- Sediment profile imaging will occur annually at the 23 nearfield soft bottom stations seen in Figure 2;
- A video survey of rocky sea-floor environments in the vicinity of the outfall, including both active and inactive outfall riser heads, will occur in 2017;
- Sediment sampling at nine stations in Boston Harbor will occur annually in support of MWRA's Boston Harbor Monitoring;
- Sediment profile imaging will occur annually at 60 stations in Boston Harbor in support of MWRA's Boston Harbor monitoring;
- Annual monitoring of winter flounder will continue in Boston Harbor, in the vicinity of the outfall, and at two other reference locations for liver diseases linked to contaminant exposure (See Figure 3 next page). In 2018, flounder tissue samples will be collected for contaminant analysis by the Department of Laboratory Services;

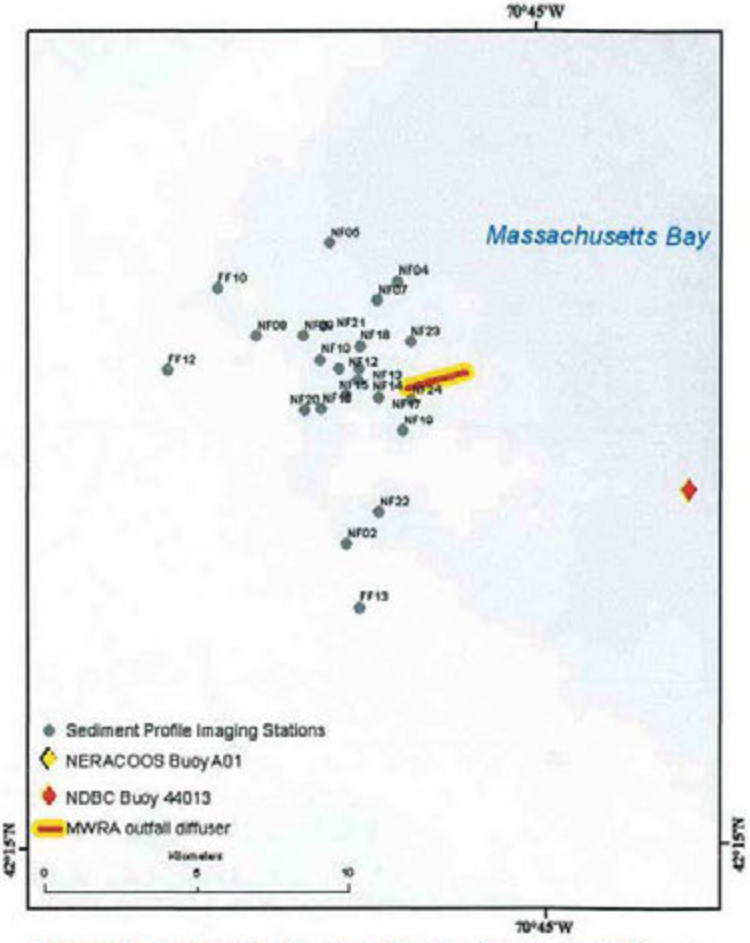

Figure 3. Location of sediment profile imaging stations. Sediment samples are collected at 11 of these.

- In 2018, samples of lobster will be collected in Boston Harbor, in the vicinity of the outfall, and in Cape Cod Bay for contaminant analysis by the Department of Laboratory Services; and
- In 2018, blue mussels will be collected from a clean location in Maine and deployed near the outfall and in reference sites in Boston Harbor. After 60 days exposure, mussel tissues from the source location and the deployments will be analyzed for contaminants by the Department of Laboratory Services.

Under both contracts, the selected consultants will analyze the samples, carry out data analyses and prepare interpretive reports, which must be submitted to regulators.

The unit price nature of the contacts, together with the Task Order allotments built into them, provide MWRA with substantial flexibility in the event a new discharge permit changing MWRA's monitoring requirements comes into effect during the next 3 field years.

Figure 4. Location of monitoring stations for flounder, lobster, and mussel monitoring.

Procurement Process

This is the tenth contract procurement for Harbor and Outfall Monitoring services since the project began in 1992. In the previous procurement in 2013, Battelle was the only proposer for the Water Column Monitoring contract (which it has conducted since the late 1990s), and a team led by Normandeau was selected over a competing proposal for the Benthic, Fish and Shellfish Monitoring contract (which Normandeau has conducted since 2011). Staff report that Battelle and Normandeau have been performing excellent work under the existing contracts (Contract OP-216A and Contract OP-216B).

MWRA issued a Request for Qualifications Statements/Proposals (RFQ/P) on June 15, 2016, which included the two separate contracts. Firms submitted independent proposals for each contract.

Upon release of the RFQ/P, MWRA staff directly contacted 16 different firms and academic institutions to notify them of the upcoming procurement. On August 19, 2016, three firms submitted proposals, one from Battelle on the Water Column Monitoring contract (OP-326A), and one each from Stantec Consulting Services, Inc. (Stantec) and Normandeau on the Benthic, Fish and Shellfish Monitoring contract (OP-326B).

After reviewing the proposals, the Selection Committee met to discuss, score, and rank each proposal with the following results:

Contract OP-326A, Water Column Monitoring

Battelle Memorial Institute **$2,302,775.39**

As in 2013, Battelle submitted the only proposal for this contract. Battelle's performance has been excellent during the previous seven contracts, and Battelle proposed the same project team and approach to the new contract. Battelle's team of scientists has played a major role in helping MWRA design and justify monitoring plan changes that led to the reductions in monitoring that were approved in 2004 and again in 2010. Proposed costs closely match staff projections, based on costs from Contract OP-216A escalated at 3% per year for three years. For some tasks, for example data management, proposed costs are less than current costs under Contract OP-216A.

The Selection Committee determined that Battelle's proposal was responsive and the project team was highly qualified to perform the services across all technical criteria at a reasonable cost.

Contract OP-326B, Benthic, Fish and Shellfish Monitoring,

Normandeau Associates, Inc.	**$1,305,851.42**
Stantec Consulting Services, Inc.	$1,388,649.36

Although Stantec has not previously been involved in MWRA's permit-required ambient monitoring, the firm has conducted numerous design and construction services contracts for MWRA, and the proposed project team was comprised of a number of scientists who formerly carried out the monitoring as part of consultant teams on previous MWRA monitoring contracts. Several of Stantec's proposed key team members helped MWRA design and justify monitoring plan changes that led to the reductions in monitoring approved in 2004 and again in 2010. Stantec's performance on prior MWRA contracts has been good to excellent, and the firm's and its team members' performance on previous environmental contracts, both with MWRA and for other clients, has been excellent. The Selection Committee determined that the proposal described a reasonable approach and capacity to conduct the work, and that the team proposed is well qualified.

Since 2011, Normandeau has been providing benthic, fish, and shellfish monitoring services similar to those in contract OP-326B. Normandeau's performance on MWRA contracts has been excellent. Normandeau and its proposed team members are very experienced with similar studies in the region and received uniformly excellent reviews from firms listed as references. The Selection Committee determined that the firm is highly qualified to perform the services across all technical criteria.

Stantec's proposed cost is somewhat less than staff estimates based on costs from contract OP-216B escalated 3% per year for 3 years. Normandeau's proposed cost is approximately 6% lower than Stantec's and is almost $10,000 less than under Contract OP-216B.

After reviewing both proposals, the Selection Committee selected Normandeau's proposal as the first-ranked. The firm received higher average scores than Stantec across all but one of the technical criteria, and at a lower cost. The Selection Committee is confident that Normandeau's project team can successfully complete the scope of services for this project, at the proposed cost, especially since they are providing similar services under Contract OP-216B.

BUDGET/FISCAL IMPACT:

Costs for the proposed contracts reflect the savings associated with MWRA's revised Ambient Monitoring Plan, which has been in effect since January 2011. The FY17 budget for the OP-326 contracts was projected based on January-June 2014 startup spending on the OP-216 contracts. Expected FY17 costs under these contracts (See Table 1) will be approximately $30,000 less than budgeted.

Table 1. FY17 Budget Impact (rounded to nearest thousand)				
Contract	Contractor	FY17 Budget	Proposed	Difference
OP-326A	Battelle	$287,000	$269,000	($18,000)
OP-326B	Normandeau	$127,000	$115,000	($12,000)

Adequate funding will be included in the Proposed FY18-FY21 CEBs to cover anticipated costs in later years.

MBE/WBE PARTICIPATION:

Although there were no MBE or WBE participation requirements established for this project, Battelle committed to 5.1% WBE participation for Contract OP-326A and Normandeau committed to 15.9% WBE participation for Contract OP-326B.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: November 16, 2016
SUBJECT: Cooperative Research Project with Center for Coastal Studies in Provincetown to Conduct Water Quality Monitoring in Cape Cod Bay
Contract S556

COMMITTEE: Wastewater Policy & Oversight

___ INFORMATION
_X_ VOTE

Michele S. Gillen
Director of Administration

Betsy Reilley, Director, Environmental Quality
David Taylor, Project Manager, Harbor and Outfall Monitoring
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the award of Contract S556, a sole-source contract with the Center for Coastal Studies in Provincetown for a cooperative research project to conduct permit-required water quality monitoring in Cape Cod Bay, and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the amount of $383,367 for a contract term of three years from the Notice to Proceed.

DISCUSSION:

MWRA, as part of its National Pollutant Discharge Elimination System (NPDES) permit for Deer Island, is required to monitor water quality at 11 locations in Massachusetts Bay plus three locations in Cape Cod Bay. The Harbor and Outfall Monitoring contracts, which are the subject of a separate Staff Summary for the November 2016 Board Meeting, address water quality monitoring at the 11 MA Bay locations. This staff summary addresses a cost-share cooperative research project with the Center for Coastal Studies in Provincetown (the Center) to monitor the three Cape Cod Bay locations (see map on following page). MWRA's permit-attached Ambient Monitoring Plan sets a goal for the three Cape Cod Bay locations to be sampled within 48 hours of the Massachusetts Bay locations. Under the previous and existing contracts with MWRA, which have run concurrent with the Harbor and Outfall Monitoring contract, the Center has completed six years of water quality monitoring at these locations. The Center's performance to date has been excellent.

This cooperative research project provides participation in MWRA's outfall monitoring by a research organization that has been monitoring Cape Cod Bay for more than 30 years. The

Center is widely viewed as the environmental custodians of Cape Cod Bay and regularly exchanges data with MWRA. The Center's location allows it to cost-effectively monitor MWRA's three locations. The average costs per Cape Cod Bay survey ($14,200) will be less than one-half the average per MA Bay survey ($29,500). As part of this cooperative research project, the Center will provide MWRA with whale-sighting and water quality data collected at the other Cape Cod Bay locations it monitors.

This contract scope is identical to the current cooperative research contract with the Center for Coastal Studies (OP-222). The total costs to the MWRA will be $383,367, ($53,649 more than the current contract). The Center will provide the equivalent of 40% of the $383,367 in match (up to $85,900 in private donations and approximately $67,500 in in-kind match). The average cost per year to MWRA will be $127,789, or $17,883 (16%) greater than the $109,906 per year during the current contract.

The increased costs in this contract are related to indirect costs, boat operation costs, and annual escalation costs. $8,216 of the $17,883 per year increase is an increase in indirect costs as recently audited by the federal government. Boat operation costs, which staff have shown to be competitive, account for $4,500 of the cost per year increase. The boat to be used by the Center, and purchased through a fundraising campaign independent of MWRA, is larger than the boat used in the current contract, and that is no longer in operation.

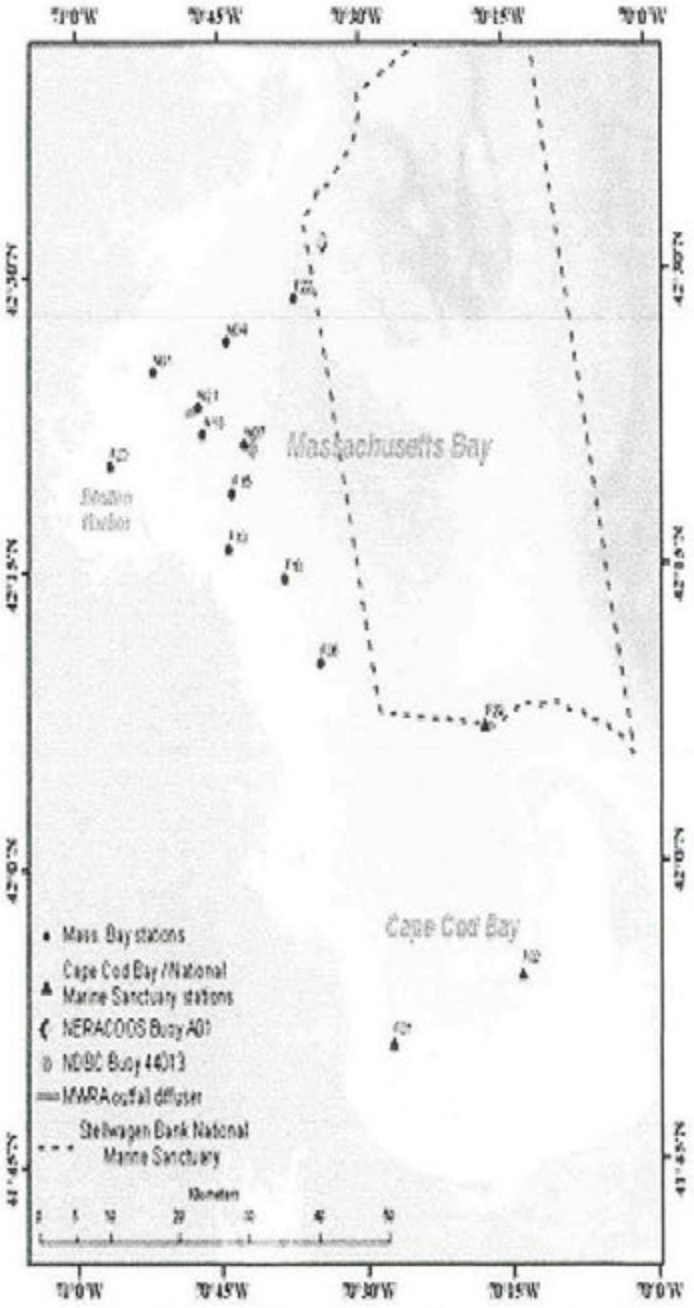

Fig. 1. Location of MWRA's water quality stations in Massachusetts and Cape Cod Bays. The Center for Coastal Studies will monitor the three southern locations

Scope

The contract includes two main tasks:

- The Center for Coastal Studies will conduct 27 surveys of water quality in Cape Cod Bay between February 4, 2017 and February 3, 2020. During each survey, the Center will measure hydrographic profiles, water chemistry at near-surface and near-bottom depths, phytoplankton at near-surface depths, and zooplankton using net tows, at the three locations. These types of measurements are typically used to track the health of coastal systems like Cape Cod Bay; and

- The Center for Coastal Studies will provide written logs of the surveys to MWRA within ten days of completion of each survey. Each year, all data from the first three surveys will be provided to MWRA by June 30. The data from the next three surveys will be provided by August 31 and from the final three surveys by February 3. The Center for Coastal Studies will provide an oral presentation of the monitoring results at MWRA's technical workshops in spring 2017, 2018 and 2019.

Procurement Process

Staff recommend that MWRA enter into a sole-source contract with Provincetown Center for Coastal Studies to perform this monitoring. The Center for Coastal Studies is the only organization, government or non-government, conducting water quality monitoring in Cape Cod Bay. The Center staff are deeply familiar with the Bay and have shown they are capable of conducting the monitoring within 48 hours of MWRA's monitoring nearer the outfall, a permit-requirement. MWRA will provide $125,524 for the first year of monitoring, $127,770 for the second, and $130,073 for the third. MWRA has strict technical requirements for this monitoring and the Center for Coastal Studies has successfully demonstrated its ability to meet these requirements.

BUDGET/FISCAL IMPACT:

The total cost of this contract to MWRA will be $383,367, to be paid from the FY17, FY18, FY19, and FY20 Current Expense Budgets.

MBE/WBE PARTICIPATION:

There were no MBE or WBE participation requirements established for this sole-source contract.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: November 16, 2016
SUBJECT: Supply and Delivery of Ferrous Chloride to the Deer Island Treatment Plant
Kemira Water Solutions, Inc.
Bid WRA-4291

COMMITTEE: Wastewater Policy & Oversight

____ INFORMATION
_X_ VOTE

Michele S. Gillen
Director of Administration

David Duest, Director, DIWWTP
Carolyn Francisco Murphy, Director of Procurement
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the award of Purchase Order Contract WRA-4291, a one-year contract for the supply and delivery of ferrous chloride to the Deer Island Treatment Plant, to the lowest responsive bidder, Kemira Water Solutions, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said purchase order contract in an amount not to exceed $1,000,000 for a period of one year, from January 1, 2017 through December 31, 2017.

DISCUSSION:

The operational performance of Deer Island's digesters has been hampered in the past by the build-up of struvite in the overflow piping, which results in constricted flow (as shown in the picture to the right). Struvite, a by-product of anaerobic sludge digestion, is a crystallized compound that coats the interior surfaces of pipelines and valves. To address this problem, staff have implemented aggressive operational and maintenance initiatives including chemical treatment and on-going specialized cleaning maintenance. It is preferable to prevent or reduce struvite from forming in the first place and reduce the need for specialized cleaning. Operations staff have been using ferrous chloride to reduce struvite formation in the digested sludge since 1998.

Currently, Deer Island uses between four and six truckloads of ferrous chloride per week as part of its ongoing struvite prevention program and staff estimate that approximately 2,000,000 pounds of ferrous chloride will be needed during the one-year contract period. These estimates were used for bidding purposes only and for comparison of bids. MWRA will only pay for product received.

Procurement Process

Bid WRA-4291 was advertised in the following publications: Boston Herald, Central Register, Goods and Services Bulletin, Dodge Reports, El Mundo, and Banner Publications. In addition, bids were made available for public downloading on MWRA's e-procurement system (Event 2635) and five potential bidders were solicited through the e-Portal.

On October 19, 2016, Event 2635 closed, with the following results:

Vendor	Unit Bid Price		Total Bid
Kemira Water Solutions, Inc.	**$0.5000 per dry pound X 2,000,000**	**=**	**$1,000,000**
Borden & Remington	$0.8356 per dry pound X 2,000,000	=	$1,671,200

Bid WRA-4291 was structured as a one-year contract similar to the existing contract, also with Kemira Water Solutions, Inc., which expires on December 31, 2016. Under the current contract, MWRA is paying a fixed unit price of $0.47 per dry pound of iron for an annual cost of $940,000. Compared to the existing contract, the cost has increased by 6% or $0.03 per dry pound of iron. The not to exceed amount of the contract is not a firm commitment of cost or a guarantee of purchase to the vendor; MWRA will only pay for product received.

The Purchasing Unit contacted Kemira Water Solutions, Inc. and the firm stated that freight and logistics costs associated with railcars and drivers attributed to this year's price increase. Purchasing staff contacted the other vendors that were solicited to inquire as to why the firms elected not to bid. Gulbrandsen Technologies, Inc., PVS Chemicals, and Brenntag, Northeast America all stated that they lacked the product supply and distribution network to be competitive with Kemira at this time. It should be noted, that the product quoted by Borden & Remington Corporation is supplied by PVS Chemicals. Kemira Water Solutions, Inc. and Borden & Remington were the only two bidders for the existing one-year contract.

Staff have reviewed Kemira Water Solutions, Inc's bid and have determined that it meets all of the requirements of the bid specifications. Therefore, staff recommend the award of this one-year purchase order contract to Kemira Water Solutions, Inc. as the lowest responsive bidder.

BUDGET/FISCAL IMPACT:

There are sufficient funds available for the first portion of this contract in the approved FY17 Current Expense Budget. Appropriate funding will be included in the Proposed FY18 Current Expense Budget request for the remaining term of the contract.

MBE/WBE PARTICIPATION:

Kemira Water Solutions, Inc. is not a certified Minority- or Women-owned business.

MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

Telephone: (617) 242-6000
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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, November 16, 2016

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

Time: Immediately following Wastewater Comm.

AGENDA

A. Information

1. Reservoir and Drought Status Update
2. Update on Lead and Copper Compliance – Fall 2016

B. Approvals

1. Emergency Water Supply Agreement with Cherry Valley and Rochdale Water District

C. Contract Awards

1. Commonwealth Avenue Pump Station Improvements – Design, Engineering Services During Construction and Resident Engineering/Inspection Services: Black & Veatch Corporation Contract 7523
2. Northern Intermediate High Sections 110 and 112 – Stoneham and Wakefield: Albanese D&S, Inc., Contract 7478
3. Section 80 Repair - Weston: P. Caliacco Corporation, Contract 7532
4. Chicopee Valley Aqueduct Intake Traveling Screen Replacement: W. M. Schultz Construction, Inc., Contract 7488

D. Contract Amendments/Change Orders

1. Wachusett Aqueduct Pumping Station Design, Construction Administration and Resident Inspection Services: Stantec Consulting Services, Inc., Contract 7156, Amendment 3 (materials to follow)

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the
Water Policy and Oversight Committee

October 12, 2016

A meeting of the Water Policy and Oversight Committee was held on October 12, 2016 at the Authority headquarters in Charlestown. Chairman Blackmon presided. Present from the Board were Ms. Wolowicz and Messrs. Carroll, Foti, Pappastergion, Peña, Walsh and Vitale; Messrs. Cotter and Flanagan joined the meeting in progress. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Steve Estes-Smargiassi, Pam Heidell, Cori Barrett, John Vetere and Bonnie Hale. The meeting was called to order at 12:00 p.m.

Information

Metropolitan Tunnel Redundancy (placeholder for possible discussion)

Discussion of this item was referred to the full Board meeting in the afternoon.

Reservoir and Drought Status Update

Staff gave a presentation on the ongoing drought and its impacts and answered questions regarding the status of communities considering joining the MWRA system.

(Messrs. Cotter and Flanagan joined the meeting.)

Approvals

*Emergency Water Supply Agreement with the Town of Burlington

The Committee recommended approval of a six-month emergency water supply agreement (ref. agenda item B.1).

Contract Amendments/Change Orders

*Watertown Section Rehabilitation, Waltham and Watertown: J. D'Amico, Inc., Contract 7222, Change Order 6

There was brief discussion, and the Committee recommended approval of Change Order 6 (ref. agenda item C.1).

* Approved as recommended at October 12, 2016 Board of Directors meeting.

*Quabbin Power & Security Improvement: Ewing Electrical Co., Inc. Contract 7338, Change Order 2

The Committee recommended approval of Change Order 2 (ref. agenda item C.2).

The meeting adjourned at 12:20 p.m.

* Approved as recommended at October 12, 2016 Board of Directors meeting.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: November 16, 2016
SUBJECT: Reservoir and Drought Status Update

COMMITTEE: Water Policy & Oversight

X INFORMATION
____ VOTE

Carolyn Fiore, Deputy Chief Operating Officer
Daniel Nvule, Senior Program Manager
David Coppes, Director of Waterworks
Stephen Estes-Smargiassi, Director, Planning
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

During this November, as a result of sustained dry conditions, Quabbin is projected to drop below 80%, the threshold for Below Normal status in MWRA's DEP-approved drought plan. Quabbin last crossed into this status around Christmas Day 2001 and fell all the way to 516.48 ft (75.5% full) on Veteran's Day 2002. By Memorial Day the following year, Quabbin had recovered and has since been in Normal Operations. Despite the anticipated status drop, even if the drought were to continue for several years, adequate supply exists in Quabbin and Wachusett Reservoirs to meet the needs of MWRA fully and partially supplied water communities and also, if needed, to augment the supplies of some of the adjacent stressed communities. While no water use restrictions are required for MWRA fully supplied customers, MWRA is urging consumers to use water wisely and is continuing to provide conservation information.

RECOMMENDATION:

For information only.

DISCUSSION:

MWRA Supply Outlook

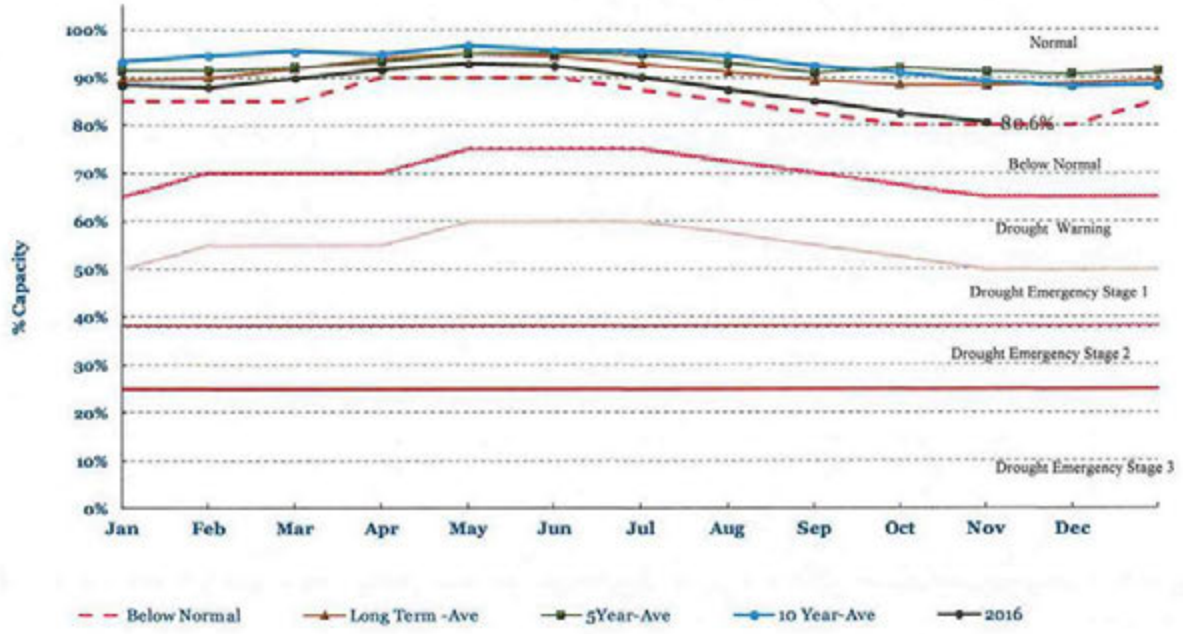
With the continued below normal annual precipitation and very dry soil conditions, particularly in the watershed of Quabbin Reservoir, the MWRA system is projected to move into Below Normal status within the month of November. Below Normal is the 2nd highest of six drought plan statuses in MWRA's drought plan, as shown on Figure 1 on the next page.

In response to the shift, MWRA will undertake a number of actions to increase our customers' awareness about the drought, remind them of the importance of water conservation, and suggest voluntary actions they can take to improve their water use efficiency. When the Quabbin reaches Below Normal Status, staff will contact each communities' chief elected official and water superintendent reminding them that our website has many tips on how to save water indoors and

outdoors to share with their customers, and that MWRA has conservation brochures, as well as low-flow replacement aerators for kitchen and bathroom faucets, and low-flow shower heads, available to our member communities (and individual customers) free of charge.

Over the next few weeks, MWRA will be sending out Public Service Announcements and utilizing our website and social media to ask residents and businesses in our service area to save water wherever they can. The target for Below Normal in the Drought Plan is to maintain use at the previous year's level without issuing mandatory use restrictions.

Figure 1 : Quabbin Reservoir Volume
First of the Month



Recent rainfall has increased the Connecticut River flows thus triggering lowered Swift River releases which when combined with lower demands has eased the rate at which storage volumes are dropping. However, with the very dry soil conditions, tributary stream flows only increase for a short period after a rainfall event, then essentially dry up again. Modeling of the reservoir system indicates the level will likely stay below normal for at least three months if yield conditions remain below average (See Table 1).

Table 1 – Quabbin Reservoir Modeled Drought Status
Looking Forward from November 1, 2016

	1-Month	3-Months	6-Months	12-Months
Median Yield	Normal	Below Normal	Normal	Normal
Dry (75th Percentile)	Normal	Below Normal	Below Normal	Normal
Driest (of Record)	Below Normal	Below Normal	Below Normal	Below Normal

Staff have been running the drought simulations each month, and will continue to do so until conditions no longer warrant.

Change in Community Status since Last Meeting

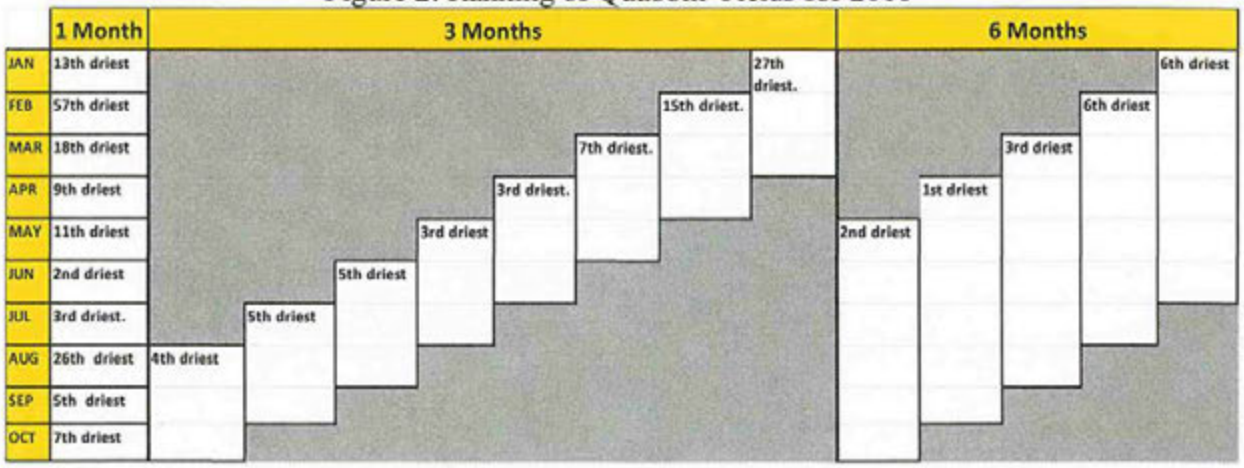
Ashland has been occasionally taking water through Southborough since September. Worcester took approximately 15 million gallons per day (mgd) starting September 14th and ending on October 23rd, 2016. They are expected to resume taking water shortly unless precipitation conditions change dramatically. Cambridge's reservoir capacity stands at about 25 percent. From October 11th to the 27th Cambridge relied on the MWRA for about 90% of its demand, returning to their own sources with the October precipitation. Cambridge again began taking water November 7th, and depending on conditions, it is likely that they will take additional water this fall. Burlington purchased a total of approximately 8 million gallons of water through Lexington from October 24th to November 4th. Staff continue to work with Lynn, whose reservoirs are about 39 percent full. Modifications to piping will allow MWRA to discharge water into Lynn's supply reservoir so that they can continue to use their own treatment plant and reduce the potential for changes in water quality within their system. These changes were made during the first week in November. They will begin taking water shortly if drought conditions persist.

Use by the rest of the partially served communities is tapering off with this year's October use (excluding Worcester and Cambridge) standing at 1.6% lower than October 2015. Demand by fully supplied communities has dropped off as the summer ended, and overall year to date demand is just below where it was last year.

Dry Trend Has Continued

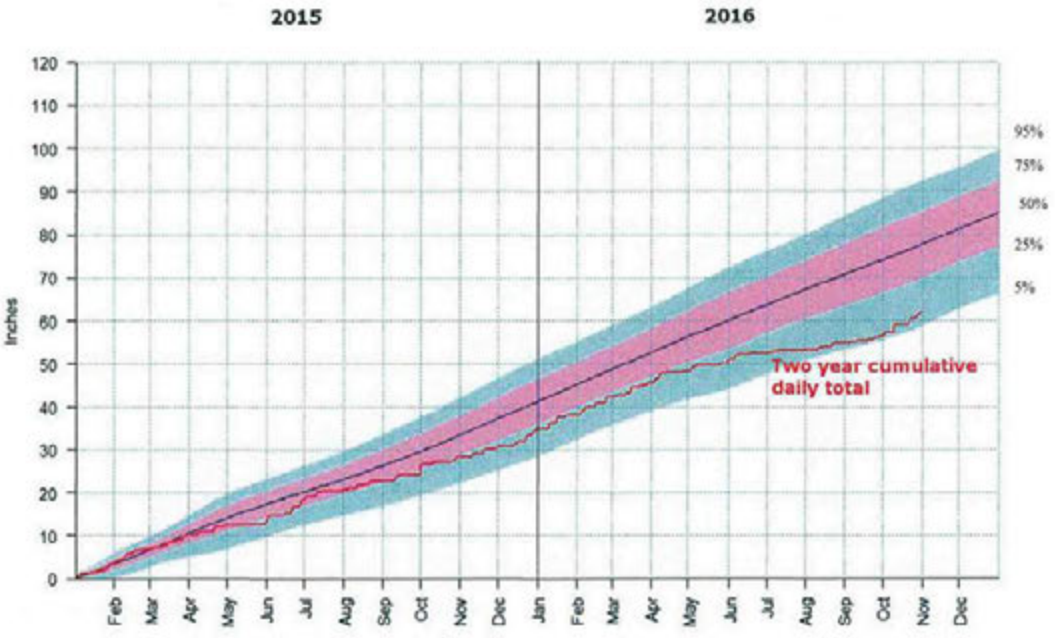
The 6 month period (May to October) had the second lowest Quabbin yields on record.

Figure 2: Ranking of Quabbin Yields for 2016



In terms of rainfall in the service area, it has continued to be dry. Figure 3 shows actual rainfall at Logan Airport as of November 1st, 2016 compared to the long term two-year average beginning in January 2015. As seen on Figure 3, while recent rainfall has helped to contain the growth of the deficit, there is still around a 16 inch deficit in precipitation since January 2015.

Figure 3: Logan Airport Precipitation



Next Steps

MWRA staff will continue outreach and education about the importance of conservation, and work with neighboring communities which are having supply difficulties. Staff will also continue to participate in the state Drought Management Task Force, including its meetings on November 8th and December 7th; will coordinate with other state agencies to periodically assess the status of the drought and the ongoing needs of the partial users and emergency connections; and will report to the Board of Directors if conditions worsen.

BUDGET/FISCAL IMPACT:

Worcester and Cambridge will be billed at the prevailing rate for emergency water used. Any non-member emergency users will pay either the prevailing rate directly to MWRA or will be billed by the community that they are interconnected to, plus the applicable surcharge. Additional use by all other MWRA fully or partially supplied communities will be through the normal assessment process based on their proportionate share of water usage.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: November 16, 2016
SUBJECT: Update on Lead and Copper Rule Compliance – Fall 2016

COMMITTEE: Water Policy & Oversight

X INFORMATION
VOTE

Joshua Das, Project Manager, Public Health
Carl Leone, Senior Program Manager
Stephen Estes-Smargiassi, Director, Planning
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

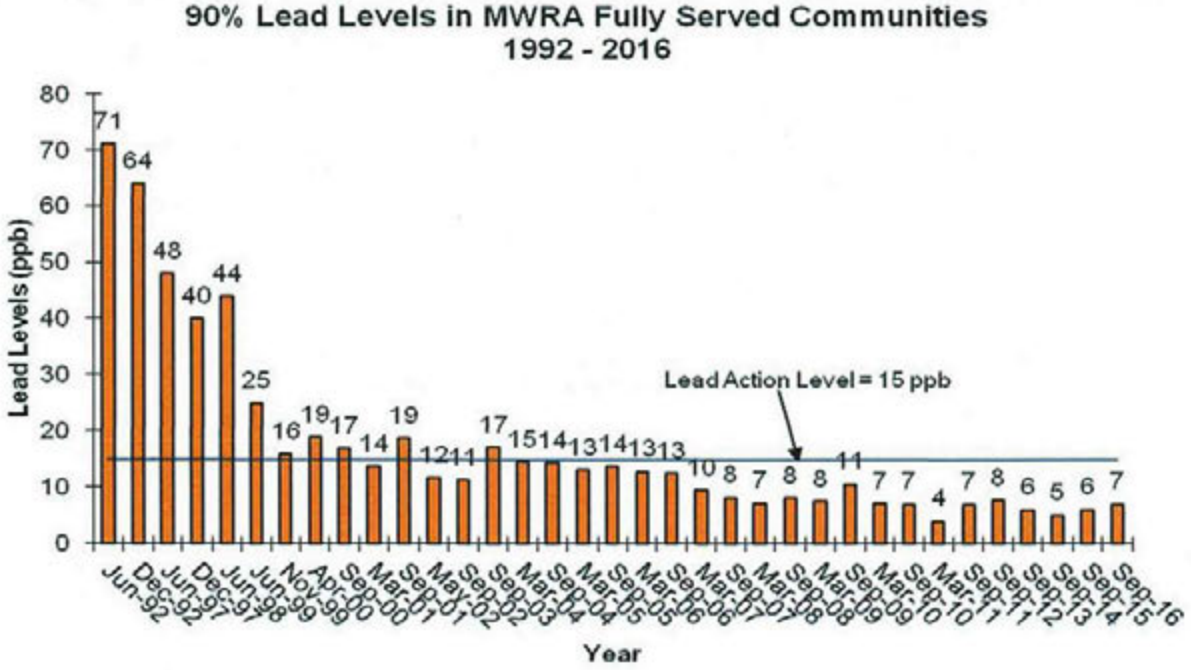
MWRA system-wide lead levels in the September 2016 sampling round were below the Action Level of 15 parts per billion (ppb) again for the 21st consecutive sampling round. MWRA system-wide 90th percentile value for calendar year 2015 is 6.9 ppb. Two communities were individually above the Lead Action Level. MWRA continues to meet the copper standard.

RECOMMENDATION:

For information only.

DISCUSSION:

MWRA and its communities conducted the calendar year 2016 sampling round beginning in September 2016. The preliminary 90th percentile value for the system as a whole in September was 6.9 ppb, which is below the Lead Action Level of 15 ppb.



Under Environmental Protection Agency's (EPA) Lead and Copper Rule (LCR), each year MWRA and every fully-supplied community must collect and test tap water in a sample of homes[1] that are likely to have high lead levels. These are usually homes with lead services or lead solder. EPA requires that nine out of ten of the sampled homes must have lead levels at or below the Action Level of 15 ppb.

Starting in 2012, MWRA's fully-supplied communities are now only required to sample for lead and copper once per year, as long as their 90th percentile results are below the Action Level. A community that exceeds can return to once-per-year sampling after it has two consecutive sampling rounds under the Action Level. Two communities, Malden and Melrose, were above the Action Level in September 2015. Both were below the Action Level in the March 2016 sampling round, but Malden was once again above in this September 2016 sampling round, and will need to sample twice in 2017. Melrose was under for both rounds, and will be back to one sampling round in 2017.

One other community, Quincy, was above the Action Level in the September 2016 sampling round, and will need to sample twice in 2017. Both communities, Melrose and Quincy, have been notified and will be required to meet education requirements, including mailing lead education brochures, as well as meet lead service line replacement requirements set by the Department of Environmental Protection (DEP). MWRA provides the education brochures, and staff have offered assistance in working with DEP on the education requirements and service line documentation.

Under the LCR, each community is also required to collect samples from two schools or daycare facilities. MWRA staff immediately contact any community that had a school above the Action Level. Four communities had one school test above the Action Level as part of the LCR testing, and each one was notified. These results will be included in the school testing program as well.

MWRA has already formally transmitted these results to DEP. The results were also transmitted to the communities, and, through them, to every individual homeowner or school that collected a sample for the program. MWRA staff has directly contacted communities with schools above the Action Level or any individual homeowners with very high or unusual results.

Update on School Testing Program

The MWRA has also been working with MWRA communities on testing school fixtures used for drinking or cooking. DEP created a technical assistant and laboratory analysis program to test schools throughout the state, and MWRA offered lab services in parallel of the DEP program. From April through the last week of October, the MWRA Laboratory has performed 11,314 tests on samples from 200 schools in 27 different MWRA communities. Approximately 5.3% of all lead samples were above the Action Level, similar to the results of LCR sampling discussed above. 57 of the 200 schools had at least one sample test over the Action Level. All of these communities and schools have been contacted and technical assistance materials provided. In November, DEP is expected to post on-line all of the results from all schools across the state that have been tested.

Update on Lead Service Line Replacement Loan Program

In March, the Board approved an enhancement to the Local Water System Assistance Program to

[1] In most communities, 15 homes are sampled; the exceptions are Boston, which collects 25 samples, and Lynnfield and Nahant, which collect 10 samples. A total of at least 450 samples are collected.

provide up to $100 million in 10-year zero-interest loans to communities solely for efforts to fully replace lead service lines, and in May approved the Program Guidelines for the Lead Loan Program (LLP). Each community can develop its own program, tailored to their local circumstances.

Staff anticipate that there will be different outreach and technical assistance needs among communities based on the initial quality of the inventories, the total number of lead services or goosenecks, how a replacement program can be integrated into their existing street and pipeline rehabilitation programs, and what type if any customer incentive program they develop.

As of the end of October, MWRA has received two applications: one from Newton ($4.0 million) and one from Quincy ($1.5 million) for the second quarter of 2016 distribution cycle. The loan funds will be distributed in early December. Some additional communities have expressed interest in the program for the second half of FY17 or FY18 applications. Staff anticipated applications under the Lead Loan Program were likely to begin with smaller distributions 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.

Update on MWRA Coordination with the Department of Public Health on Testing Homes

The Massachusetts Department of Public Health (MDPH) has now moved ahead with its partnership with MWRA to sample for lead in the tap water at homes where a child has an elevated lead level in their blood, and identify if there is a lead service line. MWRA staff assisted in training for the MDPH field staff that visit homes, and coordinated how to perform the sampling. Sample bottles, appropriate chain of custody forms, as well as boxes with return postage were also provided to MDPH. As of the last week of October, samples were beginning to arrive at the MWRA Laboratory. MWRA will report the results back to MDPH which will then provide results to the residents, preserving the required confidentiality.

BUDGET/FISCAL IMPACT:

MWRA began modern effective corrosion control treatment to reduce lead and copper levels at the tap in 1997. MWRA's corrosion control treatment involves raising the pH and alkalinity to the water to provide a stable, non-corrosive product, reducing the potential for both lead and copper to leach from customer's home plumbing. The annual average cost for corrosion control is approximately $3.5 million ($3.2 million in soda ash costs, and $0.3 million in carbon dioxide costs.)

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: November 16, 2016
SUBJECT: Emergency Water Supply Agreement with Cherry Valley and Rochdale Water District

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COMMITTEE: Water Policy & Oversight

___ INFORMATION
X VOTE

Carolyn M. Fiore, Deputy Chief Operating Officer
Pamela Heidell, Policy & Planning Manager
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to execute a six-month Emergency Water Supply Agreement with the Cherry Valley and Rochdale Water District, substantially in the form attached hereto.

DISCUSSION:

The Cherry Valley Rochdale Water District (CVRWD) notified MWRA on October 6 that a declaration of a state of water supply emergency from the MassDEP was imminent. Subsequently, CVRWD submitted a request to MWRA for emergency withdrawal under MWRA's Operating Policy OP#.05, Emergency Water Supply Withdrawals.

CVRWD serves approximately 1,250 service connections in Leicester and Oxford with an average water demand of 0.26 mgd and an historical maximum day demand of 0.58. Henshaw Pond is the primary drinking water source. The water level of Henshaw Pond is now extremely low and CVRWD has indicated there is uncertainty regarding the rate of recharge to a full pond condition.

CVRWD has an existing interconnection with the City of Worcester, an MWRA water service area community that takes MWRA water only during emergencies, in this instance, drought. Worcester's interconnection to MWRA is via a pump station connected to Shaft 3 of the Quabbin Aqueduct. Through these interconnections, MWRA may indirectly supply the CVRWD with water.

OP#.05 allows MWRA's Chief Operating Officer to approve an emergency use of MWRA by a non-MWRA water system for a period not to exceed thirty days. Therefore, in response to CVRWD's initial letter to MWRA, MWRA approved a 30-day emergency withdrawal contingent upon an Emergency Declaration from DEP. The DEP Emergency Declaration was issued on October 7, 2016 and remains in effect for six months. Withdrawals from MWRA began October 7. The MWRA's 6-month emergency supply withdrawal period encompasses the

short term 30-day approval and coincides with the 6-month Emergency Declaration by DEP.

This is CVRWD's first Emergency Water Supply Withdrawal Request to MWRA. Pursuant to OP#.05 and the Enabling Act, six-month emergency water supply periods require the approval of the Board of Directors.

A premium charge of 10% of the prevailing rate will be assessed for all water provided under the emergency, pursuant to OP#05. The District did request relief from MWRA's 10% surcharge assessment; however, OP#.05 specifically states the charges outlined in the OP#.05 will not be waived.

Emergency Water Supply Approval Criteria and Requirements

OP#.05 sets forth emergency withdrawal criteria and requirements. Compliance with key criteria/requirements associated with CVRWD's request is addressed below:

- *There must be no negative impact on MWRA's system and member communities.* CVRWD's withdrawal would have no negative impact on the MWRA system. Water would be supplied via Worcester's pump station at Shaft 3 of the Quabbin Aqueduct. The connection is for raw water and is ample to meet anticipated demand.

- *DEP must declare that an emergency exists.* DEP issued a six-month Emergency Declaration on October 7, 2016, to remain in effect for six months of the effective date of the Order.

- *A long-term plan to remedy supply deficiencies must be developed.* Drought conditions precipitated CVRWD's request to MWRA, rather than an existing chronic supply deficiency. At the same time, CVRWD is pursuing the construction of a permanent interconnection with the City of Worcester to resolve water quality and water supply needs, since CRVWD is under an Administrative Consent Order with DEP as a result of water quality issues. CVRWD, Worcester, and DEP have met on occasion to discuss the possibility of CVRWD becoming a full-time water customer of the City, and CVRWD has informed MWRA that a proposed Water Agreement between CVRWD and Worcester will soon be presented to CVRWD's Board of Water Commissioners and the Worcester City Council. With a permanent connection and under typical circumstances, CVRWD would purchase water from the Worcester Water System, which has its own source waters in the Nashua and Blackstone River Basins.

- *The applicant community does not use MWRA water supply as a chronic emergency back-up supply without equitable contribution for the fair asset value of the MWRA waterworks system.* This is the first 6-month emergency supply withdrawal period for CVRWD. Since the first withdrawal period does not represent chronic use of MWRA as a back-up water supply, there is no fair asset value contribution associated with it. Should CVRWD desire emergency withdrawals from MWRA beyond the six month period indicated in the Agreement, that would constitute Period 2. Period 2 and beyond require annual payments associated with asset value contribution.

- *The Community must submit a detailed description of water conservation and water accountability programs undertaken.* CVRWD has instituted a number of water conservation programs:

  - Demand Management Plan/Ordinance. CVRWD has a Demand Management Ordinance with increasing stringent water use restrictions based on water levels in the Henshaw Pond.
  - Outdoor water use restrictions: At the current time, there is a total ban on outdoor water use.
  - Leak detection: CVRWD closely monitors water use trends, and employs outside contractors to conduct leak detection when anomalies in water use trends occur.
  - Metering. CVRWD has a remote-read metering system, and bills its customers monthly.
  - Public education

Contents of Emergency Water Supply Agreement

Pursuant to the Agreement, all withdrawals must be metered. The proposed emergency water supply agreement will be for the period from October 7, 2016 to April 6, 2017, coinciding with the time period of DEP's Declaration. (CVRWD began withdrawals on or about October 7, under the short-term approvals provisions of OP#.05). The Agreement also requires CVRWD to adhere to all conditions and requirements contained in the DEP Declaration of Water Supply Emergency. The Agreement reflects MWRA's charges for emergency withdrawals, including a 10% premium charge added to the prevailing rate.

BUDGET/FISCAL IMPACT:

Pursuant to OP #.05, water taken for the first six-month emergency withdrawal period is charged at the prevailing rate plus a 10% premium. MWRA will review monthly use information to determine and assess the surcharge amounts. The volume of emergency withdrawals and therefore the amount of revenue MWRA will receive cannot be projected at this time.

ATTACHMENTS:

Draft CVRWD Emergency Water Supply Agreement
DEP Emergency Declaration

EMERGENCY WATER SUPPLY AGREEMENT
BETWEEN
THE MASSACHUSETTS WATER RESOURCES AUTHORITY
AND
THE CHERRY VALLEY AND ROCHDALE WATER DISTRICT

Parties.

This Emergency Water Supply Agreement ("Agreement") is entered into by and between the Massachusetts Water Resources Authority ("MWRA"), and the Cherry Valley and Rochdale Water District ("CVRWD") hereinafter jointly referred to as the "Parties." This Agreement documents the agreement and understanding of the Parties regarding the arrangement whereby MWRA will supply water to the Cherry Valley and Rochdale Water District through an interconnection that CVRWD has with Worcester, an MWRA served water community and whereby CVRWD will purchase a portion of its water supply from the MWRA through Worcester on an as-needed, emergency basis for a period not exceeding six months, as indicated in paragraph 10 hereof.

Recitals.

R.1. The MWRA was created by the Massachusetts legislature in December, 1984 to operate, regulate, finance, and modernize the waterworks and sewerage systems servicing the greater metropolitan Boston area. Operating pursuant to the terms of Section 8(d) of its Enabling Act, chapter 372 of the Acts of 1984 (the "Act"), and pursuant to the Policies and Procedures for Emergency Water Supply Connections of its Board of Directors, the MWRA may enter into arrangements to provide emergency supplies of water to any local body of the Commonwealth, provided certain conditions are met.

R.2. CVRWD is a duly constituted water district in the Commonwealth of Massachusetts ("Commonwealth").

R.3. Worcester is supplied raw water by the MWRA on an emergency basis and CVRWD has an emergency interconnection via Worcester to the MWRA water supply system.

R.4. CVRWD's drinking water sources include both wells in the Grindstone well and Henshaw Pond. Drought conditions have reduced reservoir storage, and CVRWD's ability to meet water demand with its local sources alone.

R.5. On November 4, 2016, CVRWD, in a letter to MWRA, notified MWRA that due to lower than normal precipitation and the declining water elevation of Henshaw Pond, the District's sole source of supply, and the uncertainty of the rate of recharge to a full pond condition, an emergency connection for a six-month period was desired.

R.6 On October 7, 2016 the MA Department of Environmental Protection (MassDEP) issued a Declaration of Water Supply Emergency to CVRWD, to remain in effect for six months. The Declaration of Water Supply Emergency is included as Attachment A to this Agreement.

R.7 On October 11, 2006, the MWRA's Board of Directors adopted a revised Policy for Emergency Water Supply Withdrawals, OP#.05 (the "Policy") which includes criteria and a process for approving requests for emergency withdrawals.

R.9. CVRWD has applied to the MWRA to use emergency interconnections to the MWRA system through Worcester to supplement CVRWD's local water supply sources on an as-needed basis. CVRWD uses approximately 260,000 gallons per day.

R.10. The MWRA has determined that it can supply CVRWD with an emergency water supply for a period not exceeding six months under this Agreement without jeopardizing its ability to supply its member communities and without exceeding the safe yield of its water supply system.

R.11. CVRWD must comply with all applicable legal and regulatory requirements.

R.12. Pursuant to the MWRA Policy, this Agreement is considered an Emergency Water Supply Agreement Period One.

AGREEMENT

NOW, THEREFORE, in consideration of the mutual promises contained herein and for other good and valuable consideration, the MWRA and CVRWD as follows:

1. The proposed emergency water supply agreement will extend from October 7, 2016 to April 6, 2017 in accordance with the terms of this Agreement, subject to termination in accordance with numbered paragraph 11 below.

2. CVRWD may take MWRA water from its emergency interconnection with Worcester.

3. The transfer of water from the MWRA through Worcester to CVRWD shall not extend beyond a period of six months, unless CVRWD submits an application for an additional emergency water supply withdrawal and the MWRA's Board of Directors and Advisory Board approve the additional emergency water supply withdrawal. Any withdrawals beyond the DEP Emergency Declaration six-month period will also require an extension of DEP's Water Supply Emergency Declaration. In considering withdrawals beyond six months, the MWRA will consider CVRWD's efforts to reduce consumption, to implement its long range plans and comply with DEP orders, and to implement a water conservation program.

4. During the six month term of this Agreement, CVRWD shall institute and continue all practicable conservation measures including, but not limited to, a water conservation public education program; 100% metering; leak detection surveys and rehabilitation programs; conservation pricing for water services; and a local ordinance governing

outdoor water use with appropriate enforcement measures such as fines and water shut-off for non-compliance.

5. CVRWD shall submit to MWRA a monthly report on water use, and the status of the emergency.

6. CVRWD shall comply with all the conditions of any DEP Declaration of Water Supply Emergency.

7. During the term of this Agreement, the MWRA shall bill Worcester for the total volume of water used by CVRWD as metered by Worcester, and will bill CVRWD directly for the 10% surcharge over the prevailing rate mandated by the Policy. Worcester shall bill CVRWD for water used in accordance with the terms of the agreement between Worcester and CVRWD which is incorporated by reference. CVRWD shall remit its payments to Worcester for the total volume of water used. CVRWD will remit its payments for the 10% surcharge to MWRA directly.

8. The parties agree that the emergency withdrawal authorized under this Agreement is not appropriate for or intended to provide a permanent water supply to CVRWD. Any request by CVRWD for a permanent partial water supply from MWRA shall require full consideration of all alternatives, including effective water conservation and leak detection, and shall be subject to all approvals required under Section 8 (d) of Chapter 372 of the Acts of 1984, MWRA policies, and under applicable state law and regulations.

9. Any dispute arising between the MWRA and CVRWD under the terms of this Agreement shall be resolved in accordance with the dispute resolution process set forth at 360 C.M.R. 1.00.

10. The term of this Agreement shall extend from October 7, 2016, the day in which CVRWD could begin to take water ("start date") through and including the six-month anniversary of the Start Date. During the term, MWRA reserves the right to terminate this Agreement at any time due to unforeseen circumstances such as inadequate supply, insufficient hydraulic capacity and other conditions related to the safe supply of existing users and operational requirements of the MWRA's waterworks system.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed on this_____ day of_____, 2016 by their duly authorized representatives.

MASSACHUSETTS WATER
RESOURCES AUTHORITY

By:

_____
Frederick A. Laskey
Executive Director

CHERRY VALLEY AND ROCHDALE WATER DISTRICT

By:

_____
Michael F. Knox
Executive Director

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION

In the matter of:	
Cherry Valley and Rochdale Water District	ENF: UAO-CE-16-5F001 PWS ID #: 2151001

EMERGENCY DECLARATION

I. THE PARTIES

1. The Massachusetts Department of Environmental Protection ("MassDEP") is a duly constituted agency of the Commonwealth of Massachusetts established pursuant to M.G.L. c. 21, § 7. MassDEP has its principal office located at One Winter Street, Boston, Massachusetts 02108, and its Central Regional Office at 8 New Bond Street, Worcester, Massachusetts.

2. The Cherry Valley and Rochdale Water District (the "District") is a water district established by Chapter 381 of the Acts of 1910 for the purpose of supplying water to the inhabitants of the Cherry Valley and Rochdale sections of the Town of Leicester. The District's principal place of business is at 148 Henshaw Street, Leicester, Massachusetts 01524. The District's mailing address for purposes of this Emergency Declaration is the District, P.O. Box 138, Rochdale, Massachusetts 01542.

II. STATEMENT OF FACTS AND LAW

3. The District operates a public water system (identification number 2151001) within the Town of Leicester and serves a population of approximately 3,300 persons. The District also serves approximately 150 customers in the Town of Oxford.

4. The District holds a Water Management Act (WMA) Registration Statement (2-10-151.01) and a WMA Permit (9P2-2-10-151.02) to withdraw water from two sources in the French River Basin: the Grindstone Well (2151001-01G) and Henshaw Pond (2151001-02G) at an annual average withdrawal rate of 0.27 million gallons per day (MGD). The District's reported raw water maximum daily withdrawal volumes from 2011 through 2015 ranged from 0.51 to 0.58 million gallons per day MGD.

5. On March 25, 2013, the District entered into an Administrative Consent Order (ACO-CE-13-5D003) with MassDEP to establish a readily available functional emergency interconnection with the Town of Leicester water system or to improve an existing emergency interconnection with the City of Worcester to address violations of Drinking Water Standards for the Disinfection By-Products Rule ("DBPR") and the Surface Water Treatment Rule. To date,

the District has not established a permanent interconnection with another public water system, although the District is negotiating with the City of Worcester to enter into a contract for a permanent water supply.

6. On July 9, 2015, the Massachusetts Water Resources Commission issued a Determination of Insignificance to the District pursuant to the Interbasin Transfer Act permitting the Respondent to purchase up to 0.60 MGD from the City of Worcester through the existing interconnection.

7. On July 8, 2016, the Secretary of Energy and Environmental Affairs declared a drought Watch for Central Massachusetts, which includes the Town of Leicester. The drought status was upgraded to a Warning status effective August 12, 2016.

8. On August 22, 2016, the District imposed mandatory water restrictions on all of its users banning all outdoor water use so as to conserve its diminishing water supply.

9. On September 28, 2016, the District notified MassDEP that it was taking steps to activate the emergency interconnection with the City of Worcester because the water level in its primary water source, Henshaw Pond, was at a critically low level.

10. The City of Worcester has the ability to purchase water directly from the Massachusetts Water Resources Authority ("MWRA") and is currently purchasing water to supplement its Quinapoxet Reservoir. As of October 7, 2016, MWRA's reservoirs were within normal levels.

11. On October 5, 2016, the District notified MassDEP that water in Henshaw Pond was substantially depleted.

12. On October 6, 2016, MassDEP conducted an inspection of the District's Henshaw Pond facility and confirmed that its sources were at critical levels to supply water to its customers. Water levels in Henshaw Pond were within ten (10) inches of the intake, substantially below the estimates provided by the District on September 28, 2016.

13. On October 6, 2016, MassDEP evaluated the District's alternatives and determined that there is no feasible interconnection other than the City of Worcester to provide an emergency supply of water to the District.

14. On October 6, 2016, the District petitioned MassDEP for a Declaration of State of Water Supply Emergency, pursuant to M.G.L. c. 21G, §§ 15 through 17 and 310 CMR 36.00, to address the lack of available supply in Henshaw Pond, which if unabated will result in the District's inability to supply water to its 3,300 customers within five (5) to seven (7) days.

15. Pursuant to M.G.L. c.21G, § 15, and the Water Management Regulations set out at 310 CMR 36.40(2), MassDEP may declare a state of water emergency if it finds that there exists or impends a water supply shortage of a dimension which endangers the public health, safety or

welfare. Further, in response to a petition for a Declaration of a State of Water Supply Emergency and pursuant to this statutory section, MassDEP may require the water supplier to submit for its review and approval a plan for restraining the use of water by whatever means it deems appropriate and feasible. The statute limits any Declaration of a State of Water Supply Emergency to no more than six months in the aggregate in any twelve month period, unless MassDEP determines that a longer state of emergency is required to protect the public health.

16. Pursuant to the Water Management Act, M.G.L. c. 21G, §§ 16 and 17, MassDEP may issue orders during a state of water emergency declared under M.G.L. c. 21G, § 15 to, among other things, establish priorities for the distribution of any water or quantity of water use, to permit any person engaged in the operation of a water supply system to cease the distribution of water, to distribute water to certain users as specified by MassDEP, to require the implementation of specific water conservation measures and to purchase water from another public water system.

III. DETERMINATION AND ORDER

17. For the reasons set forth above and pursuant to the Water Management Act, M.G.L. c. 21G, § 15, MassDEP hereby determines that a water supply emergency exists and that it endangers the public health, safety or welfare of the customers of the District. Unless extended by MassDEP, this Emergency Declaration shall remain in effect for six (6) months of the effective date of this Order.

18. By issuing this Emergency Declaration, MassDEP hereby grants the District authority to operate the existing emergency connection to the City of Worcester and to purchase water not to exceed a daily average volume of 0.27 mgd as permitted in its Water Management Act Permit.

19. The District's ban on non-essential outside water use shall remain in place for the duration of this Emergency Declaration. For purposes of this Emergency Declaration, the term "nonessential outside water use" is defined to include those uses that do not have health or safety impacts, are not required by regulation, and are not needed to meet the core functions of a business or other organization. The District shall also advise its customers to reduce indoor water usage. The District shall implement all necessary measures to enforce the water use ban, and shall report the measures taken to notify its customers of the water ban and to enforce the water ban within five days of the date of issuance of this Declaration and Order.

20. The District shall maintain records of any water pumped from all of its sources as required under the Regulations during the duration of this Declaration and shall provide those records to the Department on request. The combined volume purchased from the City of Worcester and withdrawn from the District's sources during the Emergency shall not exceed the total authorized withdrawal volumes authorized under the District's Water Management Act Withdrawal Permit.

21. The District shall comply with all terms and conditions of its Water Management Act Withdrawal Permits which remain unchanged by this Emergency Declaration.

22. As part of the activation of the interconnection, the District shall install and activate a booster pump at the site of the Henshaw Pond Water Treatment Plant no later than Tuesday, October 11, 2016 to fully serve the District service area with water supplied from the City of Worcester. Until activation of the booster pump, the District shall minimize withdrawals from its sources by providing water from its sources only to the Rochdale section of the District. Upon installation and activation of the booster pump, the District shall immediately cease all withdrawals from its Henshaw Pond and the Grindstone Well sources until authorized by MassDEP to reactivate.

23. Within 24 hours of booster pump installation and activation, the District shall conduct a full set of bacteriological sampling with chlorine residual measurements and water quality parameters (minimum to include pH, temperature, orthophosphate, and alkalinity) at all approved coliform sampling locations. Results shall be reported to MassDEP as soon as available but no more than 24 hours of receipt by the District.

24. This Declaration shall continue unless revoked by MassDEP. The Declaration will be revoked if MassDEP finds that:

a. The demand for water no longer exceeds available supply;

b. The public health, safety, or welfare is no longer endangered by an existing or impending water shortage in part or all of the area to which the state of water supply emergency applies; and

c. The District has demonstrated to MassDEP that each of the following has occurred:

1. The facts relied upon by MassDEP in its Declaration of a State of Water Supply Emergency have been altered or no longer exist;

2. The District has successfully implemented its plan for bringing about an end to the state of water supply emergency and plans for preventing similar occurrences have been developed; and

3. The District has complied with, or is taking action to comply with, all orders issued with MassDEP's Declaration of a State of Water Supply Emergency to the satisfaction of the Regional Director.

25. If the District fails to comply with the provisions of this Emergency Declaration and Order, MassDEP may assess a civil administrative penalty as provided in M.G.L. c. 21A, §16 and M.G.L. c. 21G, §14. MassDEP also reserves its rights to seek civil judicial penalties as provided in M.G.L. c. 21G, §14. Each day of continued violation shall constitute a separate

offense. In addition, MassDEP reserves its rights to request the Massachusetts Attorney General to bring an action in the Superior Court to compel compliance with this Declaration and Order.

Issued By:

MASSACHUSETTS OF ENVIRONMENTAL PROTECTION

By: _____

Mary Jude Pigsley, Regional Director
Central Regional Office
8 New Bond Street
Worcester, Massachusetts 01606
Telephone (508) 792-7650

Date: 10/7/16

W C.1
IV B.5
11/16/16

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: November 16, 2016
SUBJECT: Commonwealth Avenue Pump Station Improvements
Design, Engineering Services during Construction and Resident Engineering/Inspection Services
Black & Veatch Corporation
Contract 7523

COMMITTEE: Water Policy & Oversight

___ INFORMATION
_X_ VOTE

Michele S. Gillen
Director of Administration

A. Navanandan, P.E., Chief Engineer
Lisa Hamilton, P.E., Sr. Program Manager
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to select Black & Veatch Corporation to provide Design, Engineering Services during Construction and Resident Engineering/Inspection Services for the Commonwealth Avenue Pump Station Improvements, and to authorize the Executive Director, on behalf of the Authority, to execute said contract in an amount not-to-exceed $2,775,831, for a contract term of 54-months from the Notice To Proceed.

BACKGROUND:

The Commonwealth Avenue Pump Station is located at 1160 Commonwealth Avenue in a primarily residential neighborhood in the City of Newton (see attached Figure 1). It supplies water to 85 percent of the City of Newton on a regular basis and can serve the remaining 15 percent in an emergency. The pump station is supplied through a single connection to Shaft 6 of MWRA's City Tunnel.

The primary purpose of this project is to provide an alternate (redundant) potable water supply to the pump station in the event that the City Tunnel fails or needs to be taken out of service. The alternate supply will be provided by two existing MWRA Low Service pipe lines (48-inch and 60-inch) located in Commonwealth Avenue across the street from the Pump Station.

The Commonwealth Avenue Pump Station was originally placed into service in 1953 and received a variety of improvements over the years including a renovation completed in 1999. That renovation to upgrade the capacity and reliability of the pump station included construction

of a new 'West' Building to contain two additional pumps and a 900kW diesel-generator, and rehabilitation of the existing 'East' Building with new piping, valves and two pumps.

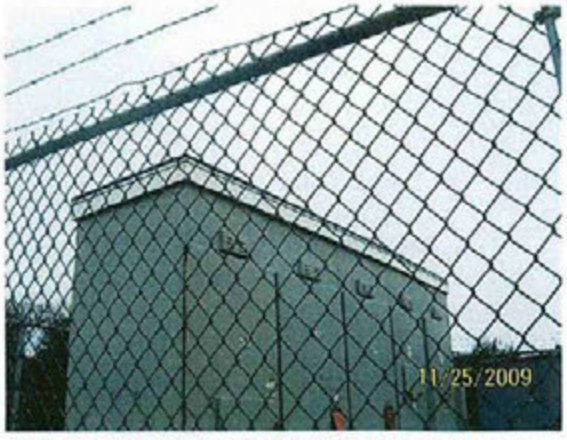
The pump station has a total capacity of 27-million gallons per day (mgd) with four identical 9-mgd pumps (two in each building). Two out of the four pumps are typically operated to maintain an adequate water level at the City's Newton Covered Reservoir. The East Building was designed to allow the installation of a third pump in the future.

The East and West Buildings are separate but are heated by a common boiler and are electrically interconnected to allow the generator in the West Building to provide emergency power to all equipment. The main ground level floor for both buildings includes an office, pump room, electrical room and a bathroom. The downstairs area includes the pump suction and discharge piping, valves and instrumentation.

Commonwealth Avenue Pump Station, Newton

The buildings are air-conditioned to prevent the pumps and piping from sweating during the summer and provide longer life for electrical components such as Variable Frequency Drives and Switchgear. However, there have been maintenance problems, as the existing air-conditioning system in the East Building is oversized as it was sized for diesel equipment that was replaced with more efficient electrical pumps in the 1999 renovation at the Pump Station. The air conditioning system was not replaced in 1999 and now warrants replacement.

On November 25, 2009 there was a power outage at the Commonwealth Avenue Pump Station and the emergency generator did not automatically respond.



Membrane Roof on Outdoor Switchgear.

It was determined that a leak in the roof of the outdoor switchgear was the cause for the failure. As an interim measure a membrane roof was constructed by in-house staff over the electrical equipment. Replacement of the existing outdoor switchgear is included in this contract.

DISCUSSION

This professional services contract will provide design, engineering services during construction and resident engineering/inspection services for Commonwealth Avenue Pump Station Improvements.

The project includes new pipe connections to the Low Service pipes and two new pumps (one replacement and one additional) for redundancy. The project also includes new Supervisory Control and Data Acquisition (SCADA) controls that were initially planned to have been done other another contract. Additionally, the project includes new electric switchgear, new electric transformers and new heating, ventilation and air conditioning equipment to replace older equipment that has a history of maintenance issues.

Of the total contract duration of 54-months, 24-months is for design services, 18-months for engineering services during construction and resident engineering/inspection services, and 12-months for the construction warranty period.

Procurement Process

On August 10, 2016, MWRA issued a one-step Request for Qualifications Statements/Proposals (RFQ/P). The RFQ/P was publicly advertised, and notice of release was sent directly to twelve firms. Nineteen firms requested the RFQ/P documents. The RFQ/P utilized the following criteria and points: Cost – 25 points; Qualifications and Key Personnel – 20 points; Experience/Past Performance on Similar Non-Authority Projects – 20 points; Technical Approach/Capacity/Organization and Management Approach – 15 points; Past Performance on Authority Projects – 15 points; and Minority and Women Business Enterprise Participation – 5 points.

On September 23, 2016, MWRA received one proposal from Black & Veatch Corporation (Black & Veatch). Staff contacted the other 18 firms that had received the RFQ/P to find out why they did not submit proposals. Two of those firms were included as subconsultants in Black & Veatch's proposal and ten did not provide feedback; however, six firms offered business reasons for not submitting a proposal. Those reasons included: competitors having a perceived potential advantage in the depth of relevant experience; inability to be competitive with firms; the work was outside the firm's area of expertise; and not having team qualifications with the right fit for this specific project.

The proposal costs are presented below:

CONSULTANT FIRM	PROPOSED CONTRACT COST	LEVEL OF EFFORT	COST PER HOUR
Engineer's Estimate	$2,528,217		
Black & Veatch Corporation	$2,854,334	20,117 hours	$141.89

The Selection Committee was in agreement that Black & Veatch's proposal presented an appropriate level of effort and distribution of work, and that the cost was reasonable considering that the Authority was seeking highly qualified staff for this project. Black & Veatch's Technical Approach showed good understanding of the project issues. Black & Veatch's proposed team is highly qualified and has significant relevant experience. Overall Black & Veatch received favorable reviews on reference checks conducted for its work on MWRA projects. A favorable non-MWRA reference was provided by Charlotte Water for work in Charlotte, North Carolina.

The Black & Veatch cost proposal is $326,117 (12.9%) over the Engineer's Estimate. MWRA reviewed Black & Veatch's cost proposal to determine those factors that contributed to the differential. Staff found that the most significant reason for the variance was the compensation for the proposed Resident Engineer. In accordance with MWRA's Procurement procedures, staff entered into discussions with Black & Veatch to confirm costs, and staffing. Based on the negotiations, Black & Veatch agreed to fill the Resident Engineer's position with qualified staff at a more competitive labor rate. Based on those discussions, staff believe that Black & Veatch can complete the project for the negotiated cost of $2,775,831.

Staff considered re-advertising this contract but determined, based on a survey of the other firms contacted, that re-procurement would not likely produce differing results. Based on the Selection Committee's review of the proposal, the selection criteria and the appropriateness of the negotiated cost, staff recommend awarding this contract to Black & Veatch for the negotiated price of $2,775,831.

BUDGET/FISCAL IMPACT:

The FY17 CIP includes a budget of $800,000 for Contract 7523. The Contract award is $2,775,831 or $1,975,831 over budget. The award amount is higher than the budget due to a significant increase in the scope to include replacement of outdoor electric equipment, HVAC system, and SCADA control system, not only for Commonwealth Ave. Pump Station, but for the Gillis, Newton Street and Lexington Street Pump Stations as well. In order to maximize efficiency Staff combined all of this work into one contract.The FY17 CIP (Contract 7526, Pump Station Rehab – Design/CA/RI with a budget of $3,940,000 and Contract 5218, Waterworks SCADA/PLC Upgrades with a budget of $18,500,000) includes the work related to Gillis, Newton Street and Lexington Street Pump Stations. Contract 7526 and Contract 5218 will be reduced accordingly to account for the increases described in Contract 7523 presented to the Board today.

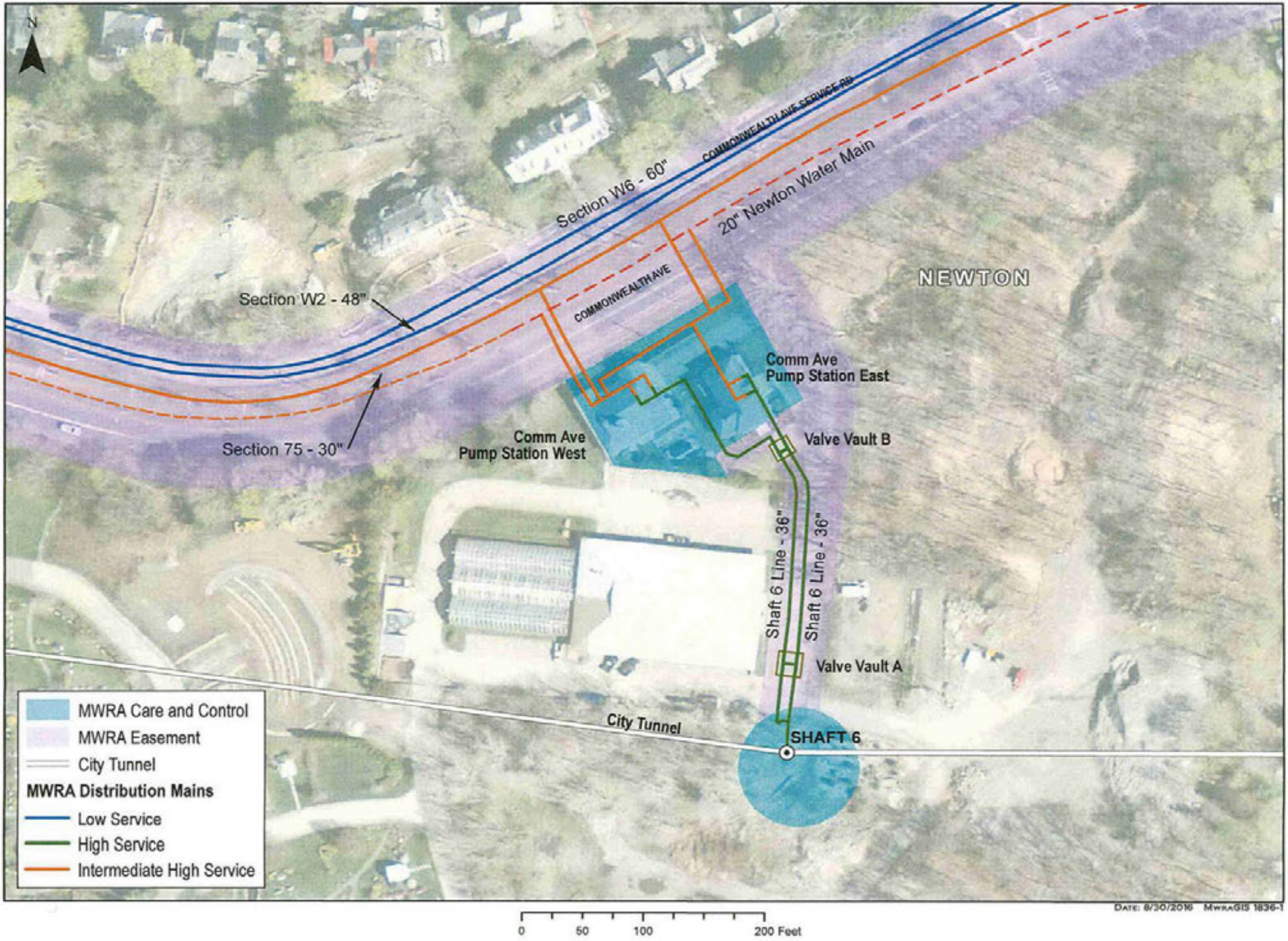
MBE/WBE PARTICIPATION:

The minimum MBE or WBE participation requirements for this project were established at 7.18% and 5.77%, respectively. Black & Veatch's project team includes Green International Affiliates, Inc. a certified Minority Business Enterprise and Peer Consultants a certified Minority and Women Business Enterprise and has committed to 24.34% MBE and 6.48% WBE participation.

ATTACHEMENT:

Figure 1.

FIGURE 1


N
COMMONWEALTH AVE SERVICE RD
Section W6 - 60"
20" Newton Water Main
NEWTON
Section W2 - 48"
COMMONWEALTH AVE
Comm Ave
Pump Station East
Comm Ave
Pump Station West
Valve Vault B
Section 75 - 30"
Shaft 6 Line - 36"
Shaft 6 Line - 36"
Valve Vault A
City Tunnel
SHAFT 6
MWRA Care and Control
MWRA Easement
City Tunnel
MWRA Distribution Mains
Low Service
High Service
Intermediate High Service
0
50
100
200 Feet
DATE: 8/30/2016 MWRAGIS 1836-1

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: November 18, 2016
SUBJECT: Northern Intermediate High Section 110 – Stoneham and Wakefield
Albanese D&S, Inc.
Contract 7478

COMMITTEE: Water Policy & Oversight

____ INFORMATION
_X_ VOTE

Michele S. Gillen
Director of Administration

Patrick T. Barrett, Program Manager
A. Navanandan, P.E., Chief Engineer
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the award of Contract 7478, Northern Intermediate High Section 110 and 112-Stoneham and Wakefield to the lowest responsible and eligible bidder, Albanese D&S, Inc. and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of $17,817,999.00, for a contract term of 610 calendar days from the Notice to Proceed.

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 main pipeline that serves this area (Section 89) is a three-mile-long, four-foot-diameter, pre-stressed concrete cylinder pipe (PCCP) transmission main with no redundancy other than the low-capacity, century-old Section 29 that parallels its route for a short distance. The 10,500-foot length of Section 89 northwest of Spot Pond is constructed of PCCP with Class IV reinforcing wire, which was used by the now defunct Interpace Corporation for a short period of time in the 1970s. It has been well documented, based upon catastrophic pipe failures elsewhere in the country, that Class IV reinforcing wire is susceptible to hydrogen embrittlement, which can lead to premature pipe failure. In addition, records indicate that this portion of the Section 89 pipe was manufactured at Interpace's Hudson, New York Plant during a window of time when the concrete coating over the Class IV reinforcing wires was defective leading to cracking and

spalling, which can accelerate the corrosion of the reinforcing wires. Due to the lack of redundancy, Section 89 cannot be taken out of service for inspection or for repairs.

The project goal is to design and construct a new pipeline that will provide redundancy to the community meters so that Section 89 can be removed from service for inspection and rehabilitation. This work is included as part of CIP budget for FY20.

On March 16, 2011, the Board approved the award of Contract 6906 to Fay, Spofford & Thorndike, LLC, now Stantec Inc. for Design, Construction Administration and Resident Inspection Services. This original design route, based on geotechnical investigations and community input has been revised. The new route includes a 48-inch pipeline, that will extend from Gillis Pump Station to the Reading/Stoneham emergency connection and a 36-inch pipeline, which will extend from the Reading/Stoneham interconnection to Meter 240 in Woburn completing a looped service area. The total estimated cost of the new pipeline is $47.1 million as included in the FY17 CIP.

Contract Components and Schedule

The project design originally included the bidding of two separate construction contracts. However, in coordination with the Town of Reading, Town of Stoneham and MassDOT, the project will now be completed with four construction contracts as follows: (See Attachment A)

- The first construction contract, Contract 7066, consists 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 consists of the construction of 8,800 linear feet of 36-inch water transmission main in the City of Woburn and the Town of Reading. This contract is currently under construction, with an anticipated substantial completion date of December 2017;

- The third construction contract, Contract 7478, the subject of this award, will include the construction of 7,800 linear feet of 48-inch diameter transmission main in the Town of Stoneham and 2,600 linear feet of 16 and 12-inch diameter transmission main to service Wakefield Meter 96; 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. This contract is ready for advertisement for construction.

Procurement Process

Contract 7478 was advertised and bid utilizing MWRA's e-procurement system (Event 2535) in accordance with Massachusetts General Laws, Chapter 30. Seven bids were received and opened on November 7, 2016. The bid results are as follows:

Bidders	Bid Amount
Engineers Estimate	*$21,900,000*
Albanese D&S, Inc.	$17,817,999
P. Gioioso & Sons, Inc.	$18,299,000
RJV Construction Corp.	$19,303,500
Baltazar Contractors Inc.	$19,525,000
Revoli Construction Co., Inc.	$20,278,000
Albanese Bros. Inc.	$20,973,317
Barletta Heavy Division, Inc.	$25,584,000

The Engineer's Estimate is $21,900,000. The three lowest bids are within 8% of each other, an indication of the reasonableness of the low bid, which is 18.6% below the Engineer's Estimate. The Engineers Estimate did not consider blasting as a method of rock removal, which was provided for in the contract through addendum. Rock removal through blasting provides for more efficient rock excavation and accounts for a cost savings of up to $1,500,000.

MWRA staff has met with Albanese D&S, Inc. and confirmed that the bid price reflects all work as described in the contract documents.

References for Albanese D&S were checked and found to be favorable. Albanese D&S is currently working under MWRA Contract 7471, Section 110 Reading and Woburn. Staff report that the Contractor's performance of this project is good and currently on schedule. Past projects completed for the MWRA within the past six years, including Northern High Service Pipeline Improvements-Section 53, Contract 5177 ($2,938,026), and the Northern Intermediate High Stoneham-Reading Connection Contract 7216 ($3,481,6281). Staff report that the Contractor's performance of these project was very good and completed on schedule.

MWRA and Stantec have concluded that Albanese D&S 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 recommends that Contract 7478 be awarded to Albanese D&S Inc. as the lowest responsible and eligible bidder.

BUDGET/FISCAL IMPACT:

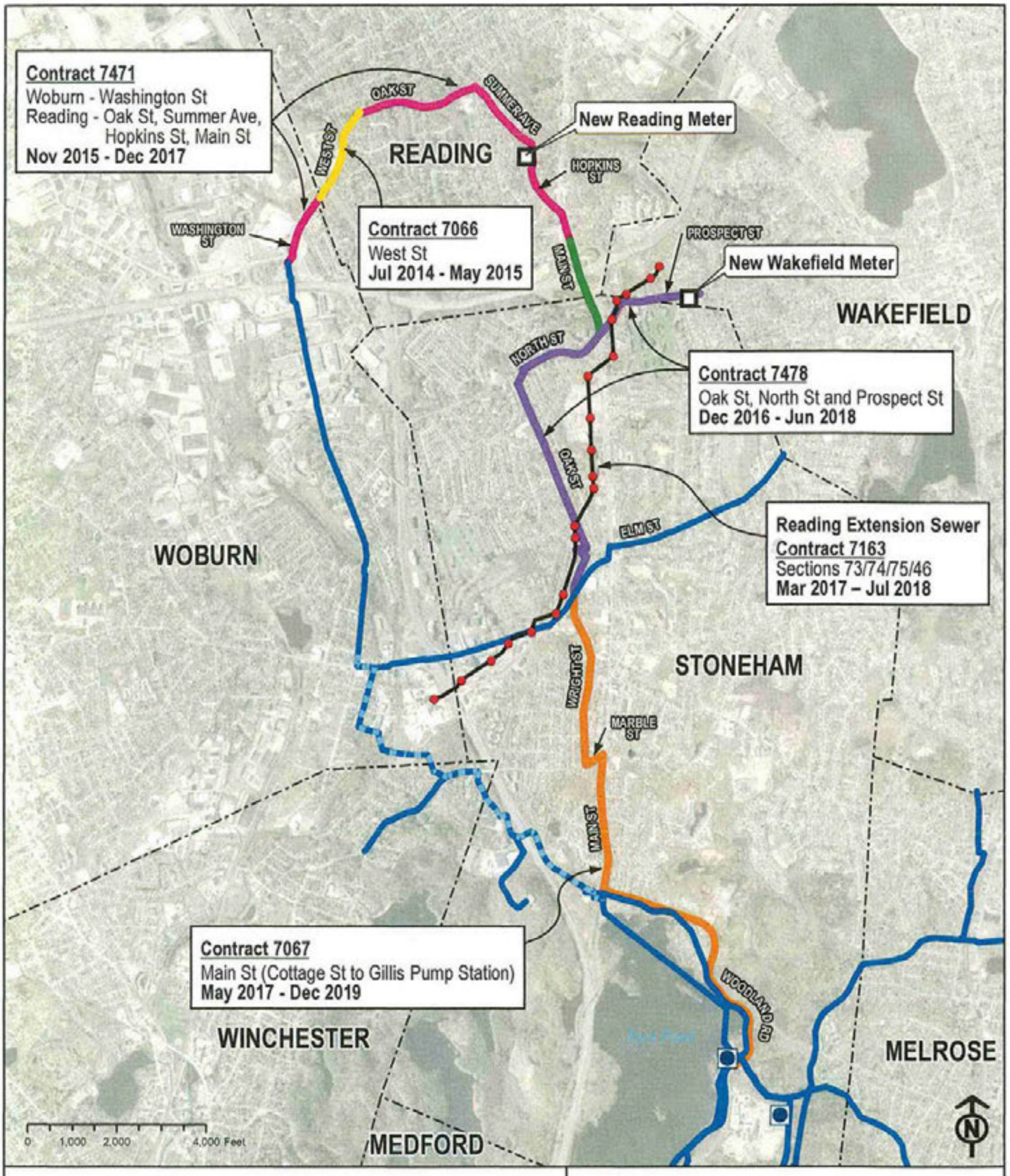
The FY17 CIP includes a budget of $47,147,000 for four construction contracts, Contracts 7066, 7067, 7471 and 7478. Contract 7478 award amount is $17,817,999.00

MBE/WBE PARTICIPATION:

The MBE/WBE participation requirements for this project were established at 7.24% and 3.6%, respectively. The Affirmative Action & Compliance Unit has reviewed the bids and has determined that Albanese D&S, Inc. bid is responsive to these requirements.

ATTACHMENTS:

Attachment A Northern Intermediate High Redundant Pipeline Project, Route Overview
Attachment B NIH Section 110 and 112 Stoneham and Wakefield, Contract 7478

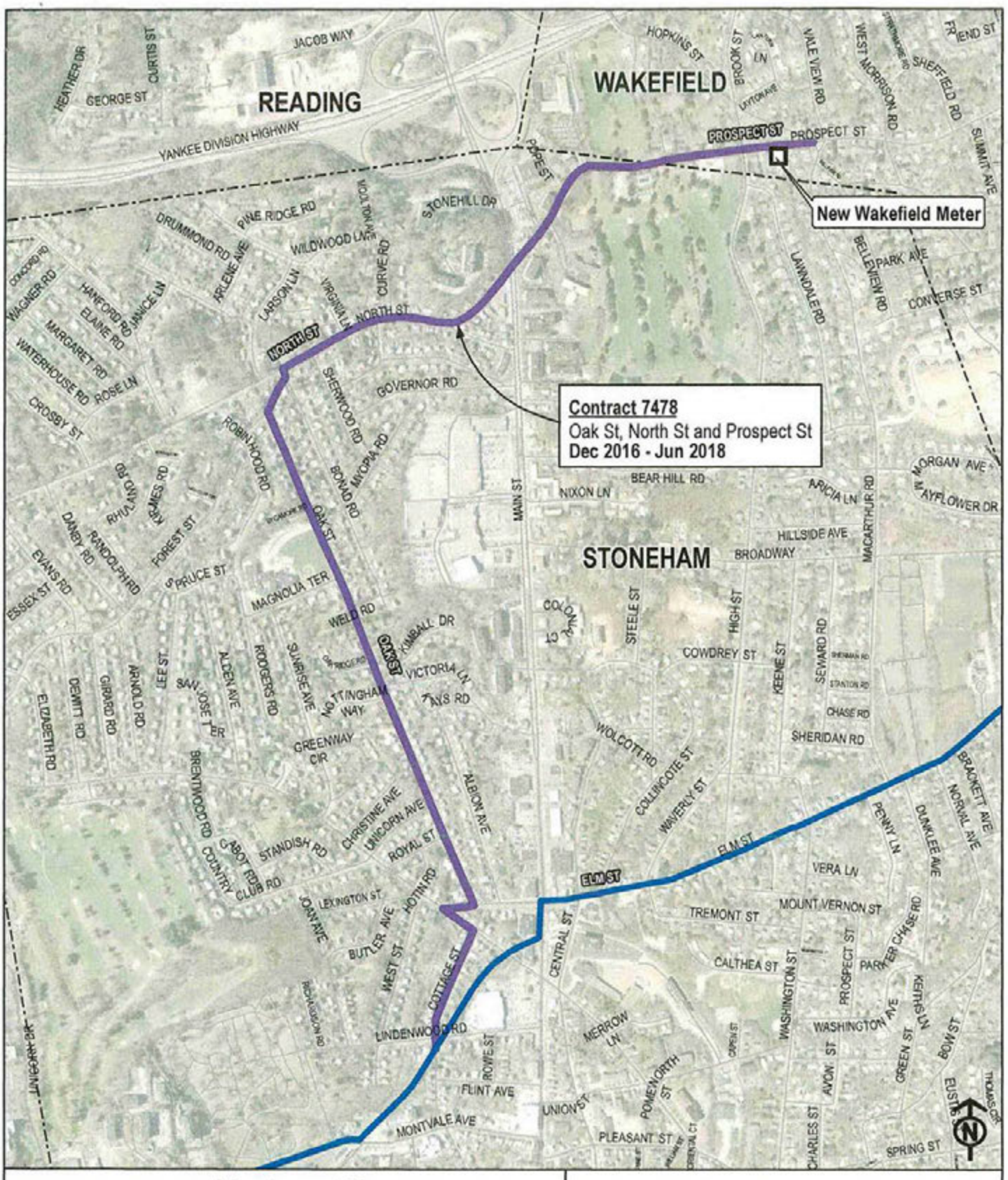


Attachment A

MASSACHUSETTS WATER RESOURCES AUTHORITY

Northern Intermediate High Redundant Pipeline
Reading Extension Sewer Rehabilitation
Route Overview

- Contract 7471
- Contract 7066
- Contract 7478
- Contract 7067
- MWRA Mains
- Class IV PCCP
- Short-Term Improvements
- MWRA Reading Extension Sewer
- Proposed CIPP Insertion/By-Pass Pumping Locations
- New Meter Locations



Attachment B

MASSACHUSETTS WATER RESOURCES AUTHORITY

NIH Section 110 and 112, Stoneham and Wakefield Contract 7478

Contract 7478

MWRA Mains

New Meter Locations

0 500 1,000 2,000 Feet

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: November 16, 2016
SUBJECT: Section 80 Repair
P. Caliacco Corporation
Contract 7532

COMMITTEE: Water Policy & Oversight

___ INFORMATION
_X_ VOTE

Michele S. Gillen, Director
Administration and Finance

Peter Grasso, Project Manager
A. Navanandan, P.E., Chief Engineer
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the award of Contract 7532, Section 80 Repair, to the lowest responsible and eligible bidder, P. Caliacco Corporation, and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of $1,828,409 for a contract term of 212 calendar days from the Notice to Proceed.

DISCUSSION:

MWRA's Section 80 water main was constructed in 1959 and consists of approximately 10,000 linear feet of 48-inch diameter welded steel pipe and approximately 5,000 linear feet of 36-inch diameter welded steel pipe. It starts at Shaft 5/5A in Weston and terminates at the Saint Mary Street Pump Station in Needham. The water main partially supplies the towns of Wellesley and Needham through meters 203 and 160 respectively (See attached Figure 1).

The portion of Section 80 that crosses the Charles River by MDC's Riverside Park in Weston has had a long history of leaks. The earliest noted leak appeared 10 years after the pipe was installed in 1969 and most recently leaks occurred in March of 2016 and September 2015. The leaks were located on a section of pipe on the bank of the Charles

River where the pipe is not encased in concrete, is exposed to ground water and has corroded. A recent inspection of the pipe in this area showed that the pipe is severely pitted, and in some spots, there is only 1/16 of an inch of steel remaining (See photo below).

This project will replace 160 linear feet of the 48-inch diameter steel pipe in this area with new 48-inch diameter steel pipe. Also, as part of the project, two 48-inch butterfly valves and appurtenances will be installed (See attached Figure 2). The valves were added to the project to allow for the isolation of the repair section and to facilitate installing a 20-inch diameter water by-pass system which will allow the Authority to continue to supply water during the lower demand period to the communities of Wellesley and Needham during the repair.

Historically, Section 80 has been utilized to supplement Wellesley's and Needham's local supplies during summer high demands periods only. Wellesley and Needham have relied only on their own wells during the winter lower demand months. During the last several years both communities have increasingly relied upon Section 80 to supply water even during the lower demand periods. This winter use has increased with the recent drought conditions. During design coordination for this project, the communities indicated their need for continued water from MWRA even during this winter's low demand period resulting in the need for a temporary bypass around the section to be replaced. Construction is expected to be completed prior to the end of May or early June 2017.

The new 48-inch diameter pipe will be coated with polyurethane and encased in concrete. Replacing this section of pipe will stop the persistent leaks in this portion of Section 80 and provide reliable water service to the towns of Needham and Wellesley.

Procurement Process

Contract 7532 was advertised and competitively bid in accordance with Massachusetts General Laws, Chapter 30. Six bids were received and opened on October 20, 2016 with the following results:

Bidder	Cost
Revised Engineer's Estimate	***$1,726,164.00***
P. Caliacco Corp.	**$1,828,409.00**
P. Gioioso & Sons, Inc.	$1,879,000.00
Albanese D&S, Inc.	$1,963,983.70
RJV Construction Corp.	$1,975,370.00
Albanese Bros., Inc.	$1,996,294.00
R. Zoppo Corp.	$2,096,000.00

The four lowest bids are within 9% of each other, an indication of the reasonableness of the low bid. Staff analyzed the differences between the low bid and the original Engineer's Estimate and concluded that the differences are primarily related to the underestimation of the cost of: installation of the 48-inch diameter steel pipe; the 20-inch diameter by-pass system that included two 48-inch butterfly valves and thrust walls; and not accounting for the cost for overtime pay required by the Contractor working 24/7 during the installation of the by-pass system and valves. This restriction was necessary to limit the amount of time that Section 80 would be off-line and not supplying water to the towns of Needham and Wellesley. Adjusting the Engineer's Estimate for these items, the revised engineers estimate is $1,726,164 which is within 6% of the lowest bid.

Qualifications for P. Caliacco Corporation, the apparent low bidder, were checked and found to comply with the requirements specified. P. Caliacco Corporation has completed several water projects for the Authority in the past. Most recently, P. Caliacco Corporation completed Contract 7066, NIH West Street Transmission Main in Reading; Section 97A, Water Main Extension, and Southern Spine Distribution Mains, Section 107, Phase 1. MWRA references report that P. Caliacco's performance on these projects was generally good with the exception of a late start on the NIH West Street project. The Authority has also contacted outside references for P. Caliacco Corporation and found their experience and performance to be acceptable. P. Caliacco Corporation has also demonstrated its ability to successfully complete large utility projects for the City of Chelsea and the Town of Winchester.

Staff have concluded that P. Caliacco Corporation 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 the award of this contract to P. Caliacco Corporation as the lowest responsible and eligible bidder.

BUDGET/FISCAL IMPACT:

The FY17 CIP includes a budget of $700,000 for Contract 7532. The amount that was budgeted in the FY17 CIP did not include the cost of the 20-inch diameter by-pass and 48-inch diameter valves that were added to the project in August of 2016. The bid price of $1,828,409 is $1,128,409 over the CIP 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.

ATTACHMENT:

Figure 1 - Section 80 Repair Project Location Map
Figure 2 - Section 80 Repair Project Site

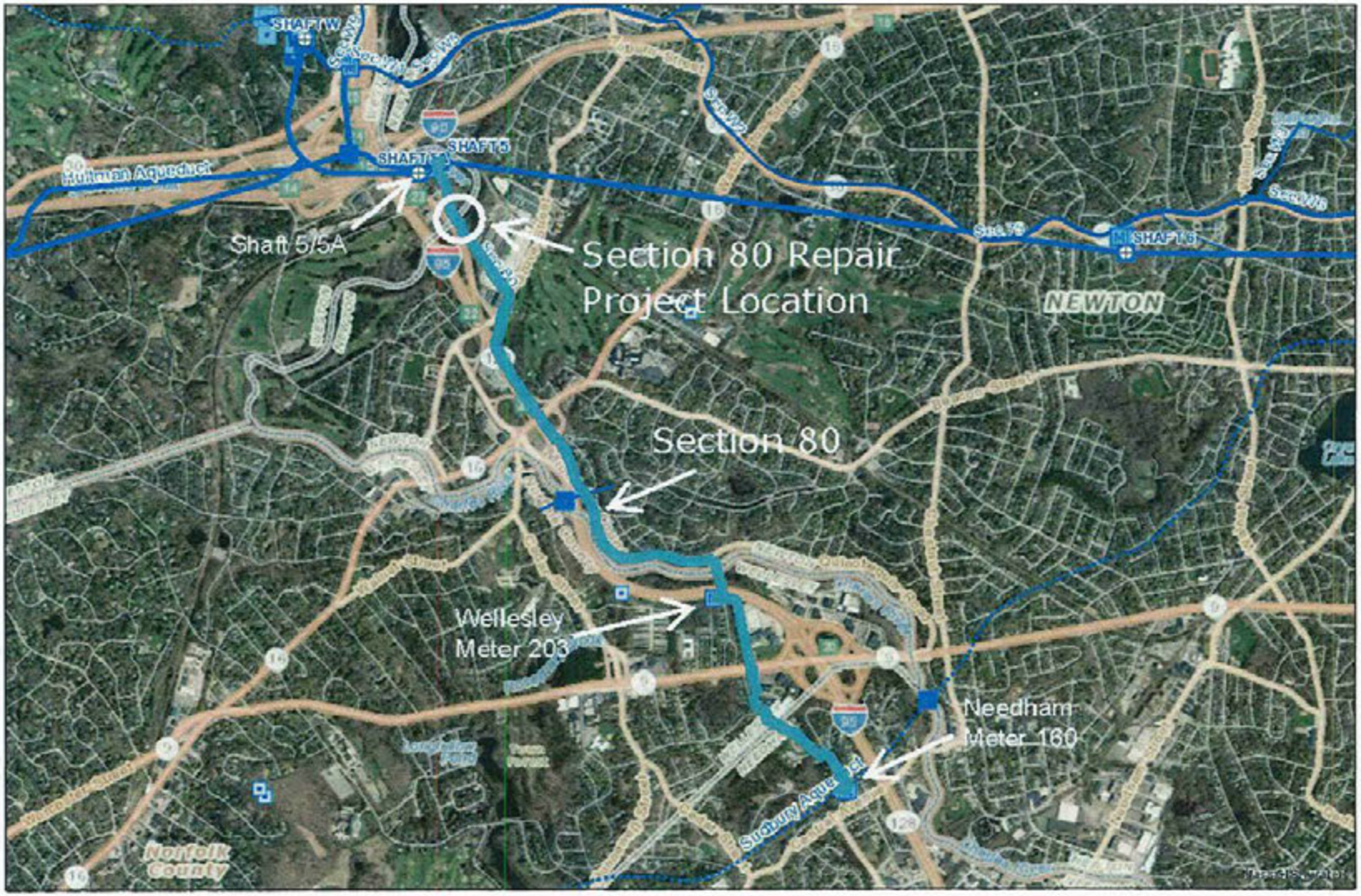


Figure 1 - Section 80 Repair Location Map

Date: 10/21/2016

Security Operational - For MWRA use ONLY

0 2,500 5,000 10,000 Feet

N W E S

Figure 2- Section 80 Repair Site Map

W C.4
IV B.8
11/16/16

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: November 16, 2016
SUBJECT: Chicopee Valley Aqueduct Intake Traveling Screen Replacement
W.M. Schultz Construction, Inc.
Contract 7488

COMMITTEE: Water Policy & Oversight

____ INFORMATION
X VOTE

Michele S. Gillen
Director of Administration

A. Navanandan, P.E., Chief Engineer
William G. Sullivan, P.E., Sr. Program Manager
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

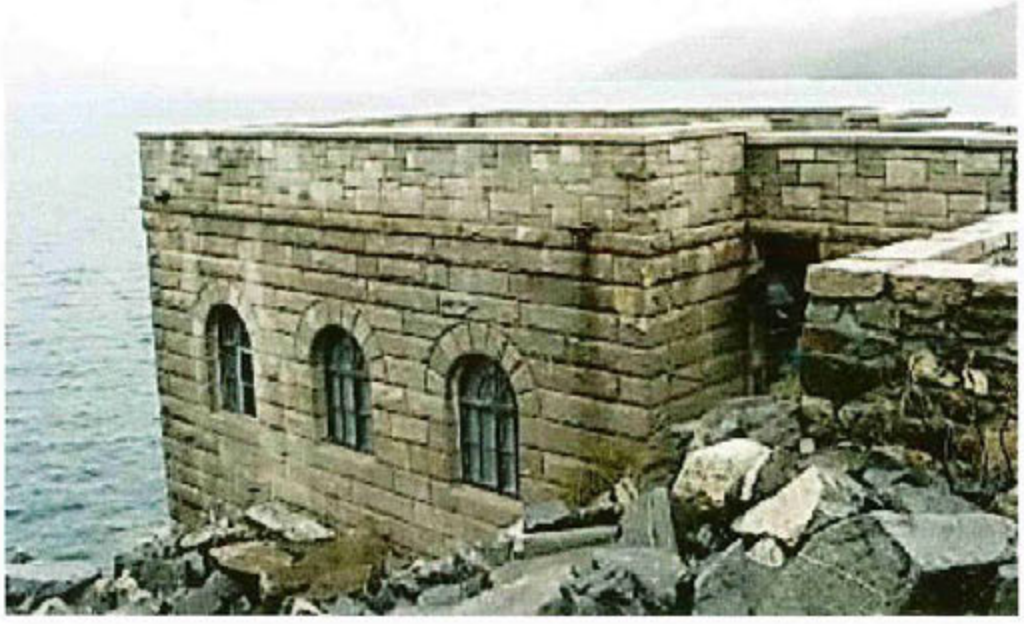
RECOMMENDATION:

To approve the award of Contract 7488, Chicopee Valley Aqueduct Intake Traveling Screen Replacement, to the lowest responsible and eligible bidder, W.M. Schultz Construction, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of $1,049,000 for a contract term of 185 calendar days from the Notice to Proceed.

DISCUSSION:

The Chicopee Valley Aqueduct supplies drinking water to the communities of Chicopee, South Hadley Fire District #1 and Wilbraham. The Chicopee Valley Aqueduct Intake Building is located on the main dam of the Quabbin Reservoir. See location plan and photos on the next two pages. Two traveling screen units were installed in the intake building in 1972 to prevent fish and other material from entering the Chicopee Valley Aqueduct. These screens are motorized to allow the screen sections to be brought to the surface for cleaning. One of the existing traveling screens has failed. Given the age, wear and tear and condition of both units, replacement is necessary. Replacement will be done on one side at a time, primarily with divers so that flow to the Swift River and the Chicopee Valley communities will not be impacted.

Location Plan: Chicopee Valley Aqueduct Intake Building



Chicopee Valley Aqueduct Intake Building

Chicopee Valley Aqueduct Traveling Screens

Procurement Process

Contract 7488, designed by Stantec Consulting Services Inc., was advertised and bid in accordance with Chapter 149 of Massachusetts General Laws. Two general bids were received and opened on October 13, 2016 and the results are presented below.

Bidders	**Bid Amount**
Engineer's Estimate	*$1,005,000*
W.M. Schultz Construction, Inc.	**$1,049,000**
Waterline Industries Corp.	$1,127,677

The bids are within 7.5% of each other, an indication of the reasonableness of the low bid. The low bid is 4.3% above the Engineer's Estimate.

MWRA staff and Stantec reviewed the scope of work with W.M. Schultz Construction, Inc. and are satisfied that the bid includes all elements of the work. References for W.M. Schultz Construction, Inc. were checked and found to be satisfactory. W.M. Shultz Construction, Inc. has not previously worked for MWRA. However, they have successfully completed water and wastewater projects in Massachusetts including the Brunell Avenue wastewater pumping station upgrades in Lenox, MA; the Bradford Street wastewater pumping station replacement in Northampton, MA; and the Holyoke Water Works Ultraviolet Treatment Facility in Holyoke,

MA. The underwater work associated with removing the existing traveling screens and installing the new screens will be done by the screen manufacturer's divers. W.M. Schultz will be responsible for the work above water including staging, turbidity control systems and rigging.

Staff have determined that W.M. Schultz Construction, Inc. possesses the skill, ability, and integrity necessary to perform the work under this contract, and is qualified to do so. Staff have further determined that the bid price is reasonable, complete, and includes the payment of prevailing wages as required. Therefore, staff recommend the award of this contract to W.M. Schultz Construction, Inc. as the lowest responsible and eligible bidder.

BUDGET/FISCAL IMPACT:

The FY17 CIP includes a budget of $1,000,000 for Contract 7488. The contract award amount is $1,049,000 which is $49,000 or 4.9% higher than budgeted. This amount will be covered within the five-year CIP spending cap.

MBE/WBE PARTICIPATION:

The Affirmative Action & Compliance Unit determined that MBE/WBE participation requirements were not applicable for this project.

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, November 16, 2016

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

Time: Immediately following Water Comm.

AGENDA

A. Approvals

1. PCR Amendments – November 2016
2. Appointment of Security Services Administrator, Office of Emergency Preparedness
3. Appointment of Network Administrator III, MIS

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the
Personnel and Compensation Committee

October 12, 2016

A meeting of the Personnel and Compensation Committee was held on October 12, 2016 at the Authority headquarters in Charlestown. Chair Wolowicz presided. Present from the Board were Messrs. Blackmon, Carroll, Cotter, Flanagan, Foti, Pappastergion, Vitale and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Karen Gay-Valente, and Bonnie Hale. The meeting was called to order at 12:20.

Approvals

*PCR Amendments – October 2016

The Committee recommended approval of amendments to the Position Control Register (ref. agenda item A.1).

*Appointment of Area Manager, Deer Island Treatment Plant

The Committee recommended approval of the appointment of Mr. William J. Carter (ref. agenda item A.2).

*Appointment of Program Manager, Process Monitoring, Deer Island Treatment Plant

The Committee recommended approval of the appointment of Ms. Tracy Survilas (ref. agenda item A.3).

*Appointment of Deputy Contracts Manager, Procurement

The Committee recommended approval of the appointment of Ms. Yvonne vanOssenbruggen-Hart (ref. agenda item A.4).

The meeting adjourned at 12:25 p.m.

* Approved as recommended at October 12, 2016 Board of Directors meeting.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: November 16, 2016
SUBJECT: November 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.

November PCR Amendments

There are four PCR amendments related to changes in the Operations Division.

The amendments are:

1. Title change to a vacant position in the Engineering & Construction Department, Sr. Staff Engineer, Structural to Project Manager, to align staffing resources with current needs.

2. Title and grade change to a filled position in the Environmental Quality Department, Administrative Manager, Unit 6, Grade 9, to Senior Analyst, ENQUAL, Unit 6, Grade 10, due to a union settlement.

3. Title and grade change to a vacant position in the Pipe Maintenance–Wastewater Department, Heavy Equipment Operator, Unit 3, Grade 15, to a Heavy Equipment Operator I, Unit 3, Grade 17, to address staffing needs in the department.

4. Title and grade change to a vacant position in the Trade Labor Department, Deer Island, Facilities Specialist, Unit 3, Grade 15, to a Heavy Equipment Operator I, Unit 3, Grade 17, to address staffing needs in the department.

The first two amendments require approval by the Personnel and Compensation Committee. The final two require Board approval after review by the Personnel and Compensation Committee.

BUDGET/FISCAL IMPACT:

The annualized budget impact of these PCR amendments is between a savings of $15,642 and a cost of $24,046 depending on the individuals selected for the vacant positions upon the completion of the hiring processes. Staff will ensure that if there is any cost increase associated with these PCR amendments, it will not result in spending over the approved FY17 Wages and Salary budget.

ATTACHMENTS:

New/Old Job Descriptions

MASSACHUSETTS WATER RESOURCES AUTHORITY
POSITION CONTROL REGISTER AMENDMENTS
FISCAL YEAR 2017

PCR AMENDMENTS REQUIRING PERSONNEL & COMPENSATION COMMITTEE APPROVAL - November 16, 2016

Number	PCR #	V/F	Type	Current Title	UN	GR	Amended Title	UN	GR	Salary	New Salary	$ Impact	For Amendment
P4	Operations Engineering & Construction 5525009	V	T	Sr Staff Engineer, Structural	9	25	Project Manager	9	25	N/A	N/A - N/A	$0 - $0	To align staffing resources with current needs in the E&C Department , Operations Division
P5	Operations ENQUAL 2250010	F	T,G	Administrative Manager	6	9	Sr Analyst, ENQUAL	6	10	$79,763	$87,790 - $87,790	$8,027 - $8,027	Union Settlement
				PERSONNEL & COMP COMMITTEE TOTAL=	2						**SUBTOTAL:**	$8,027 - $8,027	

PCR AMENDMENTS REQUIRING BOARD APPROVAL- November 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
B22	Operations Pipe Maintenance - WW 5434010	V	T,G	Heavy Equipment Operator	3	15	Heavy Equipment Operator I	3	17	$66,067	$52,320 - $72,164	-$13,747 - $6,097	To address staffing needs in the Pipe Maintenance - WW Department, Operations Division
B23	Operations Trade Labor Maintenance 29880163	V	T/G	Facilities Specialist	3	15	Heavy Equipment Operator I	3	17	$62,242	$52,320 - $72,164	-$9,922 - $9,922	To address staffing needs in the Trade Labor Maintenance Department, Deer Island, Operations Division.
				BOARD TOTAL =	2						**SUBTOTAL:**	-$23,669 - $16,019	
				GRAND TOTAL =	4						**TOTAL ESTIMATED COSTS:**	-$15,642 - $24,046	

OLD

MWRA

POSITION DESCRIPTION

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 Chapter149 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

NEW

MWRA

POSITION DESCRIPTION

POSITION: Senior Analyst, ENQUAL

PCR#:

DIVISION: Operations

DEPARTMENT: ENQUAL

BASIC PURPOSE:

Manages the Department's web pages as required to comply with permits, to provide information to the public about MWRA's environmental monitoring, and to facilitate operations. Formulates, reviews and provides financial management reports on departmental CEB and CIP budgets. Creates and edits department's web and print pieces explaining scientific information. Develops procurement requisitions and compilations of technical specification documents, performs contract administration and produces staff summaries. Develops and maintains systems for managing department documents.

SUPERVISION RECEIVED:

Works under the general supervision of the Director, Environmental Quality.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Manages departmental intranet and internet pages by designing pages in accordance with MWRA and industry standards, creating and maintaining code (e.g., HTML, Javascript, Dreamweaver), and creating content. Edits, formats, and posts technical and permit compliance reports on line. Regularly reviews web pages for ease of access to information, recommends and implements improvements.

- Manages the annual CEB and CIP preparation(s), performing analysis research by ensuring all required spending has been captured, all maintenance accounted for, projections are accurate and accountability controls are in place with responsible program

managers.

- Manages requisitions process with responsible senior program managers to ensure that no lapse between agreements occurs thereby creating risk and that long lead times on items which require competitive bidding are reduced.

- Formulates and reviews financial/management reports of the capital and operating expenses of the department including variance reports.

- Conducts special projects relative to the various planning and implementation efforts of the department, including testing of new features on the Financial Management System, Payroll/Human Resources System and/or Procurement System.

- Maintains Endnote database of technical reports, maintains HTML index of NPDES scanned documents, and manages departmental Standard Operating Procedures.

- Writes and edits departmental user guides for computer applications such as HOML web application and Standard Operating Procedures for Access applications.

- Creates and edits department's web pages, fact sheets, and brochures explaining scientific information.

- Procures and administers contracts with technical assistance from department scientific staff.

- Manages the department's CEB operations (requisition processing, PO notification, vendor payments, subsidiary ledger posting, reallocations, MBE/WBE reporting, accruals, end of year closeout, etc.) with accuracy, minimal errors, and completed in a timely manner.

- Manages the department's CIP operations (requisition processing, PO notification, vendor payments, subsidiary ledger posting, reallocations, MBE/WBE reporting, accruals, end of year closeout, etc.) with accuracy, minimal errors, and completed in a timely manner.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) A four (4) year college program in business management or related field required; and

(B) Two (2) to four (4) years of directly related experience in budgeting and/or contract compliance; or

(C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

(A) Knowledge and understanding of public procurement procedures, contract monitoring and compliance techniques, financial modeling and budgeting.

(B) Proficiency with MS Office (including ACCESS), Lawson, Hyperion, and Maximo and/ or similar applications for personnel, budgeting and asset management tracking.

(C) Knowledge of web design and coding.

(D) Demonstrated ability to write and present scientific/technical information for a general audience preferred.

(E) Excellent analytical, interpersonal, oral and written 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 spreadsheet database 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 is frequently required to sit, talk or hear. The employee is occasionally required to stand and walk.

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move up to 25 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 in office setting.

November, 2016

MWRA

POSITION DESCRIPTION

OLD

POSITION: Heavy Equipment Operator

PCR#:

DIVISION: Operations

DEPARTMENT: Field Operations

BASIC PURPOSE:

Operates heavy equipment and vehicles.

SUPERVISION RECEIVED:

Works under the general supervision of the departmental Manager or Supervisor.

SUPERVISION EXERCISED:

Exercises close supervision of skilled laborers and laborers as assigned.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Operates a variety of heavy equipment such as, but not limited to, backhoe, front-end loader, pumps, generators, and pneumatic tools.
- Assists mechanics in the maintenance and repair of heavy vehicles and equipment as needed.
- Performs light maintenance independently or as part of a team. Light maintenance shall include but not limited to:
    - Inspects and troubleshoots various systems and equipment
    - Installs and retrofits/new equipment related to plant systems.
    - Modifies and/or aligns existing equipment to specifications.
    - With proper training sets up ladders, staging and rigging and utilizes hoists, jacks, dollies,

lifts, etc. for proper access to job and to remove and install equipment.

- Operates portable pumping and/or ventilation equipment to prepare a work area for access.
- Opens hatches.
- Installs safety rails.
- Conducts routine testing, lockout/tagout, operation (startup/shutdown) and adjustment of process equipment.
- Removes snow from immediate work area.

SECONDARY DUTIES:

- Promotes and participates in the cross-functional work practices.
- Trains peers and subordinates as requested.
- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Basic reading, writing, mathematical, scientific and oral communication skills normally attained through a high school education or the equivalent: and

(B) Considerable knowledge of the methods and techniques used in the maintenance and safe operation of a wide variety of heavy and/or specialized maintenance and construction equipment and vehicles as acquired through two (2) years experience; or

(C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

(A) Ability to follow oral and written instructions.

(B) Skill in the operation of listed tools and equipment.

(C) Ability to operate heavy equipment for extended periods in a variety of climatic conditions.

SPECIAL REQUIREMENTS:

Valid Massachusetts Class A Commercial Driver's License.

Department of Public Safety Hoisting Engineer's License, 1B and 2A and the ability to obtain a 4A within six months.

Complete productivity improvement competency-based training program related to **ESSENTIAL DUTIES AND RESPONSIBILITIES** as outlined above and successfully demonstrates required competencies.

TOOLS AND EQUIPMENT USED:

Motor vehicle, specialized maintenance and construction equipment, hand tools, hoist, mobile radio.

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 the 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 object, tools or controls and reach with hands and arms. The employee is frequently required to stoop, kneel, crouch or crawl. The employee is frequently required to stand, walk, talk, hear, sit, climb or balance.

The employee must regularly lift and/or move up to 60 pounds, frequently lift and/or move up to 100 pounds. Specific vision abilities required by this job include close, 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 near moving mechanical parts, is frequently exposed to wet and/or humid conditions and is occasionally exposed to fumes and airborne particles, toxic or caustic chemicals and risk of electric shock, and vibration.

The noise level in the work environment is usually very loud in field settings, and loud at other

work locations.

March 2012

NEW

MWRA

POSITION DESCRIPTION

POSITION: Heavy Equipment Operator I

PCR#:

DIVISION: Operations

DEPARTMENT: Field Operations

BASIC PURPOSE:

Operates heavy equipment and vehicles.

SUPERVISION RECEIVED:

Works under the general supervision of the departmental Manager or Supervisor.

SUPERVISION EXERCISED:

Exercises close supervision of skilled laborers and laborers as assigned.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Operates a variety of heavy equipment such as, but not limited to, backhoe, front-end loader, cranes, tractor cab and trailers, excavators, pumps, generators, and pneumatic tools.
- Operates equipment for excavations for valve replacement, pipeline installation, leak repair, and other miscellaneous excavations.
- Installs trench boxes, mechanical shoring systems, and other support systems for the safety of excavations.
- Assists mechanics in the maintenance and repair of heavy vehicles and equipment as needed.

SECONDARY DUTIES:

- Promotes and participates in the cross-functional work practices.

- Trains peers and subordinates as requested.
- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Basic reading, writing, mathematical, scientific and oral communication skills normally attained through a high school education or the equivalent: and

(B) Considerable knowledge of the methods and techniques used in the maintenance and safe operation of a wide variety of heavy and/or specialized maintenance and construction equipment and vehicles as acquired through five (5) years experience; or

(C) Experience in urban utility excavation, construction, and installation.

(D) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

(A) Ability to follow oral and written instructions.

(B) Skill in the operation of listed tools and equipment.

(C) Ability to operate heavy equipment for extended periods in a variety of climatic conditions.

SPECIAL REQUIREMENTS:

Valid Massachusetts Class A Commercial Driver's License.

Department of Public Safety Hoisting Engineer's License, 1A, 2A, 3A and 4A.

Must demonstrate proficiency for operating heavy equipment including but not limited to:

- 50 ton Linkbelt crane
- Volvo tracked excavator
- Tractor cab and lowboy trailer
- 10 wheel dumps with tagalong trailer
- Various types of backhoes (JCB, Caterpillar, John Deer)
- Front End Loader

- Truck Mounted crane

Complete productivity improvement competency-based training program related to **ESSENTIAL DUTIES AND RESPONSIBILITIES** as outlined above and successfully demonstrates required competencies.

TOOLS AND EQUIPMENT USED:

Motor vehicle, specialized maintenance and construction equipment, hand tools, hoist, mobile radio.

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 the 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 object, tools or controls and reach with hands and arms. The employee is frequently required to stoop, kneel, crouch or crawl. The employee is frequently required to stand, walk, talk, hear, sit, climb or balance.

The employee must regularly lift and/or move up to 60 pounds, frequently lift and/or move up to 100 pounds. Specific vision abilities required by this job include close, 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 near moving mechanical parts, is frequently exposed to wet and/or humid conditions and is occasionally exposed to fumes and airborne particles, toxic or caustic chemicals and risk of electric shock, and vibration.

The noise level in the work environment is usually very loud in field settings and loud at other work locations.

March 2012

OLD

MWRA

POSITION DESCRIPTION

POSITION: Facilities Specialist

PCR#:

DIVISION: Operations

DEPARTMENT: Facility Equipment Maintenance-West, Facility Maintenance, Metro, Pipe Maintenance -Wastewater, Pipe Maintenance-Water, Trade Labor Maintenance

BASIC PURPOSE:

Performs skilled shop or field carpentry and masonry work to fabricate/repair objects of wood or masonry, for equipment structures and utilities. Treats, maintains and repairs the interior and exterior coatings of metal, wood and masonry structures and equipment.

SUPERVISION RECEIVED:

Works under the general supervision of the Trades Foreperson or Unit Supervisor.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Plans, accurately lays out work, selects appropriate stock or materials and tools or machines for the job, as specified by work order.
- Fabricates structures, devices, and assembles using powered or manual woodworking, or masonry tools. Installs locks and lock sets.
- Performs preventive, predictive and corrective maintenance on cabinets, locks and lock sets, wood structures, concrete or masonry objects and other related equipment, structures, or utility fixtures.

- Works from blueprints, sketches, oral and written directions, fabrications or devices as required; performs detailed work involving the use of precision measuring instruments, rotating machinery, cutting tools and other moving or stationary equipment.

- Participates in the preparation of surfaces for painting, papering, and in the application of the other finishes.

- Prepares surfaces for painting by washing, dusting, sanding, puttying, and other means.

- Mixes and matches paints and stains.

- Applies paint, stain, varnish, wallpaper and other finishes to surfaces by means of a brush, roller or spray equipment.

- Requisitions paint and equipment as needed.

- Removes and replaces broken window glass.

- Operates motor vehicles, such as vans and pick up trucks. Picks up and delivers supplies and equipment to work sites.

- Obtains necessary parts through established procedures.

- Performs work in a safe and professional manner.

- Reports and documents results of inspections and work performed.

- Follows established safety, operating and emergency response procedures and policies established by MWRA.

- Performs light maintenance independently or as part of a team. Light maintenance shall include but not limited to:

    - Operation of forklift or other light equipment that does not require a special license.

    - Generates inspection lists and maintenance reporting through the Computerized Maintenance Management System.

    - Inspects and troubleshoots various systems and equipment.

    - Installs and/or retrofits new equipment related to plant systems.

- Modifies and/or aligns existing equipment to specifications.
- With proper training sets up ladders, staging and rigging and utilizes hoists, jacks, dollies, lifts, etc. for proper access to job and to remove and install equipment.
- Operates ventilation and other equipment necessary to support and accomplish assigned tasks.
- Greases and lubricates, replaces oil reserves, minor packing adjustments and opens hatches.
- Installs safety rails, changes light bulbs and replaces HVAC filters.
- Conducts routine testing, lockout/tagout, operation (startup/shutdown) and adjustment of process equipment.
- Removes snow from immediate work area in order to perform tasks.
- Performs necessary cleanup and housekeeping for work area and other light maintenance tasks.

SECONDARY DUTIES:

- Promotes and participates in the productivity improvement plan.
- Trains peers and subordinates as requested.
- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) A high school diploma or GED; and

(B) Experience as a journeyman carpenter or completion of an apprenticeship in the carpentry trade or thorough knowledge of the practices of masonry trade or thorough knowledge of the proper techniques of commercial painting; and

(C) Satisfactory completion of competency-based training program in accordance with the productivity improvement plan training program established at MWRA; and

(D) Considerable knowledge of methods of preparing wood, metal, glass, plaster, cement, and other materials and surfaces for painting, as well as the tools, methods and standard practices used in the painting trade; or

(E) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Basic reading, writing, mathematical and oral communication skills.

(B) Working knowledge of the tools, methods, materials, techniques common to the trade, to include the principles of carpentry and masonry, the operation, calibration and adjustment of equipment including, but not limited to, drill presses, wood joiners, planners, sanders, saws, grinders, finishing machines and dust collecting equipment.

(C) Ability to read, interpret, plan and work from blueprints, diagrams, rough sketches or from written or oral directions to fabricate, assemble or erect, repair or replicate component parts or assemblies.

(D) Ability to estimate painting requirements for a particular task and requisition supplies for same.

(E) Working knowledge of the occupational hazards and safety precautions common to the trade, to include the satisfactory completion of MWRA safety training in safe techniques for the use of staging and material handling equipment.

(F) Ability to follow written and oral instructions.

(G) Trained in confined space entry, CPR and First Aid. Capable of entering, setting up, installing and disassembling confined space equipment. Ability to work in a confined space.

SPECIAL REQUIREMENTS:

- A valid Massachusetts Class D Motor Vehicles Operators License.
- Complete competency based training program related to **ESSENTIAL DUTIES AND RESPONSIBILITIES** as outlined above and successfully demonstrates required competencies.

TOOLS AND EQUIPMENT USED:

Motor vehicle, power and hand tools, 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 and occasionally lift and/or move more than 100 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.

November 2004

OLD

MWRA

POSITION DESCRIPTION

POSITION: Senior Staff Engineer, Structural

PCR#:

DIVISION: Operations

DEPARTMENT: Engineering & Construction

BASIC PURPOSE:

Provides structural engineering and project management for Operations Division capital and maintenance projects and technical services.

SUPERVISION RECEIVED:

Works under the general supervision of a Senior Program Manager/Engineering and Construction.

SUPERVISION EXERCISED:

Exercises close supervision and direction to engineers and drafters on assigned projects.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Performs in-house planning, design, and management of various water, wastewater, and facilities repair, improvement and replacement projects, and in the investigation and resolution of construction and operations issues.
- Provides structural engineering support to the operating departments for the operations and maintenance programs of division facilities.
- Provides review and comments on 8(m) permit applications prepared by owners and/or consultants.
- Participates in the design of in-house projects including development of project plans, specifications, cost estimates and schedules.

- Maintains organized and detailed central files on assigned projects.
- 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, contractor shop drawings and O&M manuals.
- 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.
- Supervises and manages junior professional staff, including assignment of tasks and evaluation of performance, as assigned.
- Prepares equipment and material quantity takeoffs for cost estimates.

SECONDARY DUTIES:

- Performs other related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Knowledge of principles of and practices of structural engineering as normally attained through a four (4) year college program in structural engineering or a related field; and

(B) Demonstrated knowledge of water and wastewater treatment plant, pump station, and pipeline design and construction as acquired through six (6) to eight (8) years of experience, of which two (2) years must include supervisory experience; or

Necessary Knowledge, Skills and Abilities:

(A) Knowledge of structural engineering work as related to water and wastewater infrastructure and facilities design required.

(B) Knowledge of codes and standards such as ACI, AISC, PCA, PCI, BOCA, AASHTO, AREA, OSHA, Mass. State Building and Highway codes, NETWPCC, ASCE and WEF Manual of Practice required.

(C) Proficiency with personal computers and knowledge of word processing, spreadsheets and engineering applications software required.

(D) Understanding of and experience with CADD systems preferred.

(E) Excellent interpersonal, oral and written communication skills are required.

SPECIAL REQUIREMENTS:

Massachusetts Registered Professional Engineer license preferred.

Engineer-in-Training certificate required.

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.

December 2013

NEW

MWRA

POSITION DESCRIPTION

POSITION: Project Manager

DIVISION: Operations

DEPARTMENT: Engineering and Construction

BASIC PURPOSE:

Manages professional engineering and design projects related to the rehabilitation and capital improvement of waterworks and wastewater facilities and infrastructure.

SUPERVISION RECEIVED:

Works under the general supervision of a Program Manager or Sr. Program Manager / Engineering and Construction.

SUPERVISION EXERCISED:

Exercises close supervision over a small staff of professional employees.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Manages the planning and design phases of assigned rehabilitation and capital engineering projects including detailed plans, work schedules, technical assistance, progress and evaluation.

- Supervises and performs professional engineering work of substantial difficulty and importance, including the preparation of reports and contract plans and specifications, requiring the exercising of independent engineering judgment.

- Manages all phases of consultant selection and supervision of professional engineering consultant contracts including the development of scope of services, plans and specifications, costs estimates, work schedules, negotiations and preparation of contracts award recommendations. Ensures compliance with contract budgets, schedules, and terms.

- Supervises and manages junior professional staff, including assignment of tasks and evaluation of performance. Provides technical assistance to staff in the development and performance of projects including designs for waterworks and wastewater projects.

- Initiates new projects and prepares capital or current expense budget requests as required.

- Coordinates projects with communities, external public interest groups, government agencies, and other MWRA departments. Provides technical information and assistance. May address professional and community groups and initiate outreach projects.

- Drafts documents to secure grants and permits from various federal, state and local agencies.

- Provides construction administration services during construction, including review of shop drawings, review of proposed change orders, provide interpretations and clarifications on contract documents, attend monthly progress meetings, receive and review draft redlined drawings, record drawings, and detail records and all other services necessary to support the Construction Department.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Completion of a four (4) year college program in civil engineering or related field; and

(B) Five (5) to seven (7) years experience in facilities planning, design, construction, maintenance and operations of waterworks and wastewater systems and facilities of which two (2) years must be in a supervisory capacity; or

(C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Demonstrated ability to work effectively as part of an engineering team and also to function independently, with minimal supervision.

(B) Knowledge of local, state and federal regulations as applicable to the planning, design

and construction of pump stations, interceptors, and water lines.

(C) Knowledge of Massachusetts bidding laws including M.G.L. Chapter 30 and Chapter 149 construction bidding regulations.

(D) Familiarity with computer software packages such as Word and Excel

(E) Excellent interpersonal, managerial, oral and written communication skills are required.

SPECIAL REQUIREMENTS:

Registered Professional Engineer in Massachusetts is preferred.

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 sit and to use hands to finger, handle, feel or operate objects, tools or controls. The employee frequently is required to talk or hear. The employee is occasionally required to stand, walk, and reach with hands and arms.

The employee must occasionally lift and/or move up to 10 pounds. No specific visual abilities are required by this job.

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 is not exposed to any unusual environmental conditions.

The noise level in the work environment is usually loud in field settings and moderately quiet in an office setting.

November 2014

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: November 16, 2016
SUBJECT: Appointment of Security Services Administrator, Security and Emergency Preparedness

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COMMITTEE: Personnel & Compensation

____ INFORMATION
_X_ VOTE

Andrew Hildick-Smith, Director, Emergency Planning & Preparedness
Karen Gay-Valente, Director of Human Resources
Preparer/Title

Michele S. Gillen
Director, Administration

RECOMMENDATION:

To approve the appointment of Kathryn White to the position of Security Services Administrator (Unit 6, Grade 10), at an annual salary of $93,643.72 commencing on a date to be determined by the Executive Director.

DISCUSSION:

The Security Services Administrator reports directly to the Deputy Director, Security & Emergency Preparedness. The position oversees the MWRA's physical security systems and access control procedures as well as the MWRA's security guard contract and the security equipment maintenance contract. The position became vacant upon the resignation of the previous incumbent.

Selection Process:

The position was posted internally and externally. Seven candidates were referred for interviews. One candidate withdrew. Each candidate was interviewed by the Director, Emergency Planning and Preparedness, the Deputy Directory, Security and Emergency Preparedness and a representative from MWRA's Affirmative Action and Compliance Unit. At the conclusion of the interviews, Ms. White was recommended for selection as the best candidate for the position based on her qualifications and experience.

Ms. White has over 18 years of experience in the security field. She has served in the Army National Guard and as a police officer. She also held security related positions in the banking field, which included managing new branch installations of cameras and alarm systems. Most recently, Ms. White has worked for the past eight years with AlliedBarton/Universal Security Services as a branch manager. Her accounts include MWRA's security guard contract as well as DistriGas, which

has afforded her heightened situational awareness and interaction with the Department of Homeland Security.

Ms. White has demonstrated leadership skills in roles as AlliedBarton's Regional Safety Chair for New England, American Society of Industrial Security Education Chair, and Merrimack Valley Financial Crime Network President. She has created emergency preparedness manuals and authored an active shooter white paper that she has used as a basis for table top drills with her clients. She also received a Federal Bureau of Investigation Exceptional Service Award. Her enthusiasm, dedication, hard work and efficiency have been evident to MWRA staff who believe she will be a valuable addition to the security staff.

BUDGET/FISCAL IMPACT:

There are sufficient funds for this position in the FY17 Current Expense Budget.

ATTACHMENTS:

Resume of Kathryn White
Position Description
Organization Chart

Kathryn T. White

OBJECTIVE: An able, enthusiastic, skilled, and reliable manager seeking a position with a primary focus on job dedication, meeting and exceeding goals, creativity, the ability to follow through, and most importantly bringing out the best in people. I look forward to working with a company that promotes quality products that I can believe in.

EXPERIENCE:

10/2008-Present AlliedBarton Services, Boston MA

DISTRICT MANGER/REGIONAL SAFETY CHAMPION

Achieve targeted business objectives in various vertical markets (Hospitality, Commercial Real Estate, Industrial, and Residential) for the security operation of a large district (18,000 HPW) including but not limited to: revenue, client satisfaction, client contracts, non-billed overtime, safety and fitness, emergency response procedures, technology, internal quality assurance and performance management.

Ensure company and Union principles and procedures for personnel recruitment, retention, selection and employee relations are adhered to regarding managed accounts. Ensure all staff receives proper training commensurate with job responsibilities and documentation of training is completed. Motivate and teach Security Officers, Supervisors and Account Managers to properly prepare and submit appropriate reports. Ensure proper post orders/procedural manuals are prepared and presented to the client for review and approval. Oversee and manage administrative and operational functions including payroll, scheduling, recruiting/selection, training, etc. for each account. Coach, counsel, engage and develop personnel. Maintain confidentiality of all information and data, keep records, and communicate appropriate feedback, and prepare accurate and timely reports as required

10/2002-10/2008 TD Banknorth, Framingham MA

REGIONAL SECURITY OFFICER/ASSISTANT VICE PRESIDENT

Responsible for protecting the human, physical and financial assets of TD Banknorth, consistent with the Corporate Security Department policies, procedures and objectives. Assist in development and management of said procedures. Examine all incidents of internal and external fraud committed against the bank. Serve as a liaison for law enforcement regarding criminal issues and advises on civil issues from legal counsel. Facilitate security-training programs for various departments of the bank and assist management in training of new Corporate Security personnel. Coordinate budget for region regarding physical security needs including managing contract negotiations and new branch installations. Respond to all emergencies as assigned.

04/1999 – 10/2002 USTrust/Citizens Bank, Boston, MA

FRAUD INVESTIGATOR/ASSISTANT VICE PRESIDENT

Investigate all suspicious activity including all incidents of internal and external fraud committed against the bank, prepare cases for further prosecution, and arrange confidential reports for senior management. Facilitate security-training programs for various departments of the bank and assist management in training of new Corporate Security personnel. Act as a liaison for law enforcement regarding criminal issues and advise on civil issues from legal counsel. Testify on behalf of the bank on both Federal and State litigation.

05/1998 – 04/1999 USTrust, Cambridge, MA

SALES AND SERVICE REPRESENTATIVE

Provided sales and service to the bank's business and retail customer base as well as promoted and sold bank products to prospective customers. Responsibilities included answering customer questions, researching account issues and maintaining a thorough knowledge of bank procedures.

04/1995 – 12/1996 Medford Police Department, Medford, MA
POLICE OFFICER
Assigned as a law enforcement officer in a mid-size community environment.

10/1994 – 03/1995 Maristhill Nursing Home, Waltham, MA
ASSISTANT DIRECTOR OF RECREATIONAL THERAPY
Scheduled and coordinated activities and social programs for 150 residents of a geriatric, long term care facility. Contacted and arranged media coverage, visits from local officials and various social agencies for the providing of services to the residents. Provided health care programs and needs assessments. Provided marketing assistance, prepared confidential files and records, trained new employees and advised executive management on patient affairs.

EDUCATION: University of Massachusetts, Boston, MA
Fisher Junior College, Boston, MA
Becker College
Cambridge Rindge and Latin High School, Cambridge, MA

ASSOCIATIONS/CERTIFICATIONS:

2005 MCJTC Police Academy Training, United States Army National Guard-MA, Worcester County Check Fraud Association, NEFIA, Boston Clearing House Check Fraud Subcommittee, ASIS-Former Education Chair-2005-2007, ACFE, MBA, IAFCI, JADE (Asian Law Enforcement Association), Merrimack Valley Financial Crime Network-Current President, NEMLEC, USPIS Task Force, BOSNET, Reid Technique (advanced course 2/28/2002), Certified Security Management (MA Bankers Assoc.), Federal Bureau of Investigation Exceptional Service Award.

MWRA
POSITION DESCRIPTION

POSITION: Security Services Administrator

DIVISION:

DEPARTMENT: Office of Emergency Preparedness

BASIC PURPOSE:

Oversees and coordinates MWRA physical security systems and access control procedures to ensure operations continuity and to ensure the safety and security of personnel, property and equipment. Oversees 24/7 intrusion alarm monitoring by security guard and responds to security incidents.

SUPERVISION RECEIVED:

Reports to the Deputy Director, Security and Emergency Preparedness.

SUPERVISION EXERCISED:

Exercises supervision of guard and maintenance contractor's staff and contract resources as needed.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Maintains access control plans for MWRA facilities including implementation of electronic security and key control strategies. Coordinates with Operations and Procurement to acquire, install and maintain security equipment. Assists in developing access control plans as needed.

- Develops, updates and administers operating/maintenance standards, policies and standard operating procedures (SOPs) for security, locks and key control, intrusion and motion detection devices, and other systems and activities relating to facility access.

- Develops and oversees maintenance contracts for electronic security equipment. Serves as the liaison to various site and facility supervisors regarding proper maintenance and operation of electronic security equipment.

- Reviews performance of electronic security systems and the need for updating. Oversees procurement and installation of updated electronic security systems.

- Working with Procurement, manages the procurement of and administers contracts for

private security personnel and oversees the activities of private security contractors.

- Responds to security incidents, documents the occurrence, and recommends corrective measures. Assists in conducting confidential investigations.

- Participates in risk assessments and evaluates alternatives for mitigating vulnerabilities including physical hardening improvements, use of technology, and changes in policies and procedures.

- Serves as a member of the Task Force on Security and Emergency Preparedness. Approved for access to Security-Most Sensitive documents.

- Participates in developing an audit program to ensure that facilities meet MWRA security standards and provide a secure working environment.

- Oversees the tracking and implementation of recommendations for improvement based on the audit findings including monitoring performance against operational needs and requests.

- Assists managers and the Training Unit with development and delivery of security-related training.

- As directed by the Deputy Director, Security and Emergency Preparedness, communicates with outside public safety agencies regarding the MWRA's security operations.

- Retrieves and reviews documents as needed. Develops spreadsheets and compiles contract information. Prepares reports and communications necessary to carry out the activities of the Authority's security program.

- Develops and maintains tracking logs for security incidents and the access systems, audits the quality of the data and ensures its timely update.

SECONDARY DUTIES:

Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) A four (4) year college degree in business administration, public administration or a related field; and

(B) Four (4) to Seven (7) years of public sector administration required.

(C) Previous experience in contract administration preferred; previous experience in design, operation, maintenance or alarm response associated with physical security systems preferred.

(D) Understanding of physical security concepts and incident investigations as may be obtained in law enforcement, military or public safety related fields preferred.

(E) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Demonstrated knowledge and skills in structuring, analyzing and presenting data.

(B) Working knowledge of database management.

(C) Strong technical project management and organizational skills, previous experience with manual and automated document tracking is preferred.

(D) Demonstrated interpersonal, written and oral communication skills.

(E) Must be available to be part of 24/7 on-call rotation for security incident response.

SPECIAL REQUIREMENTS:

Valid Massachusetts Class D Motor Vehicle Operator's license required.

Participates in the Security on-call rotation.

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 are representative of those that must be met by an employee to successfully perform the essential functions of the 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 required to sit, 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 frequently be required to 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 and the ability to focus.

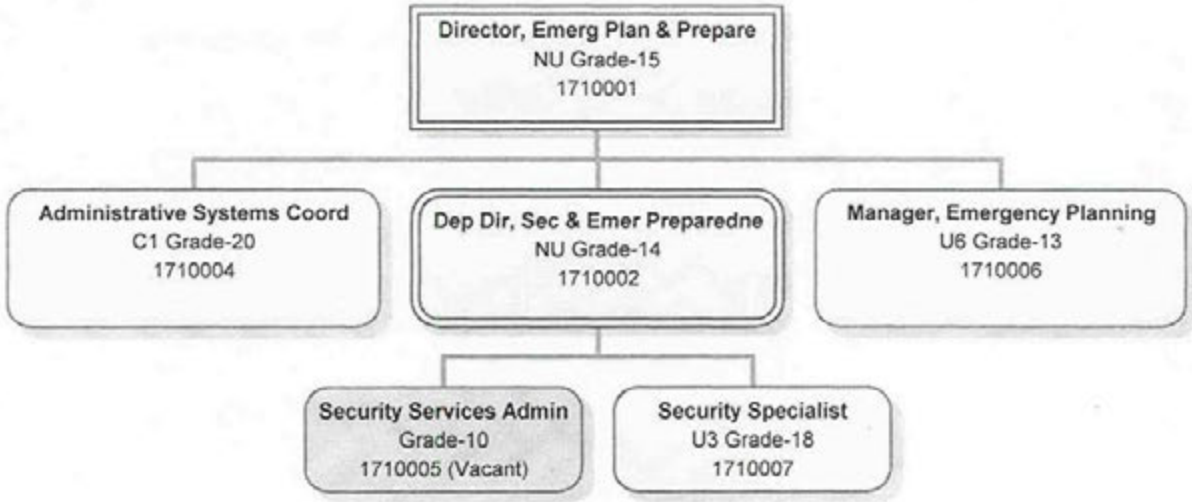
WORK ENVIRONMENT:

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 and at remote field sites and facilities that are industrial in nature.

The noise level in the work environment is a moderately quiet in office setting and frequently loud at remote facilities.

Office of Emergency Preparedness
November 2016



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: November 7, 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
Mahnaz Mehr, Network & System Manager
Preparer/Title

Michele S. Gillen
Director, Administration

RECOMMENDATION:

To approve the appointment of Mr. Seolito Rodriguez to the position of Network Administrator III (Unit 6, Grade 12), in the MIS Department, at the recommended salary of $98,167.50 on a date to be determined by the Executive Director.

DISCUSSION:

The Network Administrator III reports to the Network and Systems Manager in the MIS Department and is responsible for managing and supporting the Authority's wide area and local area networks, application support in a multiple platform environment that includes e-mail, internet access and Data Center backup applications as well as network connectivity for Maximo and Lawson. The position of Network Administrator III was vacated when the incumbent was promoted within the MIS organization. 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. Two external applicants were referred and selected for interviews. Upon completion of those interviews, Mr. Seolito Rodriguez was identified as the most qualified candidate to fill this position based on his combination of knowledge, skills, experience and education.

Mr. Rodriguez has more than 10 years of experience in the IT field. He is currently finishing a 4 month contract for the MWRA supporting the Exchange E-mail environment. His prior experience has been dedicated to Exchange, VMWare, Domain Naming Services and other related network applications required to ensure access to network services for the user community. Mr. Rodriguez has a Bachelor's degree in Computer Science from Kaplan University and an MBA from California Intercontinental University. Mr. Rodriguez also has several certifications including CompTIA A+, Cisco Certified Network Associate – CCNA, CompTIA Network+, Microsoft Certified Systems Administrator MCSA (Windows Server 2012

R2), Microsoft Certified Solutions Associate – MCSA: Office 365, VMware Certified Professional - VCP5.5, ITIL Foundation Certificate in IT Service Management

BUDGET/FISCAL IMPACT:

There are sufficient funds in the MIS Department FY17 Current Expense Budget to fund this position.

ATTACHMENTS:

Resume for Mr. Rodriguez
Position Description
Organizational Chart

Seolito Rodríguez

Experienced Messaging Engineer

Professional Profile:

- Demonstrated experience in the planning, deploying, troubleshooting and implementation efforts in complex enterprise environments using Microsoft Windows, Exchange, Office 365, SharePoint, Lync / Skype for Business, and other related technologies.
- A highly motivated individual with 16+ years of experience in different professional environments and company cultures.
- A team-centered, customer-driven, growth-oriented, and quality-focused professional dedicated to producing high quality services with the ability to prioritize work load with efficiency and effectiveness.

Professional Experience:

Massachusetts Water Resources Authority – MWRA
July 2016 – Present

Sr. Networking / Messaging Engineer

My responsibilities as part of the MIS team include, but are not limited to:

- Provide high quality email services within agreed SLA for MWRA Customers
- Contribute to the continual email service improvement processes
- Manage, support and troubleshoot all aspects of the authorities messaging solution including several Exchange Server 2010 systems and NetScaler load balancers
- Provide support and troubleshoot for Cisco IronPort E-mail security gateway
- Provide support, management and troubleshoot Mobile Devices and Active Sync
- Assist with planning and deployment of Exchange 2016 upgrade.
- Manage and support all aspects of the MIS infrastructure, including Active Directory, DNS, ADFS and Windows Operating Systems
- Provide support for Storage solutions, hardware devices and Virtualization (VMware)
- Assist with implementation of new backup technologies, ranging from configuration and set up to implementation, and support
- Provide and maintain technical and project documentation and training.

Fresenius Medical Care
Contractor
January 2016 – July 2016

Sr. Systems Messaging Engineer

Responsibilities as a senior support engineer in the messaging team:

- Manage and Support Cloud Identities by Using DirSync
- Manage and Support Federated Identities Using ADFS
- Monitor and Troubleshoot Office 365 Availability and Usage
- Manage Users, Groups, and Security with PowerShell
- Manage, support, and troubleshoot Office 365: Exchange Online, SharePoint Online, Skype for Business, OneDrive for Business, Yammer, Office ProPlus 2013 / 2016, and other related technologies
- Manage, Support and troubleshoot messaging related technologies such as Active Directory, Certificate Services, DNS, DHCP and other technologies.
- Assist and Support the Management of Clients and end-user devices
- Provision SharePoint Online Site Collections
- Configure Exchange, SharePoint, and Skype for Business Online for end users
- Manage, Configure, and Troubleshoot Security and Compliance for Office 365

Zensar Technologies, INC.
10/2015 – 12/2015
Contractor

Sr. Systems Administrator – Exchange/Lync

Team lead for a large, global, and complex messaging environment with responsibilities in the administration, management, and support of a number of messaging related services, processes, and technologies, such as

- Microsoft Exchange 2010 and 2013
- Lync / Skype for Business
- Blackberry Enterprise 10
- Good Mobile Device Management
- F5 Hardware Load Balancer
- Citrix NetScaler
- RightFax Enterprise
- Microsoft Hyper-V
- AirWatch

OSRAM Sylvania
8/2012 – 10/2015

Systems Specialist – Engineering

Responsible for the North and South America Region for a large Exchange environment with 10 Exchange servers and more than 20, 000 mailboxes. My function included the planning, deployment, management, and troubleshooting of a number of technologies:

- Acted as the project lead for the upgrade of 323 Windows 2003 Servers to Windows 2008 / 2012 in Several Countries
- Acted as the project lead for the North America region for the planning, designing, implementation, and support of the Lync 2013 environment
- Assisted in the design, implementation, and Migration of Exchange 2007 to Exchange 2013 and Office 365
- Automated common Exchange and Lync tasks with PowerShell.
- Managed BlackBerry Enterprise Servers 5 and 10
- Managed and configured Websense Cloud Mail Security
- Managed and Configured EMC SourceOne Email Archiving and Compliance
- Installed, managed and configured EMC Networker Backup for Exchange and SharePoint
- Installed and configured Microsoft Operations Manager 2007 and 2012 R2
- Installed, managed, and configured Windows Server 2003, 2008, and 2012R2
- Managed and configured DHCP, DNS, TCP/IP, IIS, FTP, Group Policy
- Designed, deployed, and managed VMware ESXi 5 and Microsoft Hyper – V

MetraTech Corp., Waltham, MA
2005 – 2012

Sr. Systems Administrator

Helped in the planning, implementation, and maintenance of a stable technical infrastructure by:

- Producing a well-designed, highly resilient, flexible, and cost effective messaging environment that included Exchange 2007, Exchange 2010, SharePoint 2007, Office Communicator 2007 R2
- Performed preventive maintenance and upgrades
- Managed and Supported Active Directory, DNS, DHCP, IIS, FTP, WSUS and Group Policy Objects
- Planned, Designed, Implemented Microsoft Hyper-V and VMware ESX 4 and ESXi 5
- Monitor email services to correct problems and ensure agreed SLA
- Produce relevant systems documentation for installations and configurations
- Provide timely and effective support for servers, work stations and Infrastructure during business hours as well as after-hours, as needed.
- Managed and Implemented Windows 7, Windows Server 2008 Operating Systems
- Assisted in management, backups, and restore of SQL 2008

- Installed, configured, and managed both HP and Dell Servers
- Deployed, configured, and managed Symantec Antivirus

Education

- Master of Business Administration – MBA in Project and Quality Management at California Intercontinental University (Graduated August 2016)
- Bachelor of Science in Information Technology - Network Administration, Kaplan University Online
- AA in Computer Science, Adrian College, Adrian, MI. 49221

Technical Certifications:

- CompTIA A+
- CompTIA Network+
- Cisco Certified Network Associate – CCNA
- Microsoft Certified Systems Engineer – MCSE (Windows 2003)
- Microsoft Certified Systems Administrator MCSA (Windows Server 2008)
- Microsoft Certified Systems Administrator MCSA (Windows Server 2012 R2)
- Microsoft Certified Solutions Associate – MCSA: Office 365
- VMware Certified Professional - VCP5.5
- ITIL Foundation Certificate in IT Service Management

Languages:

- English: Fluently
- Spanish: Native Language

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.; and

(B) Seven (7) to nine (9) years of experience implementing and maintaining a large-scale enterprise network environment is required; or

(C) Any equivalent combination of education and experience.

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 (Websence 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.

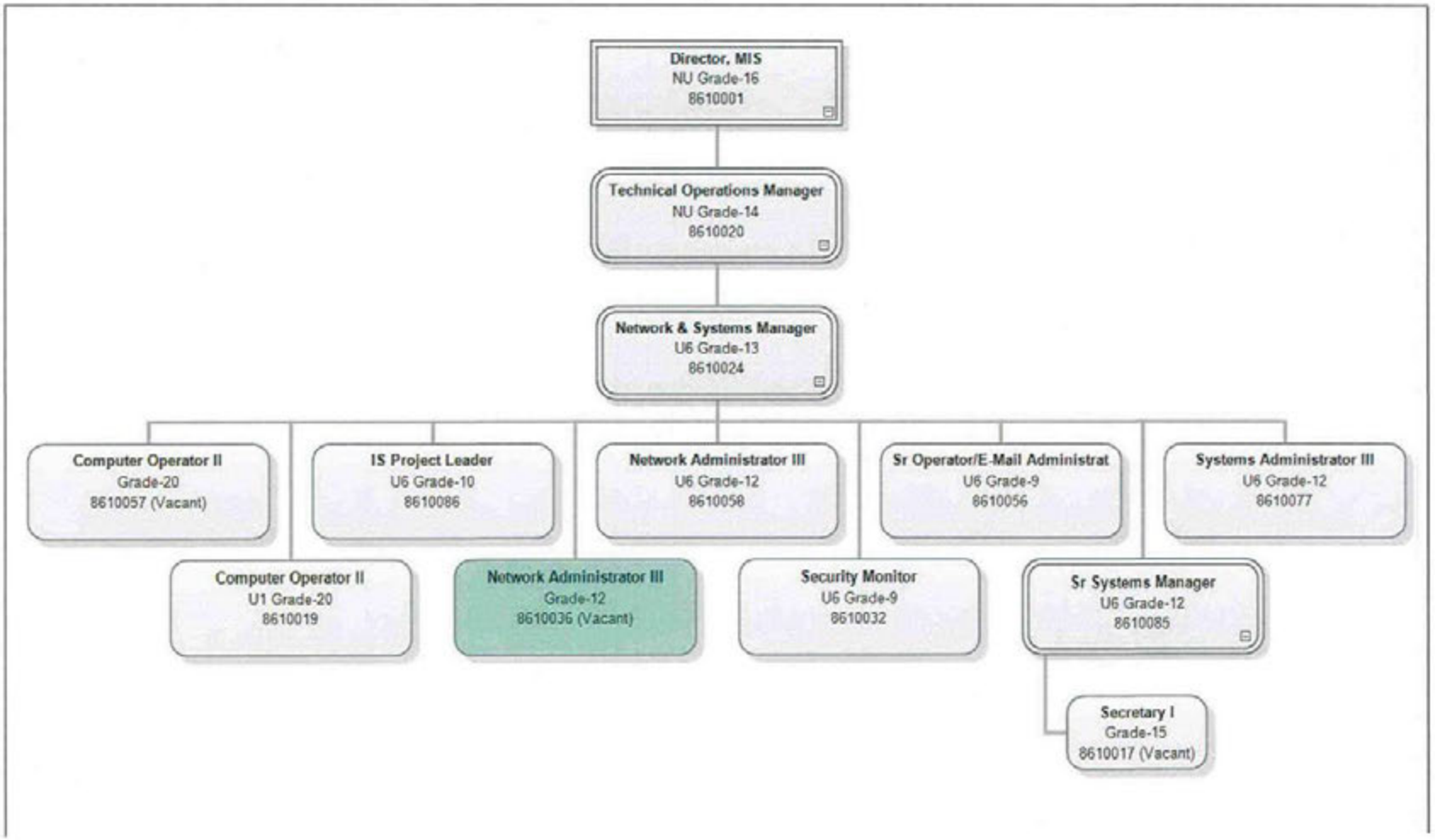
WORK ENVIRONMENT:

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.

Administration Division
MIS Department
Network & Systems Services



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
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BOARD OF DIRECTORS' MEETING

to be held on

Wednesday, November 16, 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. Approval of the Seventy-Fourth Supplemental Bond Resolution (ref. AF&A B.1)
2. Emergency Water Supply Agreement with Cherry Valley and Rochdale Water District (ref. W B.1)
3. PCR Amendments – November 2016 (ref. P&C A.1)
4. Appointment of Security Services Administrator, Office of Emergency Preparedness (ref. P&C A.2)
5. Appointment of Network Administrator III, MIS (ref. P&C A.3)

B. **Contract Awards**

1. Security Equipment Maintenance and Repair Services: Viscom Systems, Inc., Contract EXE-038 (ref. AF&A C.1)

B. **Contract Awards** (cont'd.)

2. Harbor and Outfall Monitoring 2017-2020: Water Column Monitoring, Battelle Memorial Institute, Contract OP-326A; and Benthic, Fish and Shellfish Monitoring, Normandeau Associates, Inc., Contract OP-326B (ref. WW B.1)

3. Cooperative Research Project with Center for Coastal Studies in Provincetown to Conduct Water Quality Monitoring in Cape Cod Bay: Contract S556 (ref. WW B.2)

4. Supply and Delivery of Ferrous Chloride to the Deer Island Treatment Plant: Kemira Water Solutions, Inc., Bid WRA-4291 (ref. WW B.3)

5. Commonwealth Avenue Pump Station Improvements – Design, Engineering Services During Construction and Resident Engineering/ Inspection Services: Black & Veatch Corp., Contract 7523 (ref. W C.1)

6. Northern Intermediate High Sections 110 and 112 – Stoneham and Wakefield: Albanese D&S, Inc., Contract 7478 (ref. W C.2)

7. Section 80 Repair - Weston: P. Caliacco Corporation, Contract 7532 (ref. W C.3)

8. Chicopee Valley Aqueduct Intake Traveling Screen Replacement: W. M. Schultz Construction, Inc., Contract 7488 (ref. W C.4)

C. **Contract Amendments/Change Orders**

1. Wachusett Aqueduct Pumping Station Design, Construction Administration and Resident Inspection Services: Stantec Consulting Services, Inc., Contract 7156, Amendment 3 (ref. W D.1) (materials to follow)

V. CORRESPONDENCE TO THE BOARD

VI. OTHER BUSINESS

VII. EXECUTIVE SESSION

A. Litigation:

1. Harbor Cable Update

VIII. ADJOURNMENT

MASSACHUSETTS WATER RESOURCES AUTHORITY

Special Meeting of the Board of Directors

October 6, 2016

A special meeting of the Board of Directors of the Massachusetts Water Resources Authority was held on October 6, 2016 at the John J. Carroll Water Treatment Plant in Marlborough. The full Board was in attendance: Chairman Beaton presiding, Ms. Wolowicz, Messrs. Blackmon, Carroll, Cotter, Flanagan, Foti, Pappastergion, Peña, Vitale and Walsh. 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, David Coppes, Director of Waterworks, Valerie Moran, Manager, Operations Engineering, Mark Johnson, Director, Metropolitan Operations, Louise Miller, Budget Manager, Stephen Estes-Smargiassi, Director, Planning and Sustainability, Frederick Brandon, Assistant Director, Engineering, and Bonnie Hale, Assistant Secretary. The meeting was called to order at 8:10 a.m.

As part of the introduction and review of the history of Metropolitan Tunnel System, Mr. Laskey stated that the intent of the meeting was not to make a decision on how to achieve redundancy, but rather to lay the groundwork for future decision-making.

Various staff members gave presentations and discussed with the Board of Directors the following aspects of Metropolitan Tunnel Redundancy planning (presentation materials on file with the records of the meeting):

- Status Of The Existing Transmission System Facilities
- Tunnel System Shutdown Impacts
- Strategic Goal For Redundancy Improvements
- Evaluation Of Alternatives
- Financial Considerations
- Staff Preferred Alternative.

Mr. Laskey discussed with the Board the next steps in the decision making process and suggested that the topic be listed on the agenda for each monthly meeting. Staff would like to move forward with interim improvements described in the presentation and, as soon as the Board is comfortable, make a decision on the preferred alternative. The general sense of the Board was that it was leaning towards not spending any more time evaluating the extremely disruptive surface alternatives. All present agreed on the need to work closely with the administration, the Advisory Board, and officials in member communities on this major, generational initiative.

The meeting adjourned at 11:15 a.m.

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Board of Directors

October 12, 2016

A meeting of the Board of Directors of the Massachusetts Water Resources Authority was held on October 12, 2016 at the Authority headquarters in Charlestown. Chairman Beaton presided. Present from the Board were Ms. Wolowicz and Messrs. Blackmon, Carroll, Cotter, Flanagan, Foti, Pappastergion, Peña, Vitale and Walsh. 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 1:20 p.m.

APPROVAL OF MINUTES

Upon a motion duly made and seconded, it was

Voted to approve the minutes of the Board of Directors' meeting of September 14, 2016, as presented and filed with the records of the meeting.

REPORT OF THE CHAIR

Chairman Beaton reported on an event held in Sterling for the announcement of an electric grid storage facility to provide the Town with emergency back-up power. This initiative is related to Governor Baker's recent signing of an Executive Order on Climate Change. A statewide study of vulnerability to climate change is being undertaken, and MWRA will be included in that study.

REPORT OF THE EXECUTIVE DIRECTOR

Mr. Laskey reported on various matters, including the completion of a pipeline project on Webster Avenue in Somerville and an event held in Needham for the opening of a public access trail along the Sudbury Aqueduct. There was discussion following up on the recent special Board meeting on Metropolitan Tunnel Redundancy, including an MWRA Advisory Board meeting on the subject scheduled for December 8, and suggestions on other elected officials and organizations that should be made aware of the redundancy alternatives under consideration.

APPROVALS

Delegation of Authority to Execute a Contract for the Purchase and Supply of Electric Power for MWRA's Profile Accounts

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to execute Contract OP-337 for the purchase and supply of electric power for MWRA's Profile accounts, with the lowest responsive and responsible bidder, for a period and pricing structure selected, as determined by staff to be in MWRA's best interest, and for a contract term not to exceed 38-months. This delegation of authority is necessary because MWRA will be required to notify the selected bidder within a few hours of bid submittal to lock-in the bid prices in a constantly changing market.

Emergency Water Supply Agreement with the Town of Burlington

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to execute a six-month Emergency Water Supply Agreement with the Town of Burlington, substantially in the form presented and filed with the records of the meeting.

PCR Amendment – October 2016

Upon a motion duly made and seconded, it was

Voted to approve an amendment to the Position Control Register, as presented and filed with the records of the meeting.

Appointment of Area Manager, Deer Island Treatment Plant

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. William J. Carter to the position of Area Manager (Unit 6, Grade12), at an annual salary of $113,341 to be effective on the date designated by the Executive Director.

Appointment of Program Manager, Process Monitoring, Deer Island Treatment Plant

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Ms. Tracy Survilas to the position of Program Manager, Process Monitoring (Unit 9, Grade 29), at an annual salary of $106,994.68 to be effective on the date designated by the Executive Director.

Appointment of Deputy Contracts Manager, Procurement

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Ms. Yvonne vanOssenbruggen-Hart to the position of Deputy Contracts Manager, Administration Division (Unit 6, Grade 13) at an annual salary of $118,936.84.

CONTRACT AWARDS

Automated Vehicle Locator Tracking System: Networkfleet, Inc. Contract A606

Upon a motion duly made and seconded, it was

Voted to approve the recommendation of the Consultant Selection Committee to select Networkfleet, Inc., to provide an Automated Vehicle Locator Tracking

System, conditioned upon agreement on acceptable final contract terms, and to authorize the Executive Director, on behalf of the Authority, to execute Contract A606 with Networkfleet, Inc. in an amount not to exceed $427,490 for a contract term of three years from the Notice to Proceed and with an option to renew for two additional one year periods, each subject to further Board approval.

Supply and Delivery of Sodium Hypochlorite to the Deer Island Treatment Plant: Borden & Remington Corp., Bid WRA-4269

Upon a motion duly made and seconded, it was

Voted to approve the award of Purchase Order Contract WRA-4269 for the supply and delivery of sodium hypochlorite to the Deer Island Treatment Plant to the lowest responsive bidder, Borden & Remington Corporation, and to authorize the Executive Director, on behalf of the Authority, to execute and deliver said purchase order contract in an amount not to exceed $1,208,337.39 for a period of one year, from November 17, 2016 through November 16, 2017.

CONTRACT AMENDMENTS/CHANGE ORDERS

Dental Insurance: Delta Dental of Massachusetts , Contract A591, Amendment 3

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to approve Amendment 3 to exercise the third option to renew and increase the amount of Contract A591 with Delta Dental of Massachusetts (Dental Insurance) by $391,000, and to extend the term by twelve months from January 1, 2017 to December 31, 2017, for a total contract term of 48 months.

Watertown Section Rehabilitation, Waltham and Watertown: J. D'Amico, Inc., Contract 7222, Change Order 6

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to approve Change Order 6 to increase the amount of Contract 7222 with J. D'Amico, Inc., Watertown Section Rehabilitation, Waltham and Watertown, in an amount not to exceed $150,000, with no increase in contract term.

Quabbin Power & Security Improvement: Ewing Electrical Co., Inc. Contract 7338, Change Order 2

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to approve Change Order 2 to increase the amount of Contract 7338 with Ewing Electrical Company, Inc., Quabbin Power and Security Improvements, in an amount not to exceed $30,000, with no increase in contract term; and to authorize the Executive Director to approve additional change orders as may be needed to Contract 7338 in amounts not to exceed the aggregate of $250,000, in accordance with the Management Policies and Procedures of the Board of Directors.

EXECUTIVE SESSION

It was moved to enter executive session to discuss real estate and litigation.

Upon a motion duly made and seconded, it was, upon a roll call vote in which the members were recorded as follows:

Yes	No	Abstain
Blackmon		
Carroll		
Cotter		
Flanagan		
Foti		
Pappastergion		
Peña		
Vitale		
Walsh		
Wolowicz		
Beaton		

Voted to enter executive session for the purpose of discussing strategy with respect to litigation and to consider the purchase, exchange, lease or value of real property, in that such discussion in open session may have a detrimental effect on the litigating and negotiating positions 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 2:00 p.m. and adjourned.