



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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COMMITTEE OF THE WHOLE

HEARINGS ON THE DRAFT FINAL FY19 CAPITAL IMPROVEMENT PROGRAM AND CURRENT EXPENSE BUDGET

to be held on

Wednesday, May 30, 2018

Chair: M. Beaton
Vice-Chair: J. Carroll
Secretary: A. Pappastergion
Board Members:
A. Blackmon
K. Cotter
P. Flanagan
J. Foti
B. Peña
H. Vitale
J. Walsh
J. Wolowicz

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

Time: 9:00 a.m.

AGENDA

- Advisory Board Integrated Comments and Recommendations on the MWRA's Proposed FY2019 CIP and CEB
- MWRA's FY2019 Draft Final Budget Hearings Presentation



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ADMINISTRATION, FINANCE & AUDIT COMMITTEE MEETING

to be held on

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

Wednesday, May 30, 2018

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

Time: Immediately following Budget Hearings

AGENDA

A. Information

1. Delegated Authority Report — April 2018
2. FY18 Financial Update and Summary as of April 2018
3. FY18 Third Quarter Orange Notebook

B. Approvals

1. Lease Extension with Springfield Water and Sewer Commission
2. Bond Defeasance of Future Debt Service
3. MWRA FY19 Insurance Program Renewal
4. Delegation of Authority to Executive Director to Execute Contract for the Purchase and Supply of Electric Power for the Deer Island Treatment Plant

C. Contract Awards

1. Main Line Adjustment Project, Fore River Railroad: J. F. White Contracting Co., Contract FRR32

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the

Administration, Finance and Audit Committee

April 18, 2018

A meeting of the Administration, Finance and Audit Committee was held on April 18, 2018 at the Authority headquarters in Charlestown. Chair Vitale presided. Present from the Board were Messrs. Blackmon, Carroll, Flanagan, Pappastergion, Peña, Walsh and Ms. Wolowicz. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Thomas Durkin, Carolyn Fiore, Michele Gillen, Michael McDonald, Russell Murray, John Nelson, Kathy Soni, Paul Whelan and Kristin MacDougall. The meeting was called to order at 10:42 a.m.

Information

There was general discussion and brief questions and answers on the following informational items:

- Delegated Authority Report – March 2018
- FY2018 Financial Update and Summary as of March 2018.

Contract Awards

* Technical Assistance Consulting Services – Hazardous Materials, Geosphere Environmental Management, Inc., Contract 605TA; and Green Seal Environmental, Inc., Contract 606TA

Staff summarized the contract for as-needed hazardous materials assessment services. There was general discussion and questions and answers. The Committee recommended approval of the contract award (ref. agenda item B.1.)

* Renewable and Alternative Energy Portfolio Services, Next Grid Markets, LLC, Contract RPS-68

Staff summarized the contract to provide a mechanism for MWRA to sell Renewable Energy Certificates created by green power generators. There was general discussion and questions and answers. The Committee recommended approval of the contract award (ref. agenda item B.2.)

* Maintenance and Support of the Integrated Financial, Procurement and Human Resources/Payroll Management System: Infor Global Solutions.

* Approved as recommended at the April 18, 2018 Board of Directors meeting.

Staff summarized the contract to provide maintenance and technical support for MWRA's Infor/Lawson system. There was general discussion and questions and answers.

(Mr. Carroll left the meeting.)

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

The meeting adjourned at 11:00 a.m.

* Approved as recommended at the April 18, 2018 Board of Directors meeting.

STAFF SUMMARY


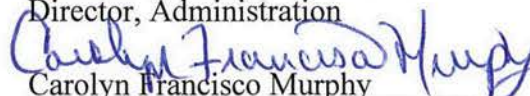
TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 30, 2018
SUBJECT: Delegated Authority Report – April 2018



COMMITTEE: Administration, Finance & Audit

INFORMATION
 VOTE

Linda D'Addario, Admin. Systems Coordinator
Barbara Aylward, Administrator A & F
Preparer/Title


Michele S. Gillen
Director, Administration

Carolyn Francisco Murphy
Director of Procurement

RECOMMENDATION:

For information only. Attached is a listing of actions taken by the Executive Director under delegated authority for the period April 1 – 30, 2018.

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.

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.

Amendments:

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

Amendments to the Position Control Register:

Amendments which result only in a change in cost center.

BUDGET/FISCAL IMPACT:

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

CONSTRUCTION/PROFESSIONAL SERVICES DELEGATED AUTHORITY ITEMS APRIL 1 - 30, 2018


NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMEND/CO	COMPANY	FINANCIAL IMPACT
C-1.	04/03/18	NORTHERN INTERMEDIATE HIGH SECTION 110 AND 112 - STONEHAM AND WAKEFIELD PROVIDE CONSULTATION SERVICES AND INCREASE RODENT CONTROL MEASURES AS DIRECTED BY STONEHAM BOARD OF HEALTH; FURNISH AND INSTALL CONCRETE COLLARS AND ADDITIONAL STEEL BANDING STRAPS; REVISE CONCRETE THRUST BLOCK; FURNISH AND INSTALL ADDITIONAL DUCTILE PIPE.	7478	7	ALBANESE D&S, INC.	\$83,034.59
C-2.	04/05/18	HEADWORKS DUCT CLEANING AND SPOT REPAIRS FURNISH AND INSTALL A TEMPORARY EXHAUST DUCT MODIFICATION SYSTEM; FURNISH AND INSTALL A TEMPORARY SUPPLY DUCT MODIFICATION; EXTEND CONTRACT TERM BY 118 CALENDAR DAYS.	OP-336	1	MERRIMACK VALLEY CONTRACTORS, INC.	\$49,084.58
C-3.	04/05/18	KEY PROJECT WORK CREW SERVICES AT DEER ISLAND AND NUT ISLAND AWARD OF CONTRACT TO A NON-PROFIT, DEPARTMENT OF CHILDREN AND FAMILIES APPROVED, ORGANIZATION TO PERFORM ADDITIONAL LANDSCAPING AND PUBLIC ACCESS AREA CLEANING SERVICES AT DEER ISLAND AND NUT ISLAND FOR A TERM OF SEVEN MONTHS.	OP-369	AWARD	ROCA, INC.	\$50,000.00
C-4.	04/05/18	OVERHEAD DOOR MAINTENANCE SERVICES, DEER ISLAND TREATMENT PLANT AWARD OF CONTRACT TO LOWEST RESPONSIVE BIDDER FOR OVERHEAD DOOR MAINTENANCE SERVICES AT DEER ISLAND PLANT FOR A TERM OF 730 CALENDAR DAYS.	5575	AWARD	SAFEWAY OVERHEAD CRANE SERVICE, INC.	\$121,918.00
C-5.	04/19/18	13.8kV ELECTRICAL SYSTEMS MAINTENANCE FINAL BALANCING CHANGE ORDER TO DECREASE THE FOLLOWING BID ITEMS TO REFLECT ACTUAL QUANTITIES USED: MAINTENANCE/REPAIR SERVICES, REPLACEMENT PARTS AND MARK-UP AND FACTORY AUTHORIZED SERVICE REPRESENTATIVE.	OP-294	2	INFRA-RED BUILDING AND POWER SERVICE, INC.	(\$25,181.74)
C-6.	04/20/18	THERMAL AND HYDRO POWER PLANT MAINTENANCE, DEER ISLAND TREATMENT PLANT INCREASE ALLOWANCE FOR FACTORY SERVICE REPRESENTATIVE SERVICES; EXTEND CONTRACT TERM BY 120 CALENDAR DAYS.	5551	3	IPC LYDON, LLC	\$30,000.00
C-7.	04/26/18	BOILER AND WATER HEATER SERVICE FINAL BALANCING CHANGE ORDER TO DECREASE THE FOLLOWING BID ITEMS TO REFLECT ACTUAL QUANTITIES USED: PREVENTIVE MAINTENANCE SERVICES, NON-EMERGENCY AND EMERGENCY REPAIR SERVICES, MANUFACTURER'S AUTHORIZED REPRESENTATIVE SERVICES, WATER TREATMENT CHEMICALS AND GLYCOL, REPLACEMENT PARTS AND MARK-UP.	OP-278	3	COOLING & HEATING SPECIALISTS, INC.	(\$78,877.32)
C-8.	04/27/18	CATHODIC PROTECTION TESTING AND EVALUATION PROGRAM FINAL BALANCING CHANGE ORDER TO DECREASE THE FOLLOWING BID ITEMS TO REFLECT ACTUAL QUANTITIES USED: RE-INSPECTION AND RE-TESTING, REPLACEMENT PARTS AND ADDITIONAL TRAFFIC CONTROLS; DELETE PORTIONS OF SCOPE OF WORK NOT REQUIRED RELATING TO CATHODIC PROTECTION TEST STATIONS, POLICE DETAILS AND MONTHLY PROGRESS REPORTS; AND ADJUST CONTRACT PRICE TO DECREASE TIME AND MATERIALS TO PERFORM CHANGE ORDER NO. 1 WORK.	6438	3	ARK ENGINEERING & TECHNICAL SERVICES, INC.	(\$98,784.07)

PURCHASING DELEGATED AUTHORITY ITEMS APRIL 1 - 30, 2018



NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-1.	04/06/18	MICROSOFT ONBOARDING ACCELERATOR SERVICES AWARD OF A PURCHASE ORDER UNDER STATE CONTRACT #ITS58 TO THE LOWEST RESPONSIVE BIDDER FOR MICROSOFT ONBOARDING ACCELERATOR SERVICES TO ASSIST WITH MIGRATION AND DEPLOYMENT OF WINDOWS 10.	WRA-4489Q		CDW GOVERNMENT LLC	\$34,999.00
P-2	04/03/18	QUALITY ASSURANCE/QUALITY CONTROL DIVING SERVICES AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR QUALITY ASSURANCE/QUALITY CONTROL DIVING SERVICES FOR INVASIVE AQUATIC PLANT CONTROL CONTRACTS AT WACHUSETT RESERVOIR AND SUDBURY RESERVOIR.	WRA-4473		FATHOM RESOURCES, LLC	\$76,809.28
P-3.	04/03/18	INVASIVE PLANT MONITORING AND CONTROL AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR INVASIVE PLANT MONITORING AND CONTROL AT THE CHESTNUT HILL RESERVOIR.	WRA-4474		SOLITUDE LAKE MANAGEMENT, LLC	\$90,500.00
P-4	04/04/18	PRINTING SERVICES FOR MWRA ENVIRONMENTAL QUALITY REPORT AWARD OF A PURCHASE ORDER UNDER STATE CONTRACT OFF44 TO THE LOWEST RESPONSIVE BIDDER FOR PRINTING AND MAILING OF THE MWRA ENVIRONMENTAL QUALITY REPORT FOR MWRA'S SEWER SERVICE AREA COMMUNITIES.	WRA-4509Q		HANNAFORD & DUMAS COMMERCIAL PRINTERS	\$167,805.10
P-5	04/05/18	SUPPLY AND DELIVERY OF SODIUM HYDROXIDE AWARD OF A ONE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY AND DELIVERY OF SODIUM HYDROXIDE TO VARIOUS WASTEWATER LOCATIONS.	WRA-4510Q		BORDEN & REMINGTON CORPORATION	\$46,010.47
P-6	04/12/18	ANALYSIS OF ALGAL TOXINS AND ORGANIC COMPOUNDS AWARD OF A ONE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR ANALYSIS OF ALGAL TOXINS AND ORGANIC COMPOUNDS FOR THE DEPARTMENT OF LABORATORY SERVICES.	WRA-4496Q		BSA ENVIRONMENTAL SERVICES, INC.	\$32,480.00
P-7	04/12/18	LASER AND BELT ALIGNMENT TRAINING AND SUPPORT SERVICES AWARD OF A TWO-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER TO PROVIDE LASER AND BELT ALIGNMENT TRAINING AND SUPPORT SERVICES AT THE DEER ISLAND TREATMENT PLANT.	WRA-4485		ALIGNMENT SPECIALISTS, LLC	\$62,400.00
P-8	04/12/18	APPLICATION DEVELOPMENT TECHNICAL CONSULTANT AWARD OF A PURCHASE ORDER UNDER STATE CONTRACT #ITS63 TO THE LOWEST RESPONSIVE BIDDER FOR APPLICATION DEVELOPMENT TECHNICAL CONSULTANT SERVICES.	WRA-4500Q		MOTION RECRUITMENT PARTNERS, LLC	\$95,676.00
P-9	04/17/18	INVASIVE PLANT CONTROL AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR INVASIVE PLANT CONTROL AT THE WARE RIVER/SHAFT 8 INTAKE POOL.	WRA-4470Q		AQUALOGIC, INC.	\$28,300.00
P-10	04/20/18	BIODIESEL FUEL AMENDMENT NO. 1 TO PURCHASE ORDER UNDER STATE CONTRACT ENE40CAT2 FOR BIODIESEL FUEL FOR THE CHELSEA FACILITY.		1	DIESEL DIRECT, INC.	\$50,000.00
P-11	04/27/18	PURCHASE OF TWO 10-WHEEL DIESEL POWERED DUMP TRUCKS AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR TWO NEW 10-WHEEL DIESEL POWERED DUMP TRUCKS.	WRA-4487		MINUTEMAN TRUCKS, INC.	\$296,403.16
P-12	04/26/18	PURCHASE OF TRENCH BOX MATERIALS AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR TRENCH BOX MATERIALS FOR THE WATER PIPELINE SECTION.	WRA-4480Q		UNITED RENTALS NORTH AMERICA, INC.	\$30,101.22
P-13	04/26/18	PURCHASE OF HEWLETT PACKARD ELITEDESK DESKTOPS AWARD OF A PURCHASE ORDER UNDER STATE CONTRACT #ITC47 TO THE LOWEST RESPONSIVE BIDDER FOR 50 HEWLETT PACKARD ELITEDESK DESKTOP COMPUTERS.	WRA-4490Q		FIRSTWORLD USA INC.	\$39,673.50
P-14	04/26/18	PURCHASE OF MICROSOFT WINDOWS 10 ENTERPRISE LICENSES AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR 1,500 MICROSOFT WINDOWS 10 ENTERPRISE LICENSES WITH ONE-YEAR OF MAINTENANCE.	WRA-4478		SHI INTERNATIONAL CORPORATION	\$61,650.00
P-15	04/26/18	DIVER ASSISTED SUCTION HARVESTING AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR DIVER ASSISTED SUCTION HARVESTING OF INVASIVE AQUATIC PLANTS AT WACHUSETT RESERVOIR THOMAS BASIN, CARVILLE BASIN, QUINAPOXET BASIN AND COVES.	WRA-4472		AQUALOGIC, INC.	\$87,400.00
P-16	04/26/18	SUPPLY AND DELIVERY OF SODIUM HYDROXIDE AWARD OF TWO SEPARATE ONE-YEAR PURCHASE ORDERS TO THE LOWEST RESPONSIVE BIDDERS FOR THE SUPPLY AND DELIVERY OF SODIUM HYDROXIDE TO THE DEER ISLAND TREATMENT PLANT.	WRA-4506		UNIVAR USA, INC. BORDEN & REMINGTON CORPORATION	\$220,450.00 \$72,963.00
P-17	04/26/18	OVERHAUL 17 GRIT FACILITY ROLLER GATES AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER TO OVERHAUL 17 GRIT FACILITY ROLLER GATES FOR THE DEER ISLAND TREATMENT PLANT.	WRA-4492		CHASE G. ALLEN, INC.	\$239,627.00

P-18	04/26/18	PRINTING SERVICES FOR ANNUAL MWRA CONSUMER CONFIDENCE REPORT AMENDMENT NO. 2 TO PURCHASE ORDER FOR PRINTING AND MAILING SERVICES FOR THE MWRA CONSUMER CONFIDENCE REPORT TO EXERCISE A ONE-YEAR RENEWAL OPTION FOR THE PRINTING AND MAILING OF THE FY18 REPORT.	2	SHAWMUT PRINTING	\$243,204.65
P-19	04/26/18	ORACLE PROCESSOR LICENSES MAINTENANCE AND SUPPORT AWARD OF A ONE-YEAR PURCHASE ORDER UNDER STATE CONTRACT #ITS19 FOR ORACLE PROCESSOR LICENSES MAINTENANCE AND SUPPORT.		ORACLE AMERICA, INC.	\$173,939.14
P-20	04/30/18	MAINTENANCE, TECHNICAL ASSISTANCE AND SUPPORT OF THE ARC GEOGRAPHIC INFORMATION SYSTEM AWARD OF A ONE-YEAR PURCHASE ORDER UNDER STATE CONTRACT #ITS65 FOR MAINTENANCE, TECHNICAL ASSISTANCE AND SUPPORT OF THE ARC GEOGRAPHIC INFORMATION SYSTEM.		ENVIRONMENTAL SYSTEMS RESEARCH INSTITUTE, INC.	\$49,950.00
P-21	04/30/18	SCADA SYSTEM PROGRAMMING AND CONFIGURATION AWARD OF A PURCHASE ORDER UNDER STATE CONTRACT #IT553 TO THE LOWEST RESPONSIVE BIDDER FOR SCADA PROGRAMMING AND CONFIGURATION SUPPORT FOR BOS019 AND FRAMINGHAM PUMP STATION.	WRA-4482Q	OVERTURE PARTNERS, LLC	\$151,295.42

STAFF SUMMARY

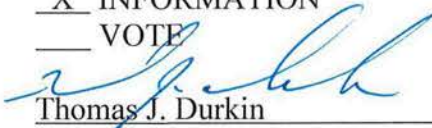
TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: May 30, 2018
SUBJECT: FY18 Financial Update and Summary Through April

COMMITTEE: Administration, Finance & Audit


Kathy Soni, Budget Director

Louise L. Miller, Budget Manager
Preparer/Title

INFORMATION

VOTE


Thomas J. Durkin
Director, Finance

RECOMMENDATION:

For information only. This staff summary provides the financial results and variance highlights for Fiscal Year 2018 through April, comparing actual spending to the budget.

DISCUSSION:

The total Year-to-Date variance for the FY18 CEB is \$12.0 million, due to lower direct expenses of \$5.9 million offset by higher indirect expenses of \$175,000, and higher revenue of \$6.3 million.

In April, MWRA set aside \$1.4 million in favorable Capital Finance variance into the Defeasance Account with the intention of using these funds to defease debt and provide rate relief in future years. Targeted defeasances are a critical component of the Authority's multi-year rate management strategy. As of April, the defeasance account balance is \$8.4 million. This favorable variance is the result of the lower than budgeted variable rates and timing of the SRF (State Revolving Funds) borrowing. Staff are requesting for Board approval at this meeting for the FY18 planned defeasance which will be built into the Final FY19 Budget.

The year-end favorable variance is projected at \$26.4 million, of which \$15.1 million is related to debt service. Beyond debt service savings, staff project a surplus of approximately \$11.3 million at year-end of which \$3.2 million would be from lower direct expenses, \$375,000 from lower Indirect Expenses, \$6.8 million from greater than budgeted revenues, and the receipt of \$0.9 million in Debt Service Assistance from the Commonwealth. The higher than budgeted revenue is related to a \$4.2 million receipt from the settlement between various State Attorneys General and Barclays PLC for attempting to manipulate the LIBOR market, and higher investment income of approximately \$2.0 million.

Total year-to-date variance for the FY18 CIP is \$4.4 million or 3.3% under budget.

FY18 Current Expense Budget

The CEB expense variances for Fiscal Year 2018 through April by major budget category were:

- Net Lower Direct Expenses of \$5.9 million, or 3.2% under budget. Spending was lower for Wages & Salaries, Maintenance, Fringe Benefits, Other Materials, Chemicals, Professional Services, Worker's Compensation, and Training and Meetings. This is offset by higher spending on Overtime, Utilities, and Other Services.
- Net Higher Indirect Expenses of \$175,000, or 0.6%, due to higher spending for Insurance offset by lower Watershed reimbursements and lower expenses for the existing HEEC cable.
- Debt spending is at budget level after transferring \$8.4 million to the defeasance account, representing the favorable year-to-date variance.

FY18 Budget and FY18 Actual Year-to-Date Variance by Expenditure Category
(in millions)

	FY18 Budget YTD	FY18 Actual YTD	\$ Variance	% Variance
Direct Expenses	\$183.5	\$177.6	-\$5.9	-3.2%
Indirect Expenses	\$28.5	\$28.7	\$0.2	0.6%
Capital Financing	\$371.3	\$371.3	\$0.0	0.0%
Total	\$583.3	\$577.6	-\$5.8	-1.0%

Totals may not add due to rounding

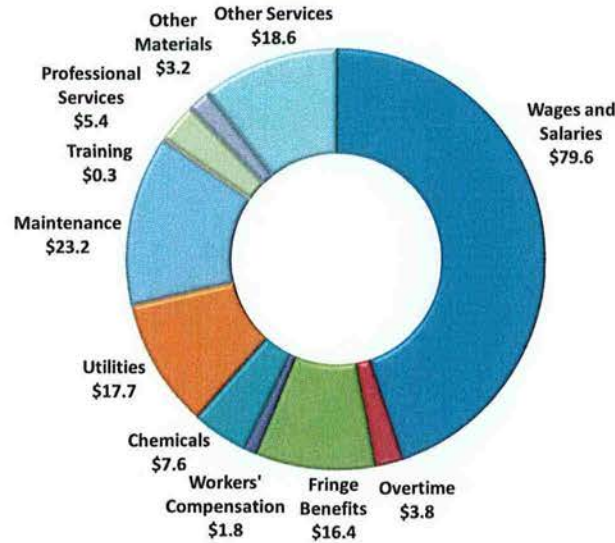
Year-to-date Revenues of \$621.8 million were \$6.3 million, or 1.0% over budget, reflecting a \$4.2 million receipt from the settlement between various State Attorneys General and Barclays PLC for attempting to manipulate the LIBOR market. LIBOR is a standard financial index used to set the cost of various variable-rate loans. Revenues were also over budget by \$1.5 million for favorable returns on investment income (average short-term rates were higher than budgeted: 1.45% vs.1.05%), \$234,000 for disposal of surplus material, \$228,000 for the final payment of a class action lawsuit settlement for derivative agreements, and \$131,000 for energy reimbursements. This is offset by lower than budgeted revenue of \$157,000 for the sale of RPS credits.

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

Direct Expenses

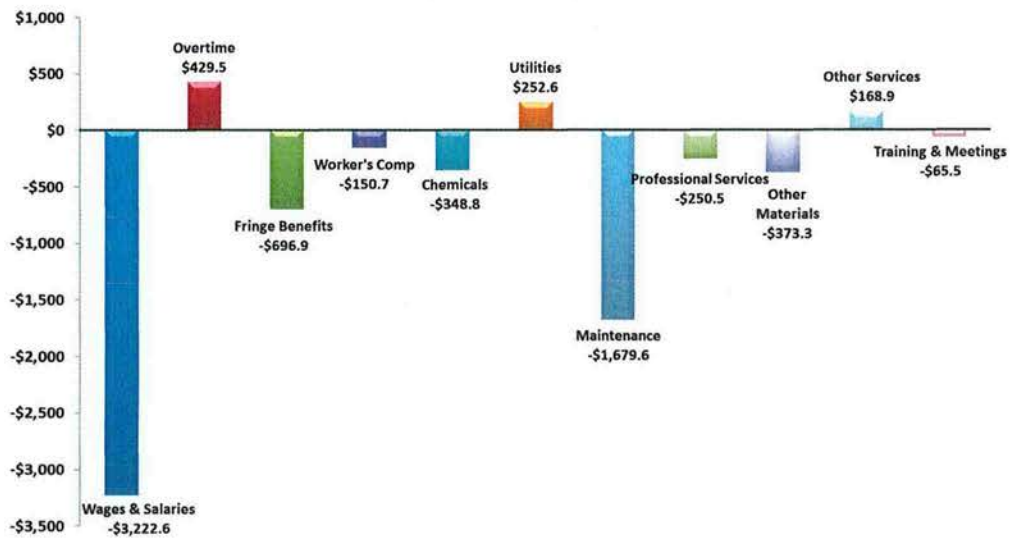
Year-to-date direct expenses totaled \$177.6 million, \$5.9 million, or 3.2%, less than budgeted.

**FY18 Year-to-Date Direct Expenses
(in millions)**



Lower than budgeted spending for Wages & Salaries, Maintenance, Fringe Benefits, Other Materials, Chemicals, Professional Services, Worker's Compensation, and Training and Meetings was partially offset by higher spending for Overtime, Utilities, and Other Services.

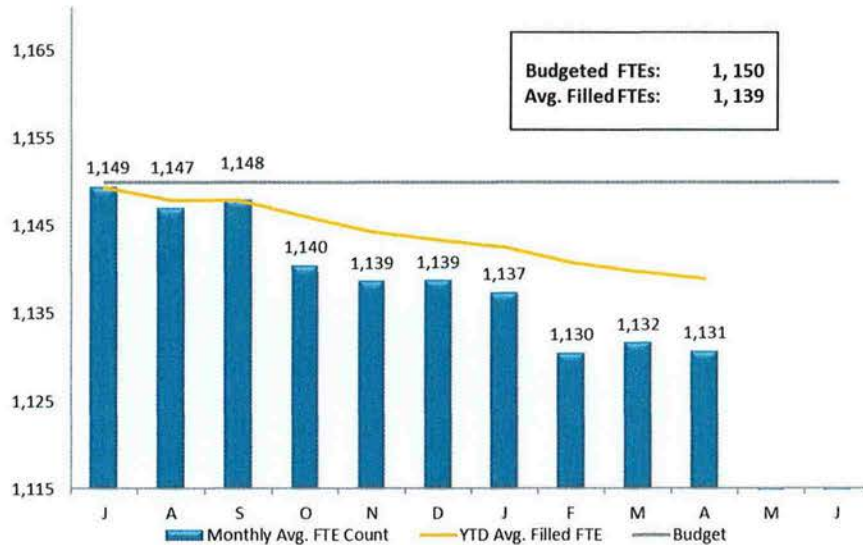
**FY18 Year-to-Date Direct Expense Variance
(in thousands)**



Wages and Salaries

Wages and Salaries are under budget by \$3.2 million, or 3.9%. Year to date, there have been 11 fewer average FTEs (1,139 versus 1,150 budget), and lower average new hire salaries versus retirees, also the timing of backfilling vacant positions, and lower leave balance accruals contributed to Regular Pay being under budget.

FY18 MWRA Full Time Equivalent (FTE) Position Trend



Maintenance

Maintenance was under budget by \$1.7 million, or 6.8%. While there were numerous components to the underspending for Maintenance year-to date, underspending at Deer Island included timing of the door replacement project and of instrumentation upgrades and motor replacements, offset by overspending for emergency repairs to gravity thickeners #5 and #6. Underspending in Field Operations was due in part to timing of the HVAC upgrades at the Braintree-Weymouth Pump Station and Chelsea facility, offset by overspending for Pipeline Materials primarily for Water Pipeline Maintenance, Pipeline Services for timing of manhole replacement contract, and timing of cleaning of Headworks HVAC ducts.

Fringe Benefits

Fringe Benefit spending was lower than budgeted by \$697,000, or 4.1%, primarily for lower Health Insurance costs of \$579,000 due to fewer employees and retirees than budgeted participating in health insurance plans, and the shift from family to individual plans, which are less expensive. Medicare payments were also lower than budgeted by \$52,000, and Dental Insurance was lower by \$42,000.

Other Materials

Other Materials were less than budgeted by \$373,000, or 10.4%. There were various items under budget, including Health and Safety Materials at Deer Island, Vehicle Expenses due to lower than budgeted fuel prices and Computer Hardware in MIS and Computer Software in SCADA due to timing of purchases.

Chemicals

Year-to-date, Chemicals were lower than budget by \$349,000, or 4.4%. The majority of the variance for Chemicals was the result of lower flows both at Deer Island and the Carroll Plant, 13% and 5% respectively, the quality of the influent at Deer Island and the water quality at the Carroll Plant. The underspending was offset by higher than budgeted spending on Hydrogen Peroxide and Ferric Chloride at Deer Island due to odor control and struvite control respectively. It is important to note that Chemicals variances are also based on deliveries which in general reflect the usage patterns. However, the timing of deliveries is an important factor. For instance, underspending for Activated Carbon at Deer Island is due to the timing of the change out of carbon beds later in the year than budgeted.

Professional Services

Professional Services were under budget by \$251,000, or 4.4%. The overall underspending year-to-date is due to timing of as-needed Engineering Services in Operations and Legal services in Administration and Treasury. The underspending is offset by overspending in the year for unbudgeted testing for algae at Chestnut Hill Reservoir, a red tide study, and legal services in the Law Department.

Worker's Compensation

Through April, Worker's Compensation expenses were lower than budget by \$151,000, or 7.8%. The lower Worker's Compensation expenses were primarily due to reductions in payments and reserves resulting from settlement of five claims and resolution of a number of claims through return to work. Since February, Worker's Compensation reserves have increased as the result of adjustments to reserves for ongoing and additional cases. It is important to note that, while spending is spread evenly during the year, monthly expenses can vary significantly depending on new claims and severity of cases.

Training & Meetings

Training & Meetings expenses were less than budgeted by \$83,000, or 27.1% due to timing.

Overtime

Overtime expenses year-to-date were higher than budgeted by \$429,000, or 12.7%, which is a decrease since March. The overspending year-to-date was mainly in Metro Maintenance and Water Operations for maintenance and emergency leak repairs, wet weather and snow removal;

and Wastewater Operations for wet weather events. Field Operations performed off-hours maintenance work, reported in prior monthly financial staff summaries, to alleviate project backlogs due to staff vacancies in Western Water Operations, replaced manhole covers and frames prior to a major repaving project, and replaced an HVAC unit at the Chelsea facility. The overspending was offset by year-to-date lower spending for Laboratory Services.

Utilities

Utilities were overspent by \$253,000, or 1.4%. Diesel fuel overspending is a net of \$499,000 for purchasing \$689,000 at Deer Island in December 2017 which was budgeted in May 2018, offset by \$189,000 underspending in Field Operations due to favorable pricing year-to-date. It should be noted that the price of diesel fuel has been increasing in the last few months. Diesel Fuel overspending is offset by underspending in Electricity of \$218,000 primarily in Field Operations due to favorable pricing (approx. 2¢ under budget per kwh through December) and lower electricity usage at Nut Island and Spot Pond resulting in \$324,000 under budget, offset by overspending at Deer Island of \$126,000 due to the recent increase in Eversource transmission and distribution costs.

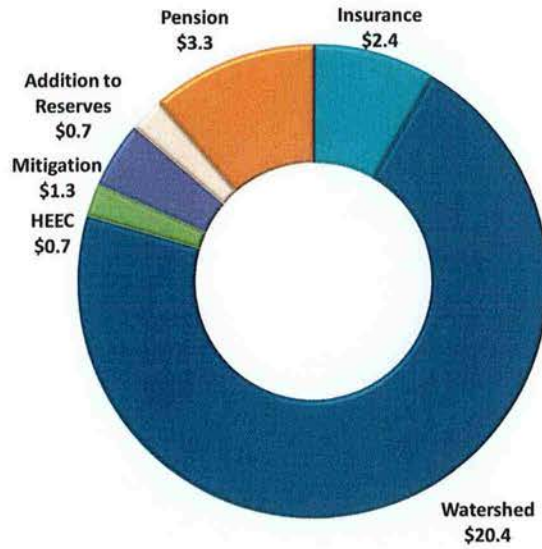
Other Services

Other Services were slightly over budget by \$169,000, or 0.9%. There were numerous components over budget, including Sludge Pelletization of \$280,000 due to higher year-to-date quantities related in part to struvite control during the cleaning of one digester. This was offset by lower spending in Other Services of \$86,000 for a number of services, including timing of remediation projects managed by Real Property/Environmental Management and timing of Technical Assistance for Lead issues.

Indirect Expenses

Year-to-date Indirect Expenses totaled \$28.7 million, which is \$175,000, or 0.6% greater than budgeted, due to higher Insurance claims of \$797,000 resulting from the outcome of a recent litigation, offset by lower Insurance premiums of \$50,000. Watershed costs are lower than budget by \$416,000 resulting from an over-accrual at the end of FY17 of Watershed operating expenses of \$286,000 and lower than budgeted PILOT payments of \$130,000. HEEC charges are under budget by \$138,000 for the existing cross-harbor cable.

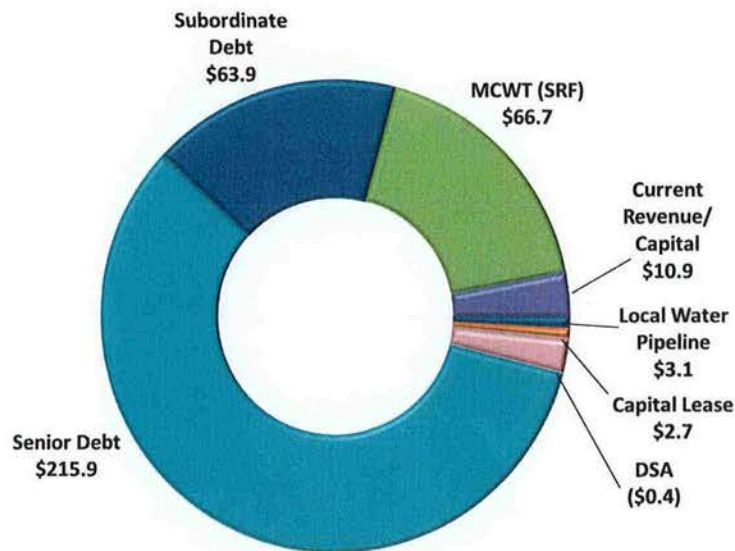
**FY18 Year-to-date Indirect Expenses-YTD
(in millions)**



Capital Financing

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

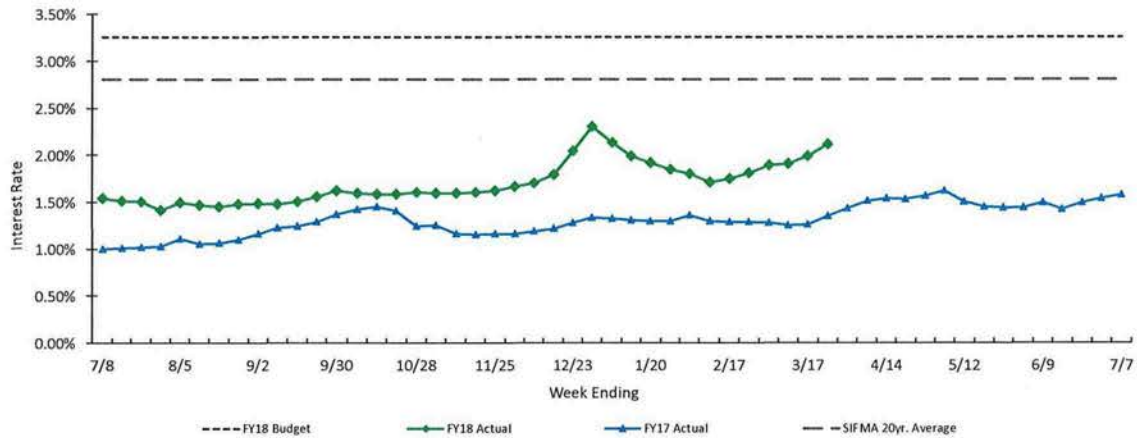
**Year-to-date FY18 Capital Finance
(in millions)**



Year-to-date Capital Financing expenses for FY18 totaled \$371.3.6 million, which was on budget after the transfer in April of \$1.4 million to the Defeasance Account, which brings the balance of the Defeasance Account to \$8.4 million year-to-date. The favorable impact of the short-term variable rates is \$6.4 million year-to-date, and \$2.0 million relates to the timing of SRF borrowing.

The graph below reflects the FY18 actual variable rate trend by week year-to-date against the FY18 Budget.

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



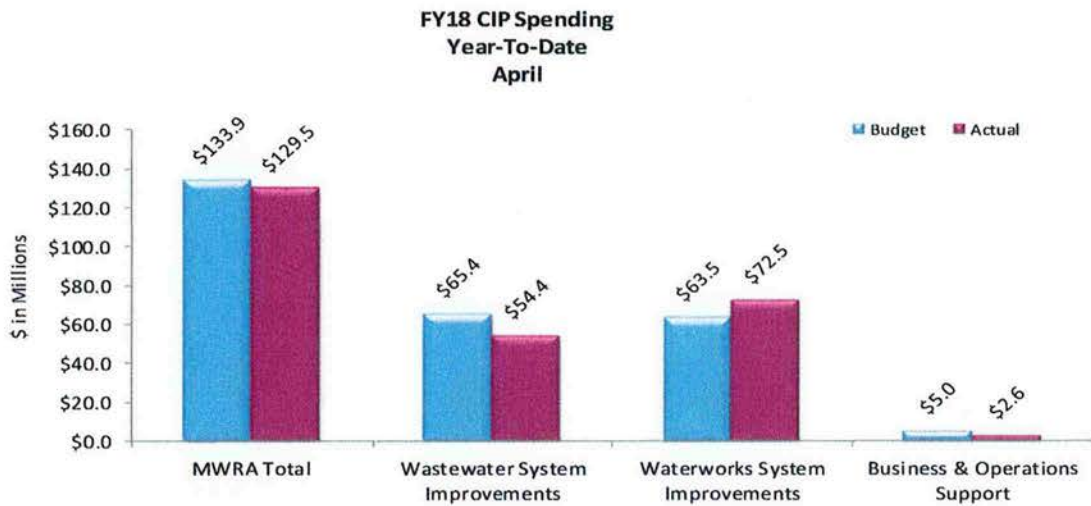
Revenue & Income

Year-to-date Revenues of \$621.8 million were \$6.3 million, or 1.0% over budget, reflecting a \$4.2 million receipt from the settlement between various State Attorneys General and Barclays PLC for attempting to manipulate the LIBOR market. LIBOR is a standard financial index used to set the cost of various variable-rate loans. Revenues were also over budget by \$1.5 million for favorable returns on investment income (average short-term rates were higher than budgeted: 1.45% vs. 1.05%), \$234,000 for disposal of surplus material, \$228,000 for the final payment of a class action lawsuit settlement for derivative agreements, and \$131,000 for energy reimbursements. This is offset by lower than budgeted revenue of \$157,000 for the sale of RPS credits.

FY18 Capital Improvement Program

Capital expenditures in Fiscal Year 2018 through April total \$129.5 million, \$4.4 million, or 3.3%, under budget.

After accounting for programs which are not directly under MWRA's control, most notably the Inflow and Infiltration (I/I) grant/loan program, the Local Water Pipeline loan program, and the community managed Combined Sewer Overflow (CSOs) projects, capital spending totaled \$102.1 million, \$7.7 million, or 7.0%, under budget.



Overall CIP spending reflects the underspending of \$11.0 million in Wastewater Improvements, \$2.4 million in Business and Operations Support, and overspending of \$9.0 million in Waterworks Improvements. Major underspending variances in Wastewater are primarily due to delays in both the Chelsea Creek Headworks Upgrades due to water main and fuel storage tank installations and Alewife Brook Pump Station Rehabilitation due to bypass pumping issues. Waterworks overspending variances are primarily due to more community loans than originally anticipated and contractor progress on the Northern Intermediate High Section 89 & 29 Redundancy Construction Phase 1C, Southern Extra High Redundancy Section 111 Phase 1, Wachusett Pump Station Construction, as well as timing of watershed land purchases.

\$ in Millions	Budget	Actuals	\$ Var.	% Var.
Wastewater System Improvements				
Interception & Pumping	38.8	31.8	(7.0)	-18.1%
Treatment	9.7	7.8	(1.9)	-19.6%
Residuals	1.5	0.2	(1.2)	-83.2%
CSO	1.7	1.7	(0.0)	-1.7%
Other	13.8	12.9	(0.8)	-6.1%
Total Wastewater System Improvements	\$65.4	\$54.4	(\$11.0)	-16.8%
Waterworks System Improvements				
Drinking Water Quality Improvements	3.0	3.2	0.3	8.8%
Transmission	19.9	23.4	3.5	17.6%
Distribution & Pumping	31.1	32.5	1.4	4.5%
Other	9.5	13.4	3.8	40.0%
Total Waterworks System Improvements	\$63.5	\$72.5	\$9.0	14.2%
Business & Operations Support	\$5.0	\$2.6	(\$2.4)	-47.3%
Total MWRA	\$133.9	\$129.5	(\$4.4)	-3.3%

Totals may not add due to rounding

FY18 Year-to-date Spending by Program:

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

Interception & Pumping: Net underspending of \$7.0 million

- \$3.3 million for Chelsea Creek Upgrades Construction due to delays with water main and fuel oil system installations.
- \$2.3 million for Alewife Brook Pump Station Construction due to bypass pumping delays.
- \$0.4 million for Wastewater Metering/Study/Design due to the contract award being less than budgeted, \$0.3 million for Pump Stations and CSO Condition Assessment due to delay in award, \$0.2 million for DeLauri Pump Stations Screens and Security due to later than budgeted notice-to-proceed, and \$0.1 million for Cambridge Branch Sections 23, 24, 26, and 27 Study due to being completed under budget.
- This underspending was partially offset by overspending of \$0.2 million for final work for the Caruso Pump Station Construction and \$0.1 million for Winthrop/Boston Study Sections 186, 4, 5, and 6 due to progress.

Other Waterworks: Net overspending of \$3.8 million

- \$4.4 million for Local Water System Assistance Program due to greater than anticipated community requests for loans. The overspending was partially offset by \$0.2 million for the Cosgrove Roof Replacement and \$0.2 million for the Steel Tank Improvements Design due to delay in contract awards, and \$0.1 million for Quabbin Power, Communication & Security – Construction partially due to reimbursement from DCR Office of Watershed Management for work at the boat cove and less than anticipated engineering services during construction.

Waterworks Transmission: Net overspending of \$3.5 million

- \$3.2 million for Wachusett Aqueduct Pump Station Construction and Engineering Services due to contractor progress, \$1.1 million for Watershed Land due to timing of land purchases, and \$0.8 million for WASM 3 MEPA/Design/CA/RI for timing of boring work.
- This overspending was partially offset by underspending of 0.3 million for Shaft 12 Isolation Gate Design due to contract being terminated, \$0.2 million for CVA Motorized Screen Replacement due to work scheduled for FY18 performed in FY17, and \$0.1 million for time extension for the Evaluation of Farm Pond Buildings and Waban Arches.

Business & Operations Support: Net underspending of \$2.4 million

- \$1.6 million for Security Equipment due to a delay in implementing equipment initiatives.
- \$1.2 million for MIS Projects due to timing of the IT Strategic Plan implementation.
- The underspending was partially offset by overspending of \$0.4 million due to timing of vehicle purchases.

Wastewater Treatment: Net underspending of \$1.9 million

- Clinton: \$0.3 million for Phosphorus Reduction Construction due to less than anticipated progress including testing delays and \$0.2 million for Clinton Roofing Rehabilitation due to delay in contract award.
- Deer Island: \$0.6 million for Chemical Bulk Storage Tanks Relining due to delay in award, and \$0.4 million for Digester Sludge Pump Replacement Phase 2 and \$0.3 million for Fuel System Upgrades for work scheduled for FY18 performed in FY17.
- The underspending was partially offset by overspending of \$0.2 million for Personnel Dock Rehabilitation due to additional work required.

Water Distribution and Pumping: Net overspending of \$1.4 million

- \$2.9 million for Section 89/29 Redundancy Phase 1C Construction and \$1.6 million for SEH Redundancy Pipeline Section 111 Phase 1 Construction, \$0.3 million for NIH Section 89 & 29 Redundancy Phase 2 Construction, and \$0.3 million for NIH Section 89 & 29 Redundancy Phase 1B due to contractor progress.
- The overspending was partially offset by underspending \$1.1 million for SEH Redundancy Pipeline Section 111 Phase 3 due to delay in award as a result of permit issues, \$0.4 million for SEH Redundancy Pipeline Section 111 Phase 2 delays due to ledge, \$0.3 million for Section 14 Water Pipe Relocation (Malden) due to delay in commencing pipe installation, \$0.3 million for Section 53 and 99 Design CA/RI due to delay in award, and \$0.2 million for Chestnut Hill Gatehouse #1 Repairs due contract award being less than budgeted.

Residuals: Net underspending of \$1.2 million

- Underspending of \$0.5 million for Mechanical Improvements and \$0.5 million for Electrical Improvements due to delay in contract awards, and \$0.2 million for Sludge Tank & Silo Coating for work that was postponed during the winter.

Other Wastewater: Net underspending of \$0.8 million

- \$0.8 million for Community Infiltration/Inflow (I/I) due to less than budgeted requests for grants and loans.

Drinking Water Quality Improvements: Net overspending of \$0.3 million

- \$0.6 million for contractor progress for the Marlborough Maintenance Facility.

Combined Sewer Overflow: Net underspending of \$0.1 million

- Underspending of \$0.2 million for Cambridge Sewer Separation Project due to updated final cost of restoration work, partially offset by \$0.2 million for CSO Performance Assessment due to consultant progress.

Construction Fund Balance

The construction fund balance was \$45.6 million as of the end of April. Commercial Paper/Revolving Loan availability was \$121.0 million to fund construction projects.

ATTACHMENTS:

Attachment 1 – Variance Summary April 2018

Attachment 2 – Current Expense Variance Explanations

Attachment 3 – Capital Improvement Program Variance Explanations

Attachment 4 – FY18 Budget vs. FY18 Projections for the Current Expense Budget

ATTACHMENT 1
FY18 Actuals vs. FY18 Budget

	April 2018 Year-to-Date				
	Period 10 YTD Budget	Period 10 YTD Actual	Period 10 YTD Variance	%	FY18 Approved
<u>EXPENSES</u>					
WAGES AND SALARIES	\$ 82,862,282	\$ 79,639,728	\$ (3,222,554)	-3.9%	\$ 104,286,370
OVERTIME	3,385,475	3,814,993	429,518	12.7%	4,110,637
FRINGE BENEFITS	17,080,173	16,383,310	(696,863)	-4.1%	20,997,975
WORKERS' COMPENSATION	1,935,817	1,785,145	(150,672)	-7.8%	2,322,980
CHEMICALS	7,980,107	7,631,263	(348,844)	-4.4%	9,836,933
ENERGY AND UTILITIES	17,426,006	17,678,574	252,568	1.4%	21,735,222
MAINTENANCE	24,848,541	23,168,986	(1,679,555)	-6.8%	32,200,785
TRAINING AND MEETINGS	323,485	258,031	(65,454)	-20.2%	406,269
PROFESSIONAL SERVICES	5,675,280	5,424,771	(250,509)	-4.4%	7,221,622
OTHER MATERIALS	3,584,150	3,210,866	(373,284)	-10.4%	6,692,660
OTHER SERVICES	18,429,265	18,598,184	168,919	0.9%	22,764,526
TOTAL DIRECT EXPENSES	\$ 183,530,581	\$ 177,593,851	\$ (5,936,727)	-3.2%	\$ 232,575,979
INSURANCE	\$ 1,664,970	\$ 2,412,468	\$ 747,498	44.9%	\$ 2,013,452
WATERSHED/PILOT	20,808,697	20,392,950	(415,747)	-2.0%	25,164,006
HEEC PAYMENT	791,734	653,480	(138,254)	-17.5%	957,445
MITIGATION	1,320,555	1,302,313	(18,242)	-1.4%	1,596,950
ADDITIONS TO RESERVES	678,999	678,999	-	0.0%	821,116
RETIREMENT FUND	3,277,369	3,277,369	-	0.0%	3,277,369
POST EMPLOYEE BENEFITS	-	-	-	---	5,035,422
TOTAL INDIRECT EXPENSES	\$ 28,542,324	\$ 28,717,579	\$ 175,254	0.6%	\$ 38,865,760
STATE REVOLVING FUND	\$ 68,702,038	\$ 67,691,677	\$ (1,010,361)	-1.5%	\$ 84,931,906
SENIOR DEBT	215,876,760	215,876,760	-	0.0%	264,560,267
CORD FUND	-	-	-	---	-
DEBT SERVICE ASSISTANCE	(391,580)	(391,580)	-	0.0%	(391,580)
CURRENT REVENUE/CAPITAL	10,915,385	10,915,385	-	0.0%	13,200,000
SUBORDINATE MWRA DEBT	70,372,929	70,372,929	-	0.0%	85,443,447
LOCAL WATER PIPELINE CP	3,138,127	3,138,127	-	0.0%	3,794,944
CAPITAL LEASE	2,660,261	2,660,261	-	0.0%	3,217,060
DEBT PREPAYMENT	-	-	-	---	10,900,000
VARIABLE DEBT	-	(6,000,566)	(6,000,566)	---	-
HEEC CABLE CAPACITY RESERV	-	-	-	---	6,532,146
DEFEASANCE ACCOUNT	-	7,010,927	7,010,927	---	-
TOTAL DEBT SERVICE	\$ 371,273,920	\$ 371,273,920	\$ -	0.0%	\$ 472,188,190
TOTAL EXPENSES	\$ 583,346,825	\$ 577,585,351	\$ (5,761,473)	-1.0%	\$ 743,629,929
<u>REVENUE & INCOME</u>					
RATE REVENUE	\$ 592,948,500	\$ 592,948,500	\$ -	0.0%	\$ 717,054,000
OTHER USER CHARGES	8,167,906	8,160,009	(7,897)	-0.1%	9,011,070
OTHER REVENUE	6,431,532	11,181,669	4,750,137	73.9%	7,359,078
RATE STABILIZATION	-	-	-	---	-
INVESTMENT INCOME	7,965,576	9,463,515	1,497,939	18.8%	10,205,781
TOTAL REVENUE & INCOME	\$ 615,513,514	\$ 621,753,693	\$ 6,240,179	1.0%	\$ 743,629,929

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY18 Budget YTD April	FY18 Actuals YTD April	FY18 YTD Actual vs. FY18 Budget		Explanations
			\$	%	
Direct Expenses					
Wages & Salaries	82,862,282	79,639,728	(3,222,554)	-3.9%	Wages and Salaries are under budget by \$3.2million. Year to date, there have been 11 fewer average FTEs (1,139 versus 1,150 budget), lower average new hire salaries versus retirees, the timing of backfilling vacant positions, and lower leave balance accruals contributed to Regular Pay being under budget.
Overtime	3,385,475	3,814,993	429,518	12.7%	Higher spending mainly in Metro Maintenance of \$215,000, both for off-hours maintenance, wet weather events, and snow removal; Water Operations of \$149,000; and Wastewater Operations of \$99,000 for wet weather events. Some examples of off-hour maintenance work include off-hours work to alleviate a project backlog in western ops due to staff vacancies, replacement of manholes in a community prior to a major repaving job, and crane rigging to hoist replacement HVAC units into place at the Chelsea maintenance facility. The higher spending is offset by lower spending for Laboratory Services of \$37,000, and Administration of \$24,000.
Fringe Benefits	17,080,173	16,383,310	(696,863)	-4.1%	Lower than budget mainly in Health Insurance of \$579,000, due to fewer than budgeted participants in health insurance plans, and the shift from family to individual plans which are less expensive; lower Medicare payments of \$52,000; Lower Dental Insurance of \$43,000; lower Tuition Reimbursement of \$28,000; and lower Unemployment Insurance of \$21,000.
Worker's Compensation	1,935,817	1,785,145	(150,672)	-7.8%	Underspending due to lower Medical Payments of \$152,000, and Management Costs of \$36,000. This is offset by higher Compensation Payments of \$38,000. Medical payments were lower due to adjustments to reserves for claims resolved through return to work. Management Costs were adjusted as well to reflect resolution of outstanding cases. Compensation Payments were higher due to the settlement of six claims and higher than budgeted compensation payments. It is important to note that spending on this line item can change significantly depending on future claims and severity of cases.

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY18 Budget YTD April	FY18 Actuals YTD April	FY18 YTD Actual vs. FY18 Budget		Explanations
			\$	%	
Chemicals	7,980,107	7,631,263	(348,844)	-4.4%	Underspending for Soda Ash of \$313,000 primarily at CWTP; Activated Carbon of \$163,000 at DITP; Sodium Hypochlorite of \$86,000 primarily at DITP, offset by overspending at CWTP; Hydrofluosilic Acid of \$80,000 at CWTP; Carbon Dioxide of \$67,000 at CWTP; Sodium Bisulfite of \$48,000 primarily at DITP and CWTP; and Liquid Oxygen of \$48,000 at CWTP. This is offset by overspending on Hydrogen Peroxide of \$295,000 at DITP and Ferric Chloride of \$184,000 also at DITP. The majority of underspending for Chemicals is the result of lower flows both at DITP and CWTP, 13% and 5% respectively through April and the quality of the influent both at DITP and CWTP. It is important to note that Chemicals variances are also based on deliveries which in general reflect the usage patterns. However, the timing of deliveries is an important factor. For instance, the underspending for Activated Carbon is due to the timing of the change out of carbon beds at DITP later in the year than budgeted.
Utilities	17,426,006	17,678,574	252,568	1.4%	Overspending in Diesel Fuel of \$499,000. \$689,000 overspending in Diesel Fuel at DITP due to timing of delivery in December 2017 versus budgeted in May of 2018, offset by \$189,000 underspending in FOD due to favorable pricing YTD. Electricity is under budget by \$218,000 primarily in FOD due to favorable pricing (approx. 2¢ under budget per kwh through December) and lower electricity usage at Nut Island and Spot Pond resulting in \$324,000 under budget, offset by overspending at DITP of \$126,000.

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY18 Budget YTD April	FY18 Actuals YTD April	FY18 YTD Actual vs. FY18 Budget		Explanations
			\$	%	
Maintenance	24,848,541	23,168,986	(1,679,555)	-6.8%	<p>Materials were underspent by \$1.3 million and Services were underspent by \$391,000.</p> <p>Underspending in Specialized Equipment Services of \$802,000 in DITP for timing of PIC upgrade, FOD for instrumentation service contract, Building & Grounds Services of \$764,000 for timing of door replacement contract at DITP, timing of the painting contract at Clinton, and at the Chelsea Facility for carpet replacement and service contracts; HVAC Materials of \$714,000 primarily in FOD for the timing of the B/W IPS and Chelsea HVAC upgrades and DITP for timing of condenser purchases; Plant & Machinery Materials of \$528,000 primarily in DITP for timing on various items like CTG spare parts, and the W3 strainer on the non-potable water system; Electrical Materials of \$279,000 primarily in DITP for timing of instrumentation upgrades and motor replacements; Computer Licenses/Upgrades of \$250,000 in MIS for timing of software maintenance agreements; Electrical Services of \$165,000 in DITP resulting from the delay of the lighting upgrade project; and Computer Materials of \$159,000 for an inventory issuance credit in MIS.</p> <p>Overspending in Plant & Machinery Services of \$1.7 million is comprised of emergency repairs to DITP's gravity thickener #5 & 6, timing of CTG maintenance, Cryo services, and refurbishing slide gates, Metro Maintenance for timing of cleaning of the Headwork air ducts; and Pipeline Services of \$111,000 for timing of manhole replacement contract.</p>

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY18 Budget YTD April	FY18 Actuals YTD April	FY18 YTD Actual vs. FY18 Budget		Explanations
			\$	%	
Training & Meetings	323,485	258,031	(65,454)	-20.2%	Underspending in Operations and MIS due to timing of training.
Professional Services	5,675,280	5,424,771	(250,509)	-4.4%	Other Professional Services was underspent by \$176,000 primarily in Treasury, Law and Admin for timing of legal services, and Operations Admin for timing of Mystic River Modeling Project and Energy Advisory services, offset by over spending in MIS due to the transfer of spending from the CIP budget. Engineering Services was underspent by \$90,000 in Operations primarily at DITP.
Other Materials	3,584,150	3,210,866	(373,284)	-10.4%	Lower than budgeted spending for Health and Safety of \$120,000 primarily at DITP, DLS, and Op Support; Equipment/Furniture of \$76,000 in DLS and DITP, offset by overspending in Office of Emergency Preparedness; Vehicle Expenses of \$74,000 due to lower prices for fuel than budgeted; Computer Hardware of \$63,000 in MIS and Computer Software of \$63,000 in SCADA Maintenance both due to timing.
Other Services	18,429,265	18,598,184	168,919	0.9%	Higher than budgeted spending for Sludge Pelletization of \$280,000 due to higher year to date quantities related to Struvite control; Space Lease/Rentals of \$129,000 primarily due to Internal Audit's completing their annual audit of CY16 operating expenses and FY17 property taxes which determined we owe the landlord \$41,000 and increased the common area maintenance and property taxes portions of the monthly bill for FY18; and Telephone of \$32,000 in MIS. This is offset by lower spending in Other Services of \$86,000 for a number of services, including timing of remediation projects managed by Real Property/Environmental Management and timing of Technical Assistance for Lead issues, offset by timing of the payment for MWRA use of the DCR radio system; and Police Details of \$76,000 primarily in Water Pipeline Maintenance and Meter Maintenance.
Total Direct Expenses	183,530,581	177,593,851	(5,936,731)	-3.2%	

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY18 Budget YTD April	FY18 Actuals YTD April	FY18 YTD Actual vs. FY18 Budget		Explanations
			\$	%	
Indirect Expenses					
Insurance	1,664,970	2,412,468	747,498	44.9%	Higher claims than budgeted of \$797,000 due to an adverse court case decision, offset by lower premiums of \$50,000.
Watershed/PILOT	20,808,697	20,392,950	(415,747)	-2.0%	Lower Watershed Reimbursement of \$286,000 due to over accrual at the end of FY17 as compared to the actual amount paid in the first quarter of FY18 and \$130,000 in lower PILOT payments.
HEEC Payment	791,734	653,480	(138,254)	-17.5%	Lower than budgeted charges for O&M charges for existing HEEC cable.
Mitigation	1,320,555	1,302,313	(18,242)	-1.4%	Actual inflation rate was 2.08% vs. 2.5% used for the budget.
Addition to Reserves	678,999	678,999	-	0.0%	
Pension Expense	3,277,369	3,277,369	-	0.0%	
Post Employee Benefits	-	-	-		
Total Indirect Expenses	28,542,324	28,717,579	175,255	0.6%	
Debt Service					
Debt Service	371,665,500	371,665,500	-	0.0%	Through April staff have transferred \$8.4 million of a favorable YTD variance to the Defeasance Account. The short-term rates related variance is \$6.4 million lower YTD, and \$2.0 million related to the timing of SRF borrowing.
Debt Service Assistance	(391,580)	(391,580)	-	0.0%	
Total Debt Service Expenses	371,273,920	371,273,920	-	0.0%	
Total Expenses					
Total Expenses	583,346,825	577,585,350	(5,761,476)	-1.0%	
Revenue & Income					
Rate Revenue	592,948,500	592,948,500	-	0.0%	
Other User Charges	8,167,906	8,160,009	(7,897)	-0.1%	
Other Revenue	6,431,532	11,181,669	4,750,137	73.9%	\$4.4 million for two settlements, \$4.2 million receipt for settlement between various State Attorneys General and Barclays PLC for attempting to manipulate the LIBOR market and \$228,000 for the final payment of a class action lawsuit settlement for derivative agreements; \$234,000 for disposal of surplus material. This is offset by \$31,000 less for revenue attributable to renewable energy credits and energy rebates due to timing on RPS credits.
Rate Stabilization	-	-	-		
Investment Income	7,965,576	9,463,515	1,497,939	18.8%	Investment Income is over budget mostly due to short term rates higher than budget (1.45% vs. 1.05% budget).
Total Revenue	615,513,514	621,753,693	6,240,179	1.0%	
Net Revenue in Excess of Expenses	32,166,689	44,168,343	12,001,655		

ATTACHMENT 3
FY18 CIP Year-End Variance Report (000's)

	FY18 Budget YTD April	FY18 Actuals YTD April	YTD Actuals vs. Budget		Explanations
			\$	%	
Wastewater					
Interception & Pumping (I&P)	\$38,813	\$31,799	(\$7,014)	-18.1%	<u>Underspending</u> Chelsea Creek Headworks Upgrades - Construction: \$3.3M (delays of water main installation due to pile testing and the concrete channel lining due to service preparation. Also, exterior paneling work delayed due to timing of materials) Alewife Brook Pump Station Rehab - Construction: \$2.3M (testing of dry and wet weather bypass pumps had been delayed. Construction is now progressing on schedule) Wastewater Meter System Planning/Study/Design: \$358k (less than budget award) Pump stations and CSO condition assessment: \$305k and Remote Headworks & Deer Island Shafts Rehab - Study: \$111k (contracts not yet awarded) Reading Extension Sewer - Construction: \$208k (work delayed pending correction of lining deficiency) DeLauri Pump Station Screens and Security: \$165k (later than budgeted notice-to-proceed) Cambridge Branch Section 27, 26, and 24: \$144k (completed under budget) <u>Offset Overspending</u> Caruso Pump Station Improvements - Construction: \$165k (additional change order work) Sections 4, 5, 6, 186 - Study: \$106k (consultant progress)
Treatment	\$9,703	\$7,800	(\$1,903)	-19.6%	<u>Underspending</u> Chemical Bulk Storage Tanks Relining: \$588k (contract not yet awarded) Digested Sludge Pump Replacement - Phase 2: \$396k and Power System Improvements - Construction: \$311k (for work scheduled for FY18 performed in FY17) Clinton Wastewater Treatment Plant Phosphorus Reduction - Construction: \$296k (up to a six-month time extension due to delays including preliminary testing) Clinton Roofing: \$221k (contract not yet awarded) NMPS and WTF Valve & Piping Replacement - ESDC/REI: \$90k (less than anticipated engineering services) <u>Offset Overspending</u> Personnel Dock Rehab: \$156k (additional rehab work required)
Residuals	\$1,454	\$244	(\$1,209)	-83.2%	Mechanical improvements and electrical improvements: \$968k (delay in contract awards) Sludge Tank & Silo Coating: \$241k (commencemnt of work delayed)

ATTACHMENT 3
FY18 CIP Year-End Variance Report (000's)

	FY18 Budget YTD April	FY18 Actuals YTD April	YTD Actuals vs. Budget		Explanations
			\$	%	
CSO	\$1,680	\$1,651	(\$28)	-1.7%	<u>Underspending</u> Cambridge Sewer Separation: \$198k (pending final cost reconciliation)
Other Wastewater	\$13,759	\$12,917	(\$841)	-6.1%	<u>Offset Overspending</u> CSO Performance Assessment: \$173k (consultant progress greater than planned)
Total Wastewater	\$65,408	\$54,412	(\$10,996)	-16.8%	
Waterworks					
Drinking Water Quality Improvements	\$2,966	\$3,228	\$262	8.8%	<u>Overspending</u> Marlborough Maintenance Facility: \$556k (contractor progress)
Transmission	\$19,904	\$23,417	\$3,513	17.6%	<u>Overspending</u> Wachusett Aqueduct Pump Station - Design/ESDC and Construction: \$3.2M (due to project progress) Watershed Land Acquisition: \$1.1M (timing of land purchases) WASM 3 - MEPA/Design/CA/RI: \$815k (field work scheduled for FY17 performed in FY18) <u>Offset Underspending</u> Shaft 12 Isolation Gates - Design/CA/RI: \$290k (preliminary design report indicates construction costs to be greater than anticipated and therefore project to be reevaluated) CVA Motorized Screens Replacement - Construction: \$208k (work scheduled for FY18 performed in FY17) Evaluation of Farm Pond Buildings & Waban Arches: \$132k (project is substantially complete and will be less than budgeted. Decision pending on demolition vs. rehabilitation as next phase.)

ATTACHMENT 3
FY18 CIP Year-End Variance Report (000's)

	FY18 Budget YTD April	FY18 Actuals YTD April	YTD Actuals vs. Budget		Explanations
			\$	%	
Distribution & Pumping	\$31,061	\$32,468	\$1,407	4.5%	<u>Overspending</u> NIH Section 89/29 Redundancy Phase 1B and 1C and Phase 2 : \$3.5M, and SEH Redundancy Pipeline Section 111 Phase 1 - Design/CA/RI and Construction: \$1.7M (all due to project progress) <u>Offset Underspending</u> SEH Redundancy Pipeline Section 111 Phase 3 - Construction: \$1.1M (contract not yet awarded) NIH Redundancy & Storage Easements: \$500k (timing of payment for the meter vault based on MOA with Town of Stoneham) Redundancy Pipeline Sect 111 Phase 2 - Construction: \$409k (contractor encountered additional, stronger ledge) Section 14 Water Pipe Relocation (Malden): \$328k (Delay in commencing pipe installation due to third party building construction. Work has resumed and expect to catch up by year-end.) Sections 53 and 99 Connection -Design/CA/RI: \$267k (contract not yet awarded) Chestnut Hill Gatehouse No. 1 Repair - Construction: \$216k (award less than budget) Sections 50 & 57 Water & 19/20/21 Sewer Rehab - Design/ESDC: \$146k (delay in field testing due to weather. Work has resumed and expect to be on schedule by year-end.) Sections 23, 24, 47 Rehab - Final Design/CA/RI: \$198k (Delay due to coordination of field work to determine pipe condition and establish test pits.
Other Waterworks	\$9,542	\$13,358	\$3,816	40.0%	<u>Overspending</u> Local Water System Assistance Program: \$4.4M (greater than budgeted community requests for loans) <u>Offset Underspending</u> Cosgrove Intake Roof Replacement: \$225k (contract not yet awarded) Steel Tank Improvements - Design/CA/RI: \$157k (due to schedule shift) Quabbin Power, Communication & Security - Construction: \$122k (partially due to reimbursement from DCR Office of Watershed Management for work at boat cove)
Total Waterworks	\$63,473	\$72,470	\$8,998	14.2%	

ATTACHMENT 3
FY18 CIP Year-End Variance Report (000's)

	FY18 Budget YTD April	FY18 Actuals YTD April	YTD Actuals vs. Budget		Explanations
			\$	%	
Business & Operations Support					
Total Business & Operations Support	\$4,981	\$2,626	(\$2,355)	-47.3%	<u>Underspending</u> Security Equipment: \$1.6M (delay in implementing equipment initiatives) MIS Projects: \$1.2M (timing of IT Strategic Plan implementation) <u>Offset Overspending</u> Vehicle Purchases: \$386k (timing of vehicle purchases)
Total MWRA	\$133,861	\$129,508	(\$4,353)	-3.3%	

ATTACHMENT 4

FY18 Budget vs FY18 Projection

TOTAL MWRA	FY18 Budget	FY18 Projection	Change	
			FY18 Budget vs FY18 Projection	
			\$	%
EXPENSES				
WAGES AND SALARIES	\$ 104,286,370	\$ 100,782,302	\$ (3,504,068)	-3.4%
OVERTIME	4,110,637	4,577,713	467,076	11.4%
FRINGE BENEFITS	20,997,975	20,149,975	(848,000)	-4.0%
WORKERS' COMPENSATION	2,322,980	2,572,308	249,328	10.7%
CHEMICALS	9,836,933	9,692,216	(144,717)	-1.5%
ENERGY AND UTILITIES	21,735,222	22,253,248	518,026	2.4%
MAINTENANCE	32,200,786	32,673,083	472,297	1.5%
TRAINING AND MEETINGS	406,269	402,531	(3,738)	-0.9%
PROFESSIONAL SERVICES	7,221,622	6,896,945	(324,677)	-4.5%
OTHER MATERIALS	6,692,659	6,472,686	(219,973)	-3.3%
OTHER SERVICES	22,764,526	22,932,606	168,080	0.7%
TOTAL DIRECT EXPENSES	\$ 232,575,979	\$ 229,405,613	\$ (3,170,366)	-1.4%
INSURANCE	\$ 2,013,452	\$ 2,805,581	792,129	39.3%
WATERSHED/PILOT	25,164,006	24,157,126	(1,006,880)	-4.0%
HEEC PAYMENT	957,445	819,191	(138,254)	-14.4%
MITIGATION	1,596,950	1,574,890	(22,060)	-1.4%
ADDITIONS TO RESERVES	821,116	821,116	-	0.0%
RETIREMENT FUND	3,277,369	3,277,369	-	0.0%
POSTEMPLOYMENT BENEFITS	5,035,422	5,035,422	-	0.0%
TOTAL INDIRECT EXPENSES	\$ 38,865,760	\$ 38,490,695	\$ (375,065)	-1.0%
STATE REVOLVING FUND	\$ 84,931,906	\$ 80,637,871	(4,294,035)	-5.1%
SENIOR DEBT	264,560,267	263,760,267	(800,000)	-0.3%
SUBORDINATE DEBT	85,443,447	85,443,447	-	0.0%
LOCAL WATER PIPELINE CP	3,794,944	1,482,833	(2,312,111)	-60.9%
CURRENT REVENUE/CAPITAL	13,200,000	13,200,000	-	0.0%
CAPITAL LEASE	3,217,060	3,217,060	-	0.0%
DEBT PREPAYMENT	10,900,000	10,900,000	-	
VARIABLE RATE SAVINGS	-	(7,727,273)	(7,727,273)	
DEFEASANCE ACCOUNT	-	15,133,419	15,133,419	
DEBT SERVICE ASSISTANCE	(391,580)	(1,336,306)	(944,726)	241.3%
HEEC CABLE CAPACITY RESERVE FUND	6,532,146	6,532,146	-	0.0%
TOTAL DEBT SERVICE	\$ 472,188,190	\$ 471,243,464	\$ (944,726)	-0.2%
TOTAL EXPENSES	\$ 743,629,929	\$ 739,139,772	\$ (4,490,157)	-0.6%
REVENUE & INCOME				
RATE REVENUE	\$ 717,054,000	\$ 717,054,000	-	0.0%
OTHER USER CHARGES	9,011,070	9,011,070	-	0.0%
OTHER REVENUE	7,359,078	12,159,078	4,800,000	65.2%
RATE STABILIZATION	-	-	-	
INVESTMENT INCOME	10,205,781	12,183,869	1,978,088	19.4%
TOTAL REVENUE & INCOME	\$ 743,629,929	\$ 750,408,017	\$ 6,778,088	0.9%

VARIANCE: \$ (11,268,245) \$ (11,268,245)

STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 30, 2018
SUBJECT: FY18 Third Quarter Orange Notebook



COMMITTEE: Administration, Finance & Audit

INFORMATION
 VOTE

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


David W. Coppes, P.E.
Chief Operating Officer

RECOMMENDATION:

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

DISCUSSION:

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

Deer Island Wastewater Treatment Plant Flows

In contrast to the summer and fall of 2017 which were relatively dry, this winter has been relatively wet. Wastewater flows to the Deer Island Wastewater Treatment Plant during the third quarter, were 17.8 percent above the three-year average used for budgeting, and 5.5 percent above the 10-year average. (See Page 1)

Higher plant flows resulted in higher power use, with total electrical power use 7.8 percent above target. While power use in most areas of the plant was similar to target, power use for pumping was 17.3 percent above the target. (See Page 1)

Impacts of Storm Events and Winter Weather

Use of the combustion turbine generators (CTGs) at Deer Island was more than three times greater than anticipated with use in parallel to the grid during six significant storm events, as well as after the plant wide power loss on March 14th. (See Pages 1, 2 and 3)

The storm events in January and March, with associated snow, rain, wind, and storm surge, contributed to increased overtime. Maintenance overtime at Deer Island was over budget by \$14,000 for the quarter (primarily in March), although it is under by \$86,000 fiscal year to date.

(See Page 5) Overtime for the entire plant during the third quarter was \$76,000 over budget, with \$45,000 attributable to the storms. (See page 42)

The storm events and winter weather required substantial effort by staff in field operations. The very cold weather in January caused a number of emergency leak repairs and community assistance efforts due to frozen appurtenances in both MWRA and community water lines. (See Page 13) That, plus storm response and snow removal, contributed substantially to \$555,000 in emergency overtime, \$205,000 over budget for the quarter. (See Page 42)

MASSACHUSETTS WATER RESOURCES AUTHORITY

Board of Directors Report

on

Key Indicators of MWRA Performance

for

Third Quarter FY2018

Q1	Q2	Q3	Q4



Frederick A. Laskey, Executive Director
David Coppes, Chief Operating Officer
May 30, 2018

Board of Directors Report on Key Indicators of MWRA Performance

3rd Quarter FY18

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

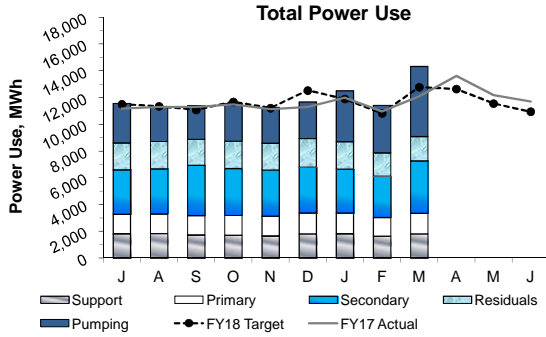
Frederick A. Laskey, Executive Director
David Coppes, Chief Operating Officer
May 30, 2018

OPERATIONS AND MAINTENANCE

Deer Island Operations

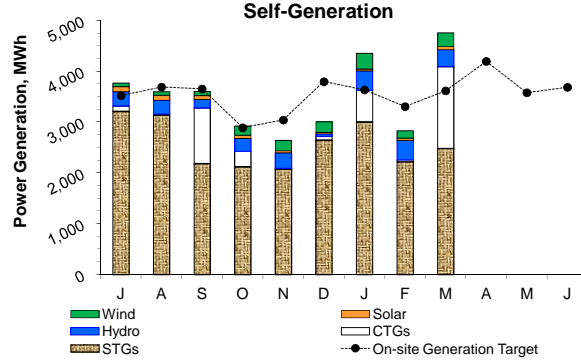
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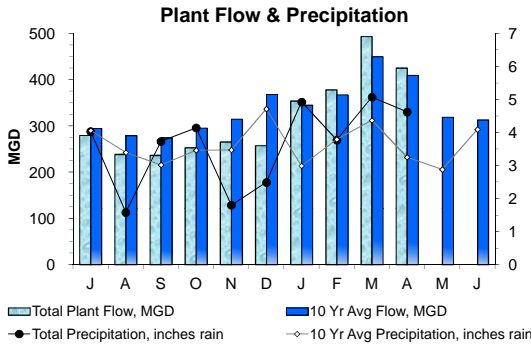


Total power usage in the 3rd Quarter was 7.8% above target as Total Plant Flow was 17.8% above target with the 3 year average plant flow. While power used in most areas of the plant were similar to target, power used for wastewater pumping was 17.3% higher than expected due to the higher plant flow and was 13.4% higher for secondary treatment due to a greater oxygen demand in the secondary aeration process, also as a result of the higher plant flow.

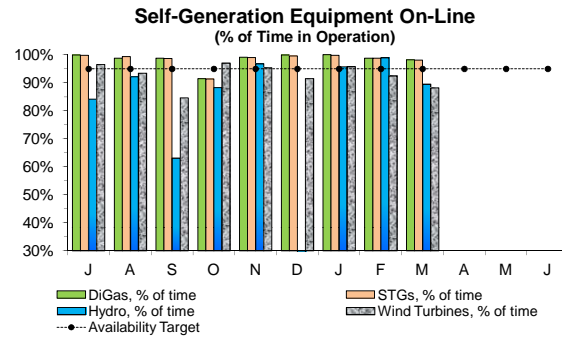
Note: Power usage projections are based on 3 year averages.



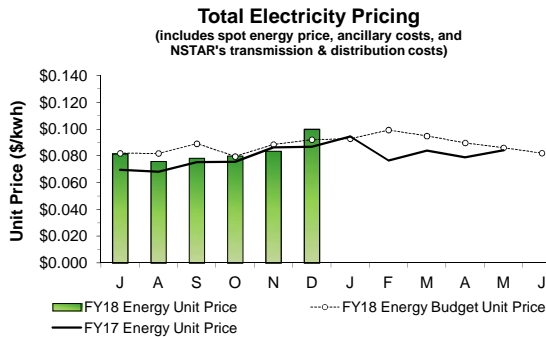
Power generated on-site during the 3rd Quarter was 13.1% above target. Power generation by the CTGs, STGs, Wind Turbines, and Solar Panels all met or exceeded their generation target. The CTGs were operated during six (6) storm events in the 3rd Quarter, as well as following a plant-wide power loss, in addition to operating for routine maintenance and checkout purposes. Power generated from CTG operation was more than three times the target. Generation by the Hydro Turbines was 32% below target as Hydro Turbine #1 remains out of service pending repair of the rotating assembly.



Total Plant Flow for the 3rd Quarter was 5.5% above target with the 10 year average plant flow (408.5 MGD actual vs. 387.3 MGD expected) as precipitation for the quarter was 23.4% higher than target (13.76 inches actual vs. 11.15 inches expected).

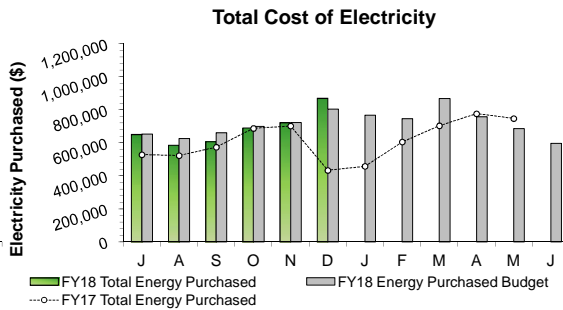


The DiGas system, STGs, and Hydro Turbines met or exceeded the 95% availability target for the 3rd Quarter. Hydro Turbine availability in March fell below target due in part to high plant flow events causing the turbine to trip offline and a sudden plant-wide power outage on March 14 which generated alarm conditions that prevented the turbine from restarting until the next day. Wind Turbine availability fell below target due to routine preventative maintenance this quarter, excessive and turbulent winds during a number of nor'easter storms, as well as issues that were also caused by the power outage.



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 January, February, and March (Quarter 3) are not yet available as the complete invoices have not been received. The actual Total Energy Unit Price in the 2nd Quarter, through December (the most current invoice available) was 2.7% below target with budgetary estimates. 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) months due to the timing of invoice receipt and review.



The invoices for the total cost of Electricity Purchased for January, February, and March (Quarter 3) have not been received as of reporting time. Year-to-date Total Cost of Electricity is \$39,704 (1.0%) lower than budgeted through December as the Total Energy Unit Price is lower than budgeted by 2.7%, while the Total Electricity Purchased is 1.5% higher than target through December.

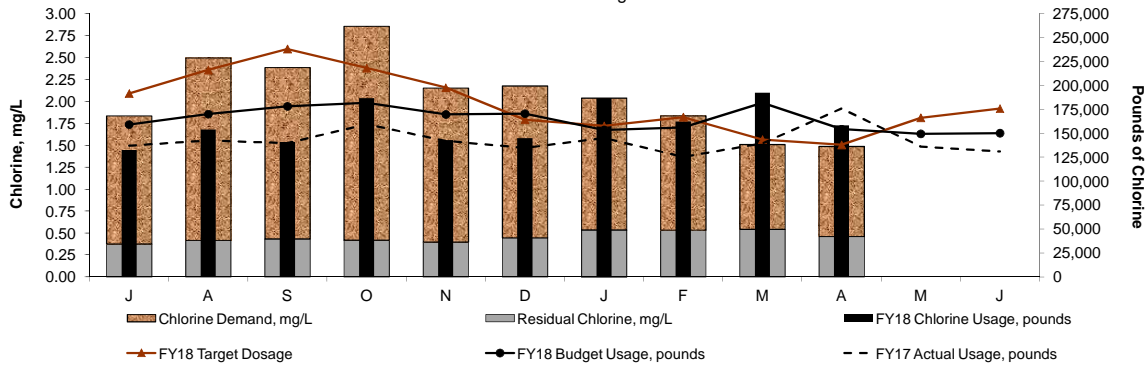
Note: Only the actual energy prices are reported. Therefore, the dataset lags by three (3) months due to the timing of invoice receipt and review.

Deer Island Operations

3rd Quarter - FY18

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Deer Island Sodium Hypochlorite Use Disinfection Dosage and



The disinfection dosing rate in the 3rd Quarter was 5.4% above the target. DITP maintained an average disinfection chlorine residual of 0.54 mg/L this quarter with an average dosing rate of 1.79 mg/L (as chlorine demand was 1.26 mg/L). Actual sodium hypochlorite usage in pounds of chlorine was 10.1% above target this quarter as the overall plant flow was 17.8% higher than target and included several heavy rain events in combination with significant snow melt.

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

Secondary Blending Events

Month	Count of Blending Events	Count of Blending Events Due to Rain	Count of Blending Events Due to Non-Rain-Related Events	Secondary, as a Percent of Total Plant Flow	Total Hours Blended During Month
J	2	2	0	99.5%	7.51
A	0	0	0	100.0%	0.00
S	1	1	0	99.98%	1.36
O	1	1	0	98.4%	12.30
N	0	0	0	100.0%	0.00
D	0	0	0	100.0%	0.00
J	2	2	0	97.8%	27.94
F	0	0	0	100.0%	0.00
M	3	2	1	97.8%	38.98
A					
M					
J					
Total	9	8	1	99.1%	88.10

98.5% of all flows were treated at full secondary during the 3rd Quarter. There were four (4) secondary blending events due to high plant flow resulting from heavy rain combined with melting snow. These blending events resulted in a total of 66.41 hours of blending and 564.24 MGal of primary-only treated effluent with secondary effluent. A fifth secondary blending/bypass event lasting 0.52 hours occurred on March 14. This event followed an unanticipated plant-wide power outage and subsequent communications failure on the centralized process information and control system ("PICS") resulting in 9.74 MGal of primary-only treated effluent bypassing the secondary treatment process. Of the 9.74 MGal, 6.15 MGal was blended with secondary effluent, and an estimated 3.59 MGal was discharged without blending. All effluent was fully disinfected and then dechlorinated. The average daily flow was 550.2 MGD on March 14. Therefore, 1.12% is estimated to have been blended with effluent that received secondary treatment and 0.65% of the flow was discharged without blending during the event. The Maximum Secondary Capacity for the entire quarter was 700 MGD.

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

Deer Island Operations & Maintenance Report

Environmental/Pumping:

The plant achieved an instantaneous peak flow rate of 1,202.9 MGD during the morning of January 13. This peak flow occurred during a rain event that produced a total of 1.86 inches of precipitation combined with significant snow melt. Overall, Total Plant Flow in the 3rd Quarter was 5.5% higher than target with the 10 year average plant flow target for the quarter.

A number of significant storm events occurred during the 3rd Quarter, including a powerful nor'easter storm system that hit Massachusetts and the entire northeast coast in the form of a historic blizzard a few days into the new calendar year, a storm that surpassed the meteorological criteria to be considered a "bomb cyclone" due to the rapid nature of the barometric pressure drop. This blizzard dropped a total of 13.4 inches of snow on Boston on January 4, but also brought along high winds and frigid temperatures. The resulting surge produced by the storm was the highest tide ever recorded for Boston when the tide reached 15.16 feet, breaking the previous record of 15.1 feet measured during the Blizzard of 1978. Significant flooding was observed in many areas along the coast including in Winthrop. Nevertheless, pumping and treatment processes continued without incident during and following the storm. The CTGs were operated in parallel with utility power for a combined total of 22.17 hours during the height of the storm from noon on January 4 to the morning of January 5 as a precautionary measure.

Deer Island Operations

3rd Quarter - FY18

Page 3 of 4

Deer Island Operations & Maintenance Report (continued)

Environmental/Pumping (continued):

Mild and record high temperatures with on target precipitation occurred in February, to be replaced with a stormy pattern in March. The plant achieved the second highest instantaneous peak flow rate in the quarter of 1,183.4 MGD during the afternoon of March 2. This peak flow occurred during a nor'easter rain event that produced a single day total precipitation of 2.30 inches and a daily average plant flow of 950.4 MGD. This storm system also caused significant coastal flooding and damage along the mid-Atlantic and Northeastern coastline as a result of unusually high tides and storm surges. Additionally, damage from the high winds, including hurricane-force winds in New England, produced a high of nearly two (2) million power outages at one point. There were four (4) separate nor'easter storm events in March occurring on March 2, March 7, March 13, and on March 22. These nor'easter storm events brought both rain and/or snow, along with high winds, to the region, including 14.5 inches of snow during a blizzard on March 13, setting a new Boston record for one-day snowfall in the month of March.

On January 8, Deer Island electrical contractors completed testing on breakers, cables, and electrical instrumentation on raw wastewater pumps 1, 2, 3, 4, 5, and 6 at the North Main Pump Station (NMPS) as part of regular preventative maintenance. The testing verified that all electrical systems were in working order.

Work on the Winthrop Terminal VFD (Variable Frequency Drive) and Synchronous Motor Replacement project was started by the contractor in January and will entail demolition of existing older obsolete equipment (electrical systems, motors and VFDs on each of the six (6) raw wastewater pumps). Demolition and installation of new equipment is expected to take approximately two (2) months followed by three (3) months of performance testing. The pumps are currently powered by 600 volts service and will be changed to 4,160 volts, consistent with other major pumps in both the South System Pump Station (SSPS) and the North Main Pump Station (NMPS). Construction activities on pump 6 were in process during the quarter.

Odor Control:

Activated carbon in carbon adsorber (CAD) unit #1 in the North Pumping Odor Control (NPOC) Facility, unit #8 in the West Odor Control (WOC) Facility, and unit #4 in the Residuals Odor Control (ROC) Facility was changed out in February as part of routine practice to replace spent carbon.

Energy and Thermal Power Plant:

Overall, total power generated on-site accounted for 31.2% of Deer Island's total power use for the quarter. Renewable power generated on-site (by Solar, Wind, STGs, and Hydro Turbines) accounted for 25.3% of Deer Island's total electrical power use for the quarter.

Opacity testing for each CTG unit was successfully completed on January 31 as part of the annual regulatory requirements for emissions reporting on the CTGs and the results of this test demonstrated the units were in compliance. The test requires each CTG to be operated (one at a time) at full load for one (1) hour. During this time a certified "smoke reader" visually observes the condition of the stack exhaust and records the results.

On March 14 at 8:37 am, while recovering from a major nor'easter blizzard that hit the area on March 13, Deer Island experienced an unanticipated complete loss of power as a result of an Eversource regional power outage caused by an electrical fault originating in Andrew Square, South Boston. Backup power to Deer Island was immediately restored by placing both CTG units into operation which allowed raw wastewater pumping to resume by 9:00 am. Five (5) pumps were in operation in the South System Pump Station by 9:28 am. Other plant processes and equipment, including Thermal Power Plant boiler operation, were restored sequentially through the day and into the evening. A secondary blending/bypass event lasting 0.52 hours occurred at 11:07 am while in recovery mode from the power outage, and shortly after also recovering from a communications failure on the centralized process information and control system ("PICS"). Refer to the Secondary Blending graph and comment for details of this secondary blending/bypass event. DITP maintained compliance with its NPDES permit effluent limits at all times. Moreover, no sanitary sewer overflows ("SSOs") or combined sewer overflows ("CSOs") occurred as a result of the loss of power and dead restart of DITP.

Clinton AWWTP:

Phosphorus Reduction Facility: Work completed or in progress during 3rd Quarter:

Contractor has begun performance testing of the phosphorus removal disc filters. Awning over the main entryway, installed. The 350 KW Backup Generator for the Chemical Building was removed. The boilers in the Headworks and Dewatering building have both been converted from oil to gas burners.

Installed new day tank for 450KW Backup Generator.

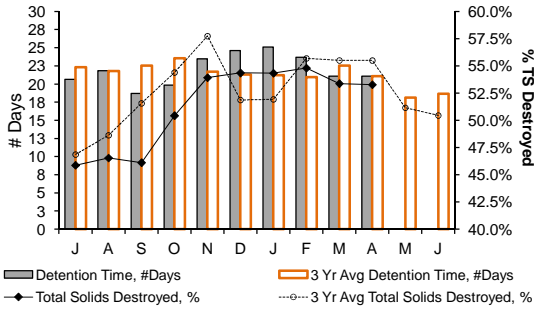
Replaced #1 & #3 Primary Sludge Pumps.

Deer Island Operations and Residuals

3rd Quarter - FY18

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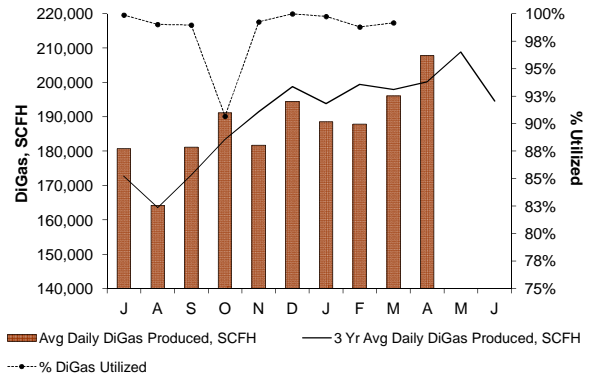
Sludge Detention Time in Digesters and Total Solids Destruction



Total solids (TS) destruction following anaerobic sludge digestion averaged 54.2% during the 3rd Quarter, on target with the 3 year average of 54.4% for the same period, as the sludge detention time in the digesters was 23.3 days. DI operated with an average of 8.0 digesters during the 3rd Quarter, on target with the 3 year average of 8.0 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 significantly impacted by changes in the number of digesters and the resulting shifting around of sludge.

Digester Gas Production and % Utilized

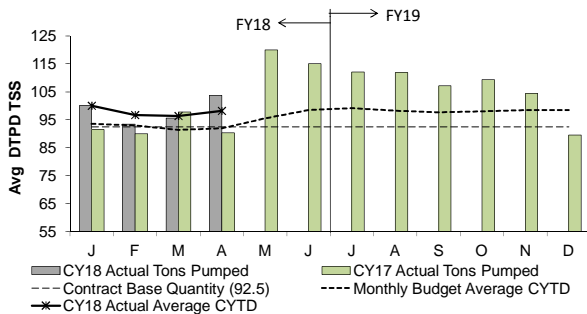


The Avg Daily DiGas Production in the 3rd Quarter was 3.2% below target with the 3 Year Avg Daily DiGas Production. On average, 99.2% of all the DiGas produced in the quarter was utilized at the Thermal Power Plant.

Residuals Pellet Plant

MWRA pays a fixed monthly amount for the calendar year to process up to 92.5 DTPD/TSS as an annual average. The monthly invoice is based on 92.5 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 90.0 DTPD/TSS was changed to 92.5 DTPD/TSS starting on January 1, 2016 with the terms of the new contract. On average, MWRA processes more than 92.5 DTPD/TSS each year (FY18's budget is 99.5 DTPD/TSS and FY19's budget is 98.9 DTPD/TSS).

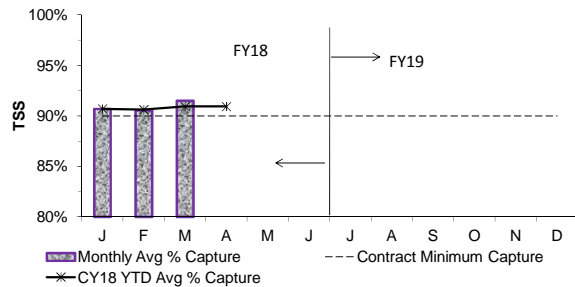
Sludge Pumped From Deer Island



The average quantity of sludge pumped to the FRSA Pellet Plant in the 3rd Quarter of FY18 was 96.4 DTPD - above target with the FY18 budget of 91.3 DTPD for the same period. Sludge delivered to FRSA was higher than expected due to higher than expected total sludge production as a result of higher than expected primary sludge and secondary waste sludge for the quarter.

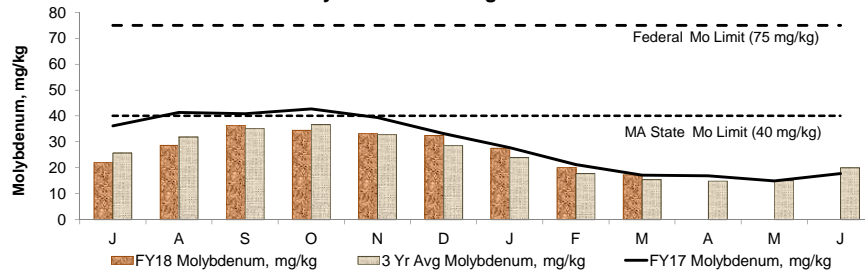
The CY18 average quantity of sludge pumped through March is 96.4 DTPD - 5.5% above target, compared with the CY18 average budget of 91.3 DTPD for the same time period.

Monthly Average % Capture of Processed Sludge



The contract requires NEFCo to capture at least 90.0% of the solids delivered to the Biosolids Processing Facility in Quincy. The CY18 average capture is 90.92%.

Molybdenum in Sludge Fertilizer Pellets



Copper, lead, and molybdenum (Mo) are metals of concern for MWRA as their concentrations in its biosolids have, at times, exceeded regulatory standards for unrestricted use as fertilizer. Molybdenum-based cooling tower water is a significant source of Mo in the sludge fertilizer pellets. The Federal standard for Mo is 75 mg/kg. In 2016, Massachusetts Type I biosolids standard for molybdenum was changed to 40 mg/kg from the previous standard of 25 mg/kg. This has allowed MWRA to sell its pellets in-state for land application whereas the previous limits forced several months' worth of pellets to be shipped out of state. This made it an impractical source of fertilizer for local Massachusetts farms since NEFCo does not distribute product that does not meet the suitability standards.

The levels have been below the DEP Type 1 limit for all three metals. For Mo, levels in the Fore River sludge fertilizer pellets during the 3rd Quarter of FY18 averaged 21.7 mg/kg, 14% higher than the 3 year average, but 46% below the MA State Limit, and 71% below the Federal Limit.

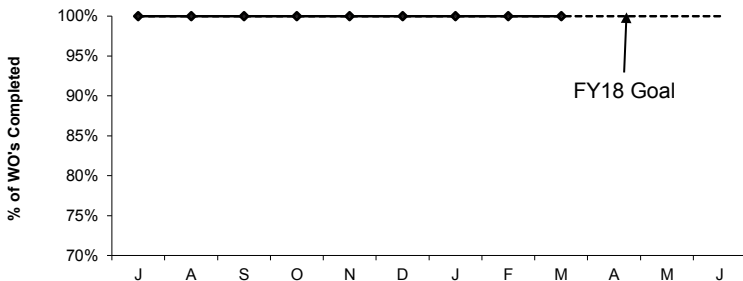
Deer Island Maintenance

3rd Quarter - FY18

Productivity Initiatives

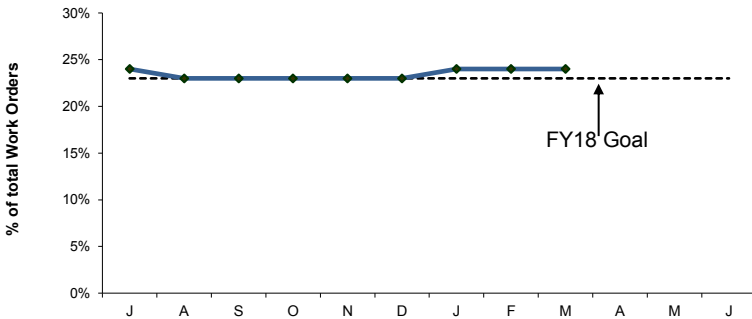
Productivity initiatives include increasing predictive maintenance compliance and increasing PdM work orders. Accomplishing these initiatives should result in a decrease in overall maintenance backlog.

Predictive Maintenance Compliance

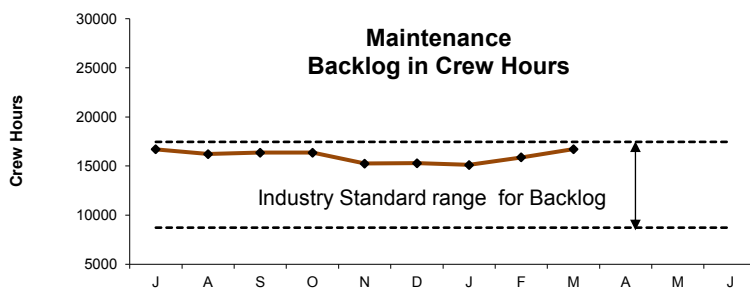


Deer Island's FY18 predictive maintenance goal is 100%. DITP completed 100% of all PdM work orders this quarter. DITP is continuing with an aggressive predictive maintenance program.

Predictive Maintenance



Deer Island's FY18 predictive maintenance goal is 23% of all work orders to be predictive. 24% 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.

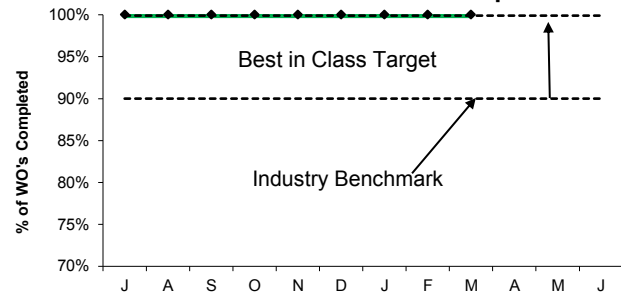


DITP's maintenance backlog at Deer Island is 16,762 hours this quarter. DITP is within the industry average for backlog. The industry Standard for maintenance backlog with 97 staff (currently planned staffing levels) is between 8,730 hours and 17,460 hours. Backlog is affected by three vacancies; two M&O Specialists and one Electrician. Management continues to monitor backlog and to ensure all critical systems and equipment are available.

Proactive Initiatives

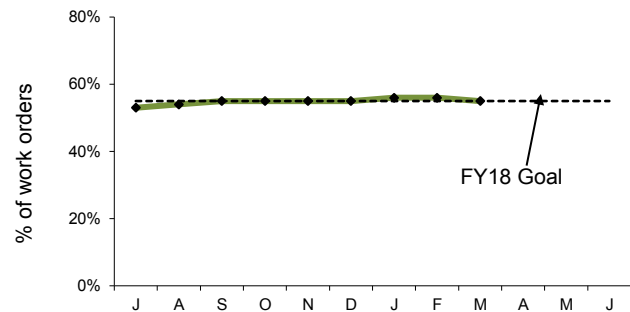
Proactive initiatives include completing 100% of all preventative maintenance tasks and increasing preventative maintenance kitting. These tasks should result in lower maintenance costs.

Preventive Maintenance Compliance



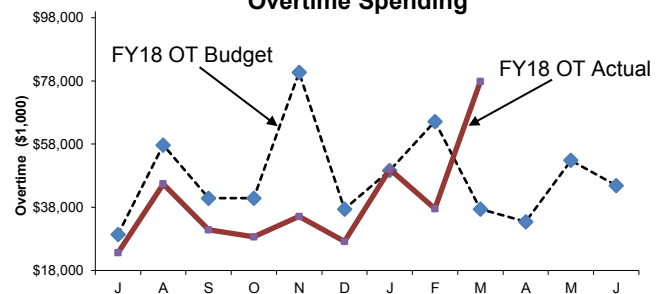
Deer Island's FY18 preventative maintenance goal is 100% completion of all work orders from Operations and Maintenance. DITP completed 100% of all PM work orders this quarter.

Maintenance Kitting



Deer Island's FY18 maintenance kitting goal is 55% of all work orders to be kitted. 55% 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

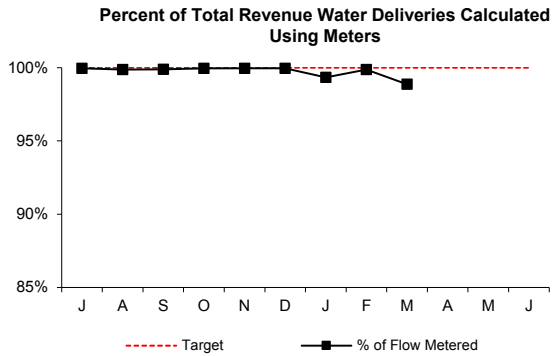


Maintenance overtime was over budget by \$14K this quarter and \$86k under for the year. Management continues to monitor backlog and to ensure all critical equipment and systems are available. This quarters overtime was predominately used for Three Nor'easter Storms, Isolating/Cleaning/Inspecting Gravity Thickeners #5 and #6, Rebuilding of Scum Hopper #1, HVAC Heating Issues due to Extreme Cold and Thermal Power Plant Boiler Start-Up,

Operations Division Metering & Reliability

3rd Quarter - FY18

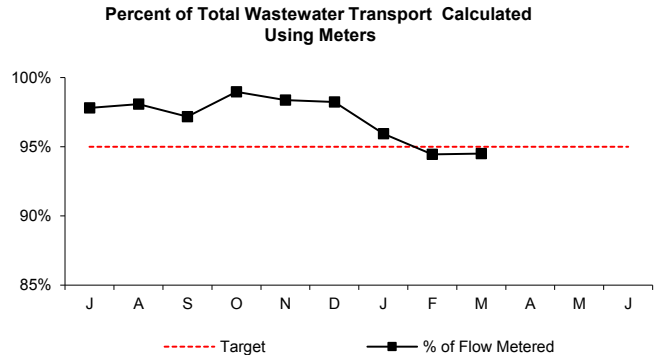
WATER METERS



The target for revenue water deliveries calculated using meters is 100%. Estimates are generated for meters that are out of service due to instrumentation problems or in-house and capital construction projects. During the 3rd quarter of FY18, meter actuals accounted for 99.36% of flow; only 0.64% of total revenue water deliveries were estimated. The following is the breakdown of reasons for estimations:

In-house and Capital Construction Projects - 0.32%
Instrumentation Failure - 0.32%

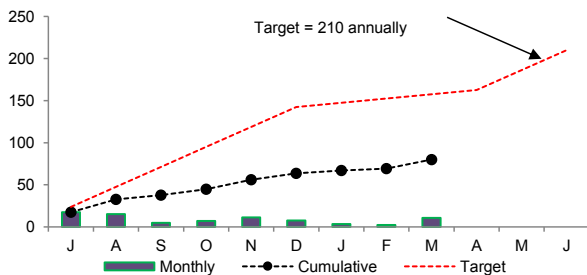
WASTEWATER METERS



The target for revenue wastewater transport calculated using meters is 95%. Estimates are generated for meters missing data due to instrument failure and/or erratic meter behavior. Estimates are produced using data from previous time periods under similar flow conditions. During the 3rd quarter of FY18, meter actuals accounted for 94.96% of flow; only 5.04% of wastewater transport was estimated.

WATER DISTRIBUTION SYSTEM PIPELINES

Miles Surveyed for Leaks



During the 3rd Quarter, 16.4 miles of water mains were inspected. The total inspected for the fiscal year to date is 80.03 miles.

Leak Backlog Summary

Month	J	A	S	O	N	D	J	F	M	A	M	J	Totals
Leaks Detected	4	2	4	6	5	2	1	0	3				27
Leaks Repaired	2	1	3	7	2	3	2	1	2				23
Backlog	8	9	10	9	12	11	10	9	10				88

During the 3rd Quarter, four new leaks were detected. Five leaks were repaired in the 3rdQ; refer to FY18 Leak Report below for details. Also, community service ranging from individual leak location to hydrant surveys were conducted for: Arlington, Chelsea, Chicopee, Lexington, Lynn, Medford, Milton, Revere, Somerville, Stoneham, Wakefield, Weston and Woburn.

FY18 Leak Report as of 3rd Quarter

Date Detected	Location of Leaks	Repaired
07/13/17	General Edwards Bridge, Medford	07/26/17
07/28/17	W. Roxbury Parkway, West Roxbury	07/28/17
08/28/17	#425 Riverside Ave., Medford. SEC-57	08/28/17
07/27/17	#1 Woodland Road @ Pond Street, Stoneham	09/01/17
09/15/17	Columbus St., @ Fenno Street, Chelsea	09/18/17
09/28/17	#436 Riverside Ave., Medford. Section-57	09/28/17
08/13/17	River Road @ Loring Rd, Weston. WASM-4	10/20/17
09/24/17	#215 Common Street, Watertown	10/02/17
09/26/17	#1 Bellevue Street, Waltham	10/10/17
10/16/17	Lynnway (SouthBound) @ Sheppard St.	10/27/17
10/18/17	Hyde Park Ave. @ Hyde Park Pump Station	10/18/17
10/22/17	Vose Ave., Hyde Park	10/22/17
10/23/17	Riverside Ave. @Hall Street - Medford	10/23/17
10/19/17	1062 Hyde Park Ave., Hyde Park, Boston	11/13/17
10/31/17	Revere Beach Pkwy @ Suffolk Downs	11/08/17
11/20/17	Off Ramp 128 Mass Pike-Weston.	12/18/17
11/27/17	#93 Worcester St. Sec-80, Wellesley.	12/13/17
12/29/17	Chelsea Creek Headworks. Chelsea	12/29/17
12/12/17	#352 Norfolk St. Cambridge.	01/23/18
01/09/18	Madison @ Main Street, Malden	01/22/18
07/26/16	Reservoir Playground, Cleveland Circle	02/28/18
03/20/18	Frontage Rd. @Veneer St, Arlington (main break)	03/21/18
03/28/17	50 Sherman St., Sec-85 Revere	03/30/18

Detected	Location of Leaks/Unrepaired
06/08/15	Allendale Rd. @ Grove St., Brookline, Sect 78, located acoustically. Not surfacing.
06/17/15	Washington St at East St., Dedham; Sect 77, located acoustically, not surfacing, need redundant SEH pipeline to enable isolation.
07/01/16	241 Forest St. Winchester, Sect 89, leaking blow of valve, not surfacing. Need redundant NIH pipeline to enable isolation.
12/04/16	1025 W Roxbury Pkwy, Brookline, Sect 95, located acoustically, not surfacing, leaking blow off valve.
12/04/16	710 Ashland St/Summer St. Lynn, Sect 91, not surfacing. Leaking emergency connection valve between MWRA and LWSC systems. LWSC has difficulty isolating 16" main.
07/20/17	Mystic Valley Parkway, Medford. Not surfacing.
11/02/17	Frontage Rd. @ Veneer St., Arlington. Leaking blowoff valve; not surfacing.
11/20/17	Peabody St., @ Washington St., Newton. Air Valve leak, not surfacing.
11/26/17	Nonantum Rd. @ Maple St., Newton. Air valve leak, not surfacing.
3/25/18	Second St. @ Market St, Everett (main leak-night work)

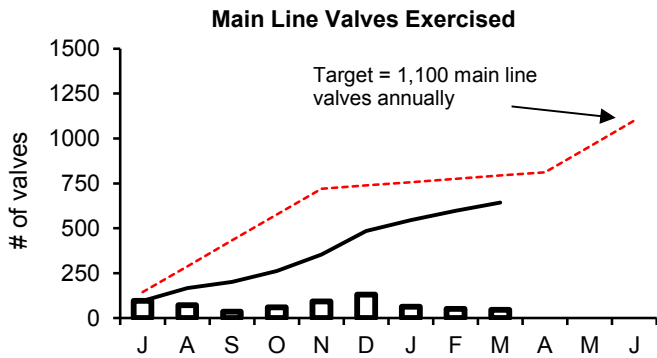
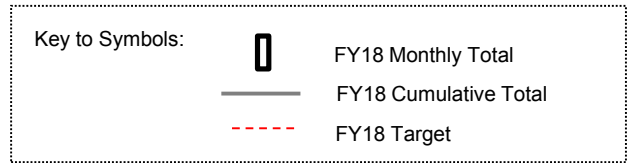
Water Distribution System Valves

3rd Quarter - FY18

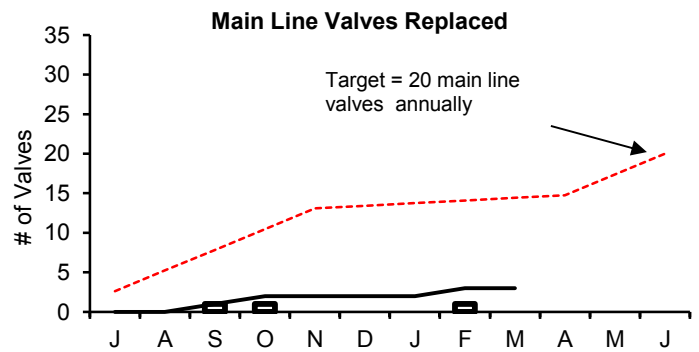
Background

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.

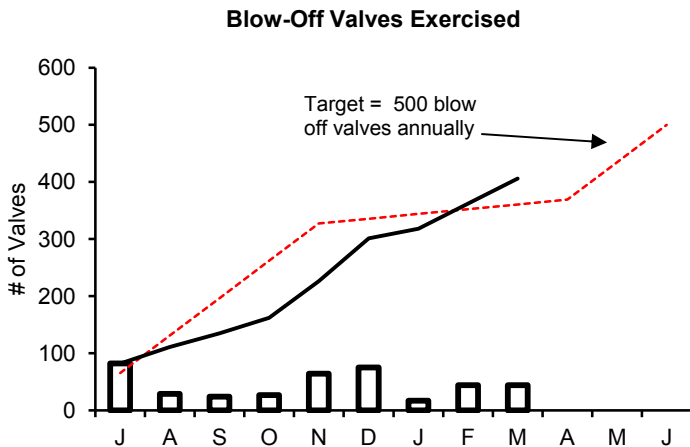
Type of Valve	Inventory #	Operable Percentage	
		FY18 to Date	FY18 Targets
Main Line Valves	2,159	96.5%	95%
Blow-Off Valves	1,317	97.9%	95%
Air Release Valves	1,380	94.8%	95%
Control Valves	49	100.0%	95%



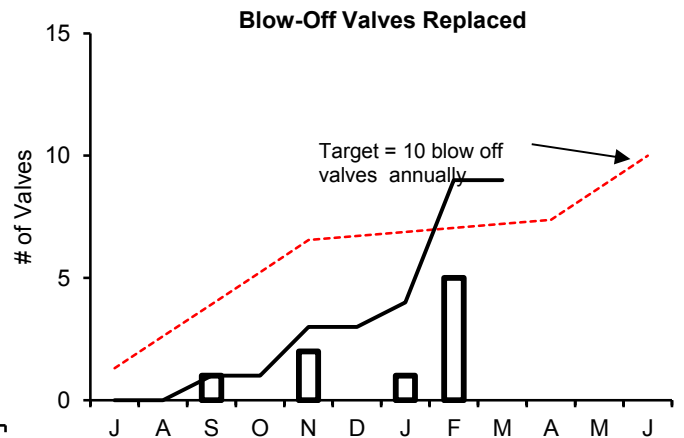
During the 3rd Quarter of FY18, staff exercised 159 main line valves. The total exercised for the fiscal year is 643.



During the 3rd Quarter of FY18, staff replaced one main line valve. The total replaced for the fiscal year is three. Below target due to other projects such as Watertown Pipeline coupling and leak repairs taking priority.



During the 3rd Quarter of FY18, staff exercised 105 blow off valves. The total exercised for the fiscal year is 406.



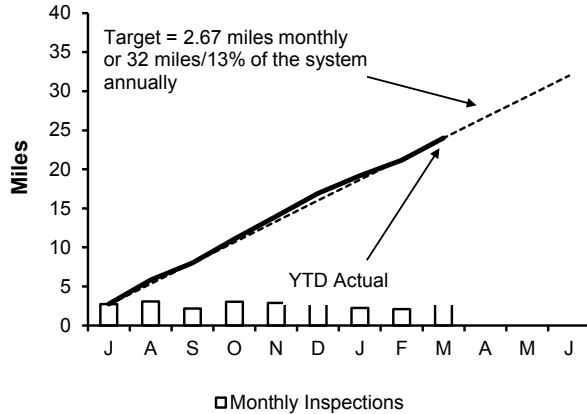
During the 3rd Quarter of FY18, staff replaced six blow off valves. The total replaced for the fiscal year is nine.

Wastewater Pipeline and Structure Inspections and Maintenance

ONB 3rd Quarter - FY18

Inspections

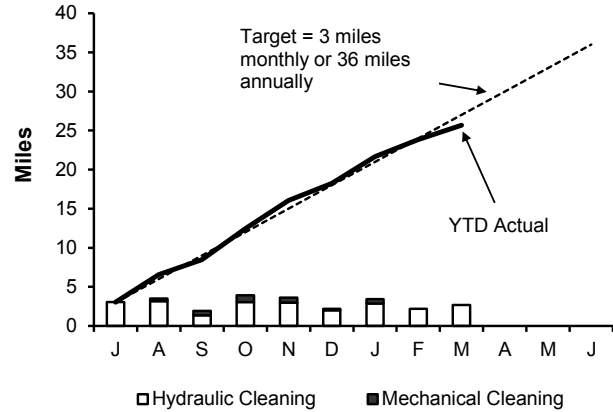
Pipeline Inspections



Staff internally inspected 7.19 miles of MWRA sewer pipeline during this quarter. The year to date total is 24.02 miles. No Community Assistance was provided quarter.

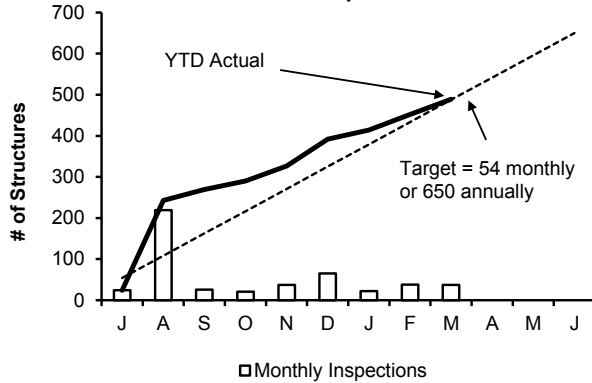
Maintenance

Pipeline Cleaning



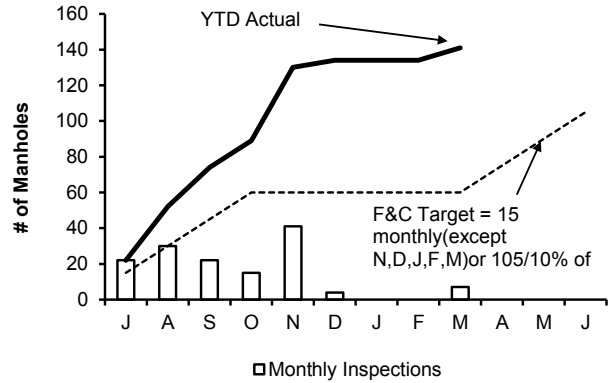
Staff cleaned 8.30 miles of MWRA's sewer system and removed 34 yards of grit and debris during this quarter. The year to date total is 26.53 miles. No Community Assistance was provided this quarter.

Structure Inspections



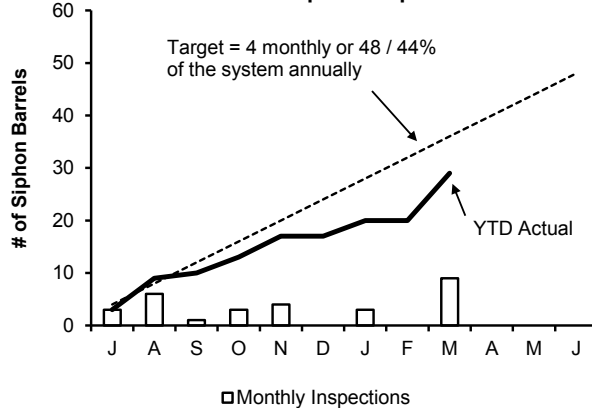
Staff inspected the 36 CSO structures and performed 61 additional manhole/structure inspections during this quarter. The year to date total is 489 inspections.

Manhole Rehabilitation



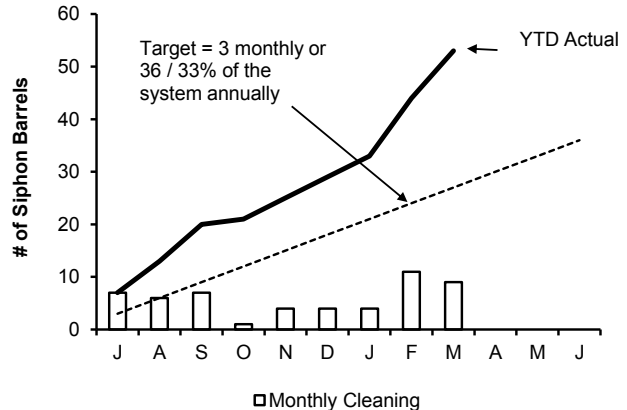
Staff replaced 7 frames & cover during this quarter. The year to date total is 141.

Inverted Siphon Inspections



Staff inspected 12 siphon barrels this quarter. Year to date total is 29 inspections.

Inverted Siphon Cleaning

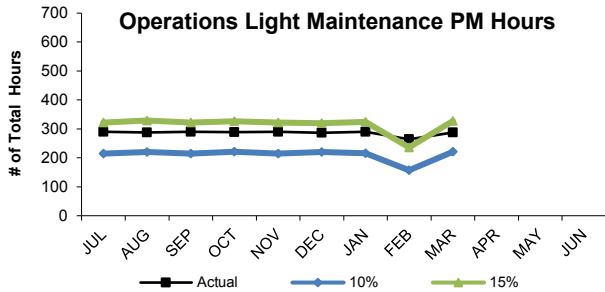


Staff cleaned 9 siphon barrels during this quarter. Year to date total is 53.

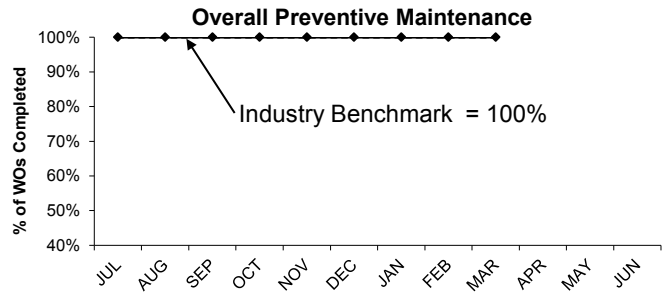
Field Operations' Metropolitan Equipment & Facility Maintenance

3rd Quarter - FY18

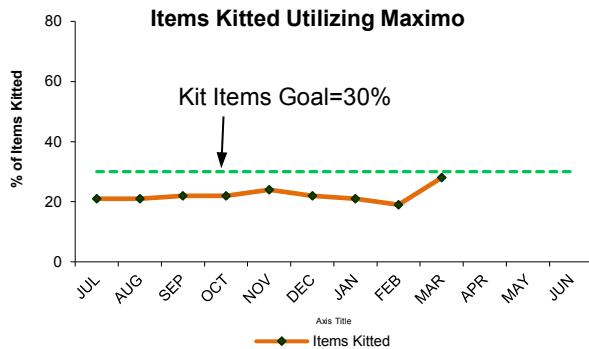
Several maintenance and productivity initiatives are in progress. The goal for the Overall PM completion and the Operator PM completion was raised to 100% for Fiscal Year 2010. The Operator PM and kitting initiatives frees up maintenance staff to perform corrective maintenance and project work, thus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



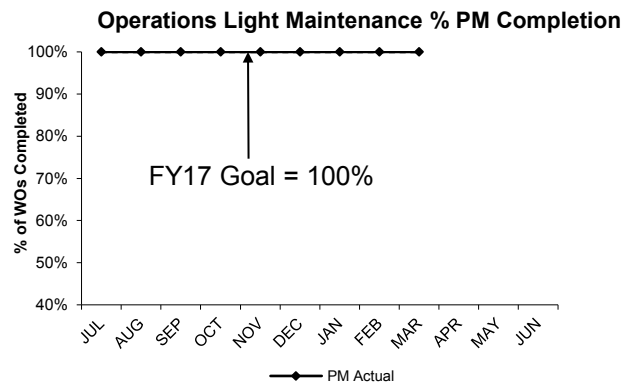
Operations staff averaged 281 hours of preventive maintenance during the 3rd Quarter, an average of 15% of the total PM hours for the 3rd Quarter, which is within the industry benchmark of 10% to 15%.



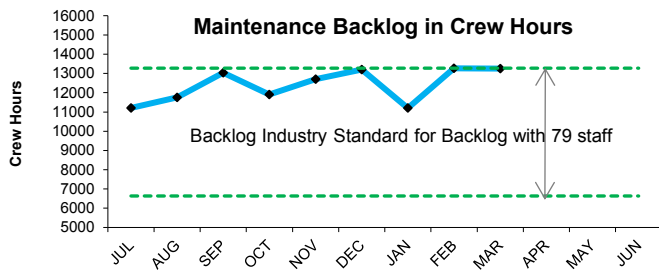
The Field Operations Department (FOD) preventive maintenance goal for FY18 is 100% of all PM work orders. Staff completed an average of 100% of all PM work orders in the 3rd Quarter.



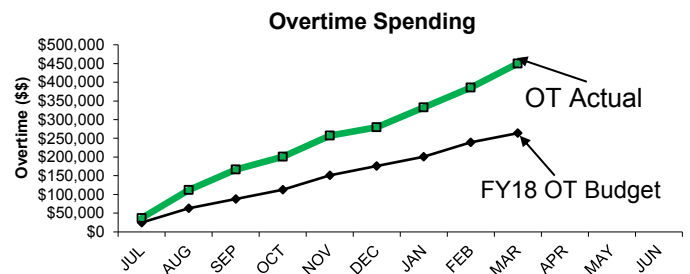
Operation's FY18 maintenance kitting goal has been set at 30% of all work orders to be kitted. Kitting is the staging of parts or material necessary to complete maintenance work. In the 3rd Quarter, 23% of all applicable work orders were kitted. This resulted in more wrench time and increased productivity.



Wastewater Operators complete light maintenance PM's which frees up maintenance staff to perform corrective maintenance. Operations' FY18 PM goal is completion of 100% of all PM work orders assigned. Operations completed an average of 100% of PM work orders in the 3rd Quarter.



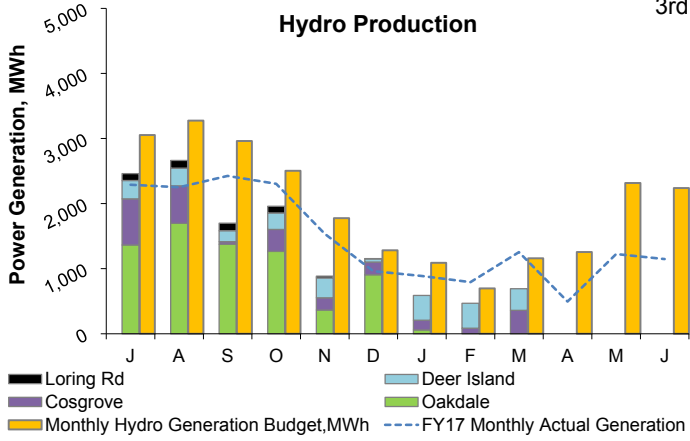
The 3rd Quarter backlog average is 12572 hours. Management's goal is to continue to control overtime and still stay within the industry benchmark of 6450 to 12,940 hours.



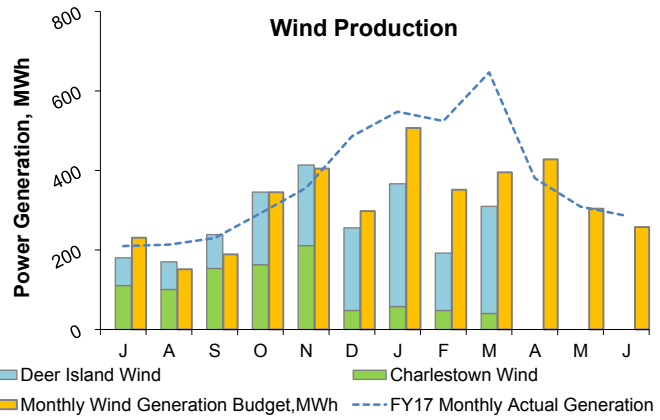
Maintenance overtime was \$84k over budget for the 3rd Quarter. Overtime was used for critical maintenance repairs. Overtime for FY18 is \$450k which is currently 186k over budget for the fiscal year.

Renewable Electricity Generation: Savings and Revenue

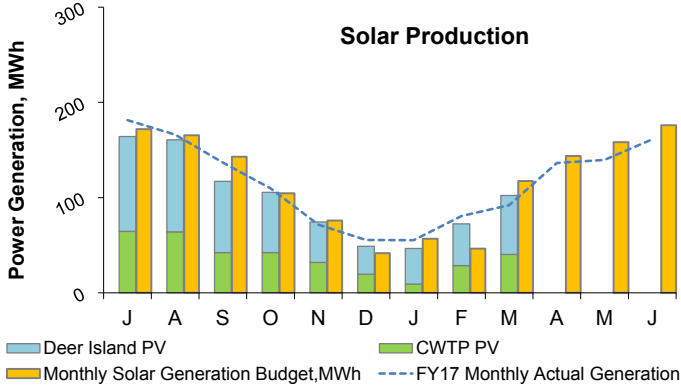
3rd Quarter - FY18



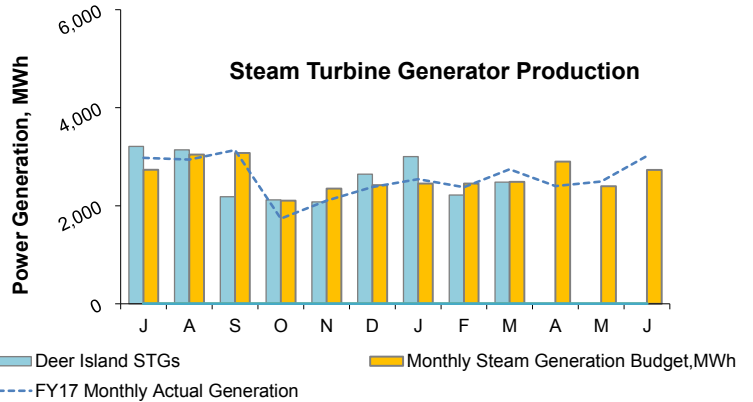
In the third Quarter, the renewable energy produced from all hydro turbines totaled 1,752 MWh; 41% below budget³. The total energy produced to date in FY18 is 12,575 MWh; 29% below budget³. This is due to the Cosgrove generation values being highly underestimated by the utility company, and limited Quabbin transfers through Oakdale. The utility data for Cosgrove is typically corrected and reconciled in later months of the year. Cosgrove data for Q3 has been estimated due to MWRA not receiving statements from the utility in time of reporting. The total savings and revenue² to date in FY18 (actuals through December¹) is \$416,413; 42% below budget³, due to the reasons stated above. The savings and revenue value does not include RPS REC revenue (see next page).



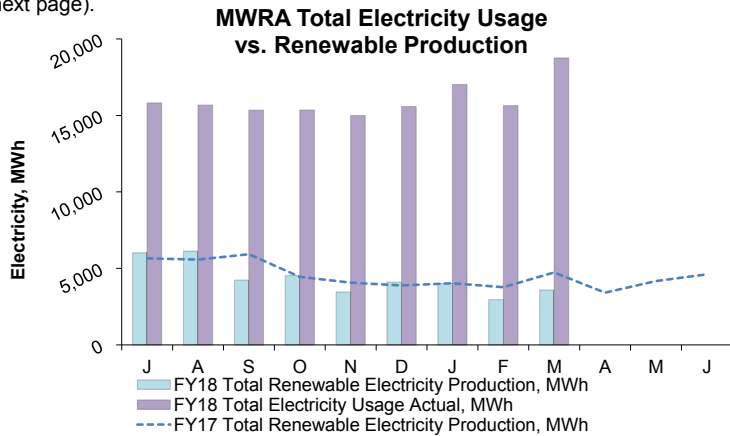
In the third Quarter, the renewable energy produced from all wind turbines totaled 868 MWh; 31% below budget³; mostly due to Charlestown Wind turbine undergoing repairs. The total energy produced to date in FY18 is 2,473 MWh; 14% below budget³. The total savings and revenue² to date in FY18 (actuals through December¹) is \$232,048; 2% above budget³. The savings and revenue value does not include RPS REC revenue (see next page).



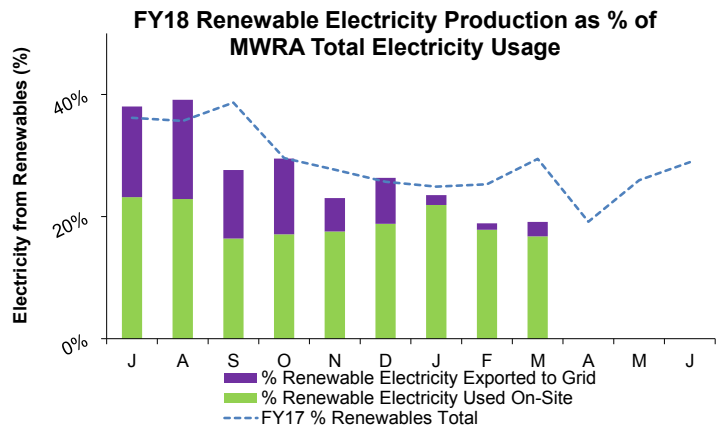
In the third Quarter, the renewable energy produced from all solar PV systems totaled 221 MWh; equal to budget³. The total energy produced to date in FY18 is 892 MWh; 3% below budget³. The total savings and revenue² to date in FY18 (actuals through December¹) is \$80,598; 5% below budget³. The savings and revenue value does not include RPS REC revenue (see next page).



In the third Quarter, the renewable energy produced from all steam turbine generators totaled 7,704 MWh; 4% above budget³. The total energy produced to date in FY18 is 23,078 MWh; equal to budget³. The total savings and revenue² to date in FY18 (actuals through December¹) is \$1,277,511; 5% below budget³. The savings and revenue value does not include RPS REC revenue (see next page).



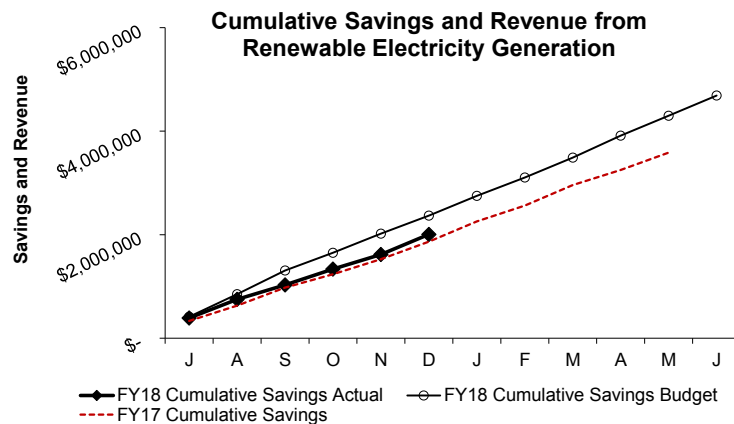
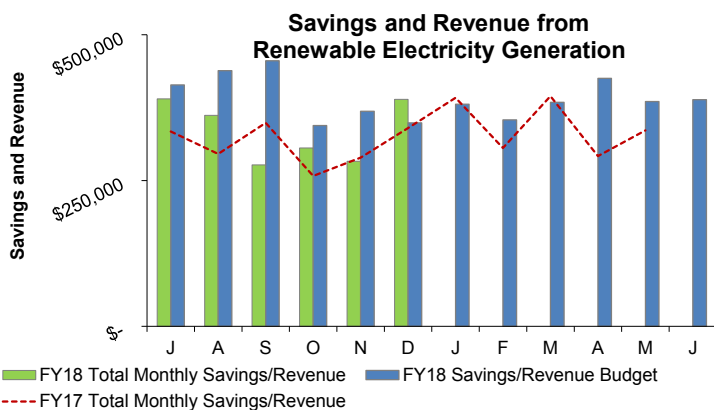
In the first three Quarters of FY18, MWRA's electricity generation by renewable resources totaled 39,019 MWh. Cosgrove hydro generation data was underestimated by the utility and will be reconciled in later months; this will be reflected in future reporting. MWRA's total electricity usage was approximately 144,196 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 9 months of FY18, green power generation represented approximately 27% of total electricity usage. All renewable electricity generated on DI is used on-site (this accounts for more than 50% of MWRA renewable generation). Almost all renewable electricity generated off-DI is exported to the grid.



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

Renewable Electricity Generation: Savings and Revenue

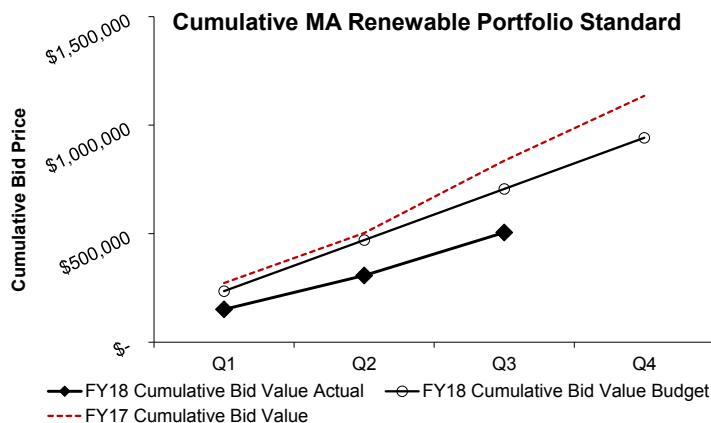
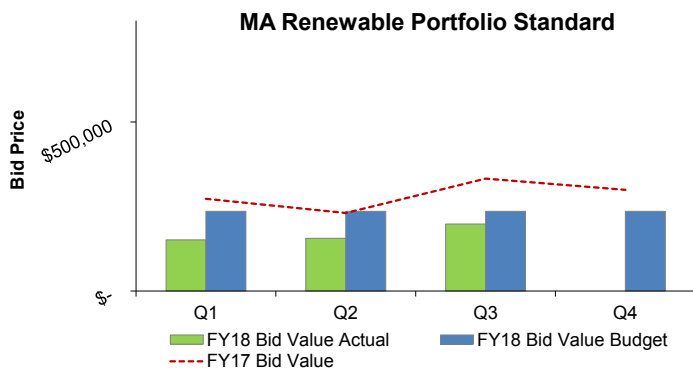
3rd Quarter - FY18



Savings and revenue from MWRA renewable electricity generation in the first half of FY18 (actuals only through December¹) is \$2,006,570; which is 15% below the budget³, partly due to the Cosgrove hydro generation values being underestimated by the utility (this will be reconciled in later months and will be reflected in future reporting), and the DI STGs being off-line or at reduced operation for annual maintenance in September.

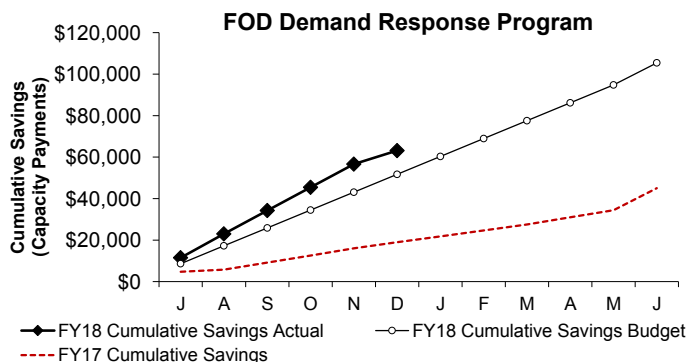
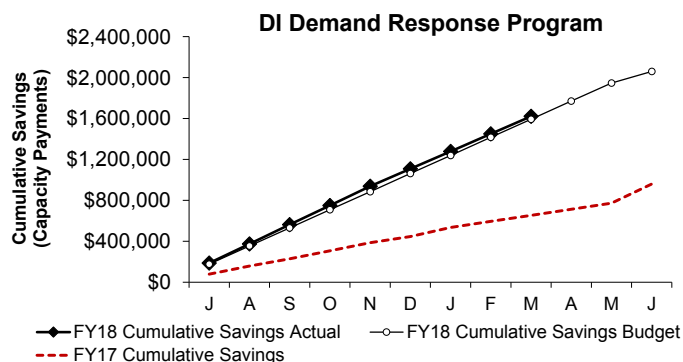
Savings and revenue² from all renewable energy sources include wind turbines, hydroelectric generators, solar panels, and steam turbines (DI). This includes savings and revenue due to electricity generation (does not include avoided fuel costs and RPS RECs).

The use of DITP digester gas as a fuel source provides the benefit of both electricity generation from the steam turbine generators, and provides thermal value for heating the plant, equivalent to approximately 5 million gallons of fuel oil per year (not included in charts above).



Bids were awarded during the 3rd Quarter¹ from MWRA's Class 1, Class 2, and Solar REC renewable energy assets; 7,360 Q3 CY2017 Class I Renewable Energy Certificates (RECs), 4,401 Class II Q3 2017 RECS, and 96 Q3 CY2017 Solar RECs (SRECs) were sold for a total value of \$198,251 RPS revenue; which is 36% below budget³ for the Quarter. This is mainly due to Class I market prices being 69% below budget for the Quarter.

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.

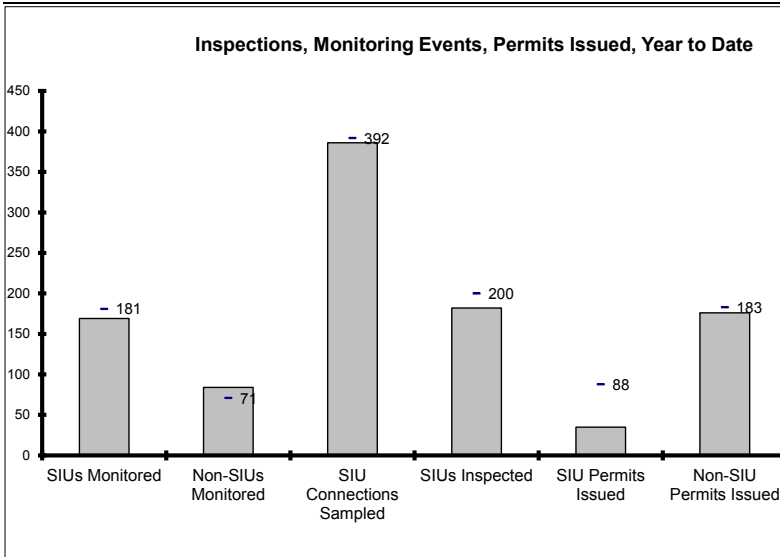


Currently Deer Island, JCWTP, and Loring Rd participate in the ISO-New England Demand Response Programs⁴. By agreeing to reduce demand and operate the facility generators to help reduce the ISO New England grid demand during periods of high energy demand, MWRA receives monthly Capacity Payments from ISO-NE. When MWRA operates the generators during an ISO-NE called event, MWRA also receives energy payments from ISO-NE. FY18 Cumulative savings (Capacity Payments only) through March¹ total \$1,620,875 for DI and \$63,151 for FOD through December¹.

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

3rd Quarter - FY18



EPA Required SIU Monitoring Events for FY18: 181
YTD : **169**

Required Non-SIU Monitoring Events for FY18: 71
YTD : **84**

SIU Connections to be Sampled For FY18: 392
YTD: **386**

EPA Required SIU Inspections for FY18: 200
YTD: **182**

SIU Permits due to Expire In FY18: 88
YTD: **35**

Non-SIU Permits due to Expire for FY18: 183
YTD: **176**

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.

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.

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.

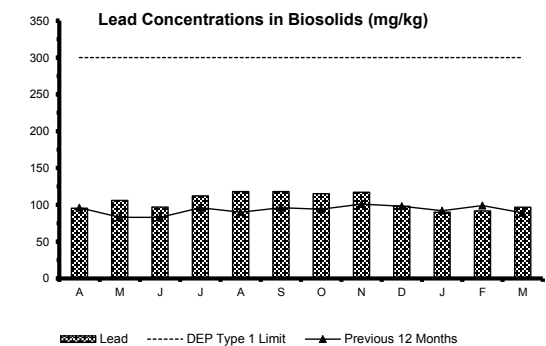
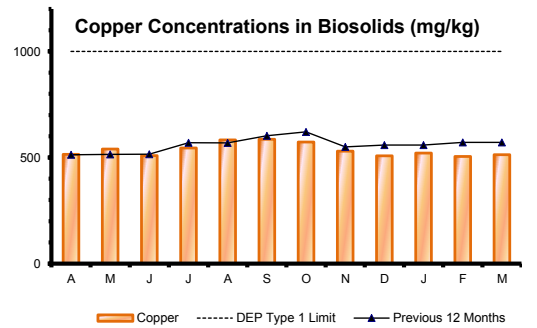
SIU and Non-SIU permits are issued with durations of two to five years, depending on the category of industry, varying the number of permits that expire in a given year.

	Number of Days to Issue a Permit						Total Permits Issued	
	0 to 120		121 to 180		181 or more			
	SIU	Non-SIU	SIU	Non-SIU	SIU	Non-SIU	SIU	Non-SIU
Jul	5	15	0	1	0	2	5	18
Aug	1	46	0	5	0	0	1	51
Sep	2	8	0	3	0	0	2	11
Oct	4	24	0	1	0	0	4	25
Nov	2	8	2	0	1	1	5	9
Dec	0	12	0	2	0	1	0	15
Jan	3	4	3	3	1	2	7	9
Feb	2	12	2	2	0	4	4	18
Mar	1	16	6	0	0	4	7	20
Apr							0	0
May							0	0
Jun							0	0
% YTD	57%	82%	37%	10%	6%	8%	35	176

In the 3rd Quarter of FY18, sixty-five permits were issued, eighteen of which were SIUs. Six of the eighteen SIU permits were issued within 120 days with one beyond the 180-day timeframe- falling far short of the EPA's 90% requirement. There were fifteen non-SIU permits issued beyond the 120-day timeframe with ten of them beyond the 180-day timeframe.

TRAC has been undergoing personnel changes which has affected the workflow, resulting in delays in processing permits. Delays attributable to having to wait for data and/or approval from the municipality in which the industry was operating or intended to operate, mainly affect construction dewatering permits, but in some cases, new start-up industries. Late payment on invoices also is a factor in late issuances.

The new Clinton NPDES permit effective March 1, 2017, requires TRAC to issue/renew all industrial user control mechanisms within 90 days of their expiration date or within 180 days after the industry has been determined to be an SIU. There were no Clinton SIU permits issued during the period.



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.

Copper and lead levels remain relatively constant, below the DEP Type 1 Limit, and within the range of values over the past several years. A discussion of molybdenum concentrations in biosolids is included in the Deer Island Residuals Pellet discussion, on page 4.

Field Operations Highlights

3rd Quarter 2018 – FY18

Western Water Operations and Maintenance

- Carroll Water Treatment: Staff continued to support the Wachusett Aqueduct Pump Station Project. Staff completed half plant activities and placed the plant back into full operation. Staff participated in a week-long training session in Medium Voltage Maintenance Procedures and Safety. Staff repaired leaks in the Sodium Hypochlorite chemical delivery piping.
- Reservoir Operations: Chestnut Hill Gatehouse #1 Repair and Stabilization project is approximately 90% complete. Continue to assist in updating Dams Emergency Action Plans for western dams.
- Grounds and Aqueducts Maintenance: With the frozen ground and lack of mid-season snow, staff cleared a section of the Hultman Aqueduct in Southboro that had been historically muddy with no easy access. Trees were removed and proper drainage restored. Several late season snow storms created significant tree damage along easements and at multiple facilities. Efforts to remove all of the downed trees and restore access to all of the sites are ongoing.
- Brutsch Water Treatment Facility: The facility was shut down for several hours as a result of a high wind and turbidity event at Quabbin Reservoir. Staff were able to shut down the facility remotely and responded to the site during the storm to restart the plant after the wind event had subsided. Treatment effectiveness and service were not disrupted.

Metro Water Operations and Maintenance

- Water Pipeline Program: Five leaks were repaired during the third quarter. One occurred on Section 85 (a 36" pre-stressed concrete cylinder pipe) on March 28 in Revere. A contractor installing a new sewer lateral to a home cut into the pipe believing that it was either a drain or a sewer line. An emergency isolation of Section 85 occurred, with the affected communities being notified. A technician from the manufacturer came to the site and assisted with the installation of a 36" repair saddle on March 30. The main was returned to service in early April after flushing and collection of water quality samples. MWRA Risk Management Staff will be seeking cost recovery from the contractor.
- Six blow off valve retrofit projects were completed during the quarter. Several abandoned vehicles were removed from the Foss Reservoir during the

winter drawdown of the reservoir. Leak detection community assistance was provided to Arlington, Chelsea, Chicopee, Lexington, Lynn, Medford, Milton, Revere, Somerville, Stoneham, Wakefield, Weston, and Woburn.

- Cold Weather Issues: The weather during early January was dominated by biting cold. Several issues occurred within the MWRA and community water systems due to the freezing temperatures. During the evening of January 1, BWSC experienced a leak on Brookline Avenue on the Boston/Brookline line. MWRA, BWSC, and Brookline all participated in a coordinated response. MWRA shut one valve downstream of Meter 245 to Boston; BWSC shut valves within their system which then isolated the leak. It was determined to be a very shallow air valve that froze and cracked. BWSC repaired the leaking valve, and the system returned to its normal configuration on January 2. MWRA experienced three air release valve leaks on three successive days. An air release valve leaked on Thursday night, January 11, on Section 53 on Eastern Avenue in Malden. Staff responded, isolated the water main, stopped the leak, and reactivated the main. On Friday, January 12, an air release valve leaked on Newton Street in Brookline on Section 96. Staff were able to isolate the leaking valve without the need to isolate the entire water main. On Saturday, January 13, another air release valve leaked on Section 96, also on Newton Street. Staff were able to isolate the leaking valve without the need to isolate the entire water main. MWRA Staff assisted Burlington on Sunday, January 14 and Monday, January 15, with leak detection as Burlington was having issues with water storage tank elevations. An emergency connection was opened between Lexington and Burlington to augment the Burlington supply, and closed after two days of operation. Staff also assisted Chicopee in locating a leak on a 6" water main. Several MWRA water mains across bridges were flushed to confirm water flowing to avoid freezing during the cold spell. On January 29, BWSC had a leaking air release valve on the bridge crossing between Somerville and Boston at Sullivan Square. Somerville, MWRA, and BWSC all responded to the site. BWSC was able to isolate the leak using all BWSC valves.

EAP for City, City Extension and Dorchester Tunnels: Operations Engineering and Planning are finalizing operation plans for the reconfiguration of

Field Operations Highlights

3rd Quarter 2018 – FY18

the system during a tunnel isolation. Training will be conducted in the spring to give staff an overview of how to reconfigure MWRA service zones to supply communities if the City, City Tunnel Extension or the Dorchester Tunnels must be isolated.

SCADA & Process Control

- Water System Work: Upgrading the Loring Road Ventilation System to reduce electrical demand charges; Created SCADA/TELOG Top View Alarms; In-house project implement PLC replacement at Brutsch Water Treatment Facility.
- Wastewater Work: Supported Chelsea Headworks Rehabilitation, Caruso Pump Station Improvements and Nut Island Odor Control Improvements projects. Continued work on Prison Point Storm Water Wet Well Project; Completed in-house upgrade of the flow meter at Somerville Marginal Remote.

Wastewater Operations & Maintenance

- Remote Headworks Upgrades: Channel #1 was turned over to the contractor for rehabilitation at the beginning of January. Channel #1 rehabilitation, PCB remediation, electrical service, plumbing, fire protection and masonry upgrades, equipment relocation and new water main installation were continuously ongoing throughout the Quarter.
- Alewife Brook Pump Station Rehabilitation: The bypass pumping system was placed in service and the facility pumps were taken out of service on January 1st. Staff were onsite monitoring its operation during rain events throughout the Quarter.
- Nut Island Standard Operating Procedures (SOPs): Staff updated SOPs for putting screening channels and grit vortexes online and offline in remote control (via SCADA) and manual (local) control. Training for all Operations Staff on the updated SOPs was ongoing during the Quarter. Operations, Process Control and SCADA Staff are reviewing and updating the Nut Island Isolation Training to be given to all Operations Staff.
- Headworks Ductwork Cleaning & Repair: Staff reviewed and provided comments for the contractor's work plans for Columbus Park, Ward Street and Nut Island Headworks. The contractor has completed the duct cleaning at both Columbus Park and Ward Street and started the cleaning at Nut Island in February.

Metering

- Planning: Work on the Wastewater Metering Replacement project continues.
- Community Assistance: Notification and assistance was provided to communities 34 separate times where their water use was higher than expected.

Environmental Quality-Water

Regulatory and Non-Regulatory Sampling Programs: Staff collected samples for the Unregulated Contaminant Monitoring Rule (UCMR4) Program, that will monitor for 30 contaminants during 2018-2020 that do yet not have a health based standard set

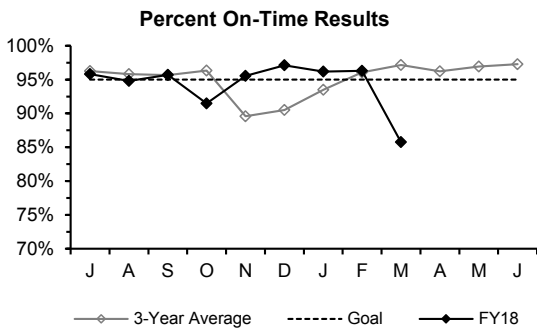
Community Support: Staff provided support to the Peabody in response to customer complaints about unpleasant odors in drinking water supplied by Winona Pond.

Contaminant Monitoring System: Staff assisted a diving contractor with the repair of the intake lines at the Route 12 Shed on January 31st. Repairs were completed and intake lines have been restored to their original depth in the reservoir. Staff, submitted a grant application to the Executive Office of Public Safety and Security, for a Radiological Monitor. Awards for grants are expected to be announced in Summer 2018.

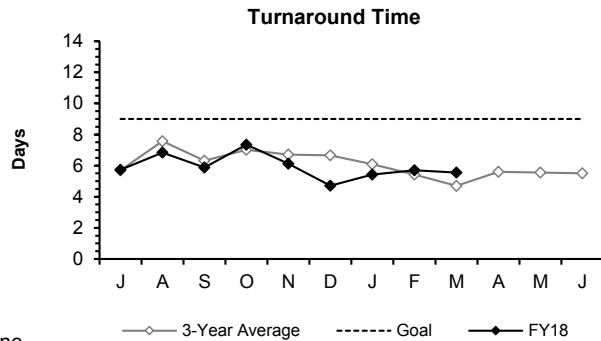
Environmental Quality-Wastewater

- Ambient Monitoring: At a meeting of EPA's Outfall Monitoring Science Advisory Panel, MWRA Staff and Consultants presented results from 2016 and 2017 monitoring. Regulators, science panel members, and members of the public-expressed confidence in MWRA's monitoring and the findings that the Boston Harbor Project has resulted in recovery in Boston Harbor without degrading the environment near the current outfall in Massachusetts Bay. Analysis and quality review of samples collected in 2017 was completed and data were discussed at a technical workshop in preparation for use synthesis reports.
- Harbor/CSO Monitoring: CSO receiving water monitoring continues in support of the water quality standards variance and the CSO assessment. CSO facility influent samples were collected at the request of Massachusetts Department of Environmental Protection (DEP). Biweekly harbor-wide monitoring continued.

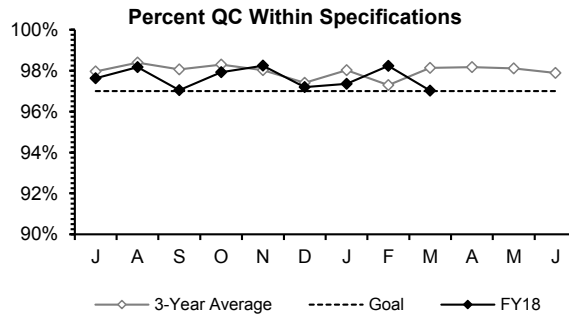
Laboratory Services 3rd Quarter - FY18



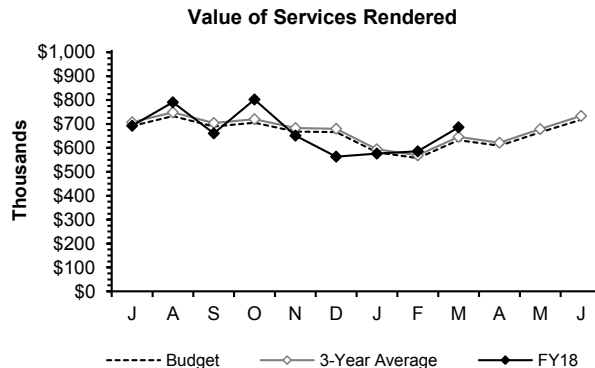
The Percent On-Time measurement was below the 95% goal one month of the quarter due to catching up on longer turnaround time projects. All regulatory reporting deadlines were met.



Turnaround Time was faster than the 9-day goal three months of the quarter.



Percent of QC tests meeting specifications was above the 97% in-house goal three months of the quarter.



Value of Services Rendered was above the seasonally adjusted budget projection two months of the quarter. The workload for School Lead Testing has been lower than budgeted.

Highlights:

Dr. Delaney was elected chair of EPA's Environmental Laboratory Advisory Board (ELAB).

Quality Assurance:

The every two years DEP lab certification audit at the Quabbin Lab had no deficiencies or deviations. Lab Services passed 359 of 363 (98.9%) of chemistry proficiency tests on the first try. Passing these is required to maintain DEP certification. Since September the Lab has worked diligently to address the changes in EPA's Methods Update Rule for wastewater testing. This effort is nearly complete and will be recognized when DEP issues new lab certifications in July.

CSO Assessment:

We continued to perform weekend CSO receiving water sampling in the Charles and Mystic Rivers during/after significant wet weather events. This is intended to give additional data for the CSO Assessment to document the recovery of the rivers after it rains.

Clinton:

A special study of the mass balance of copper, iron, and phosphorus in the Clinton Treatment Plant is being conducted to understand the effect of new phosphorus removal approach, requiring rush turnaround time.

DITP: Experiments continue to simulate the die off of *enterococcus* bacteria and decay of chlorine in the DITP outfall tunnel.

Drinking Water:

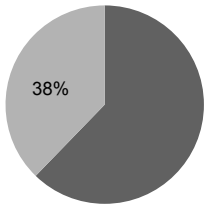
Sampling has begun for the new 3-year Unregulated Contaminant Monitoring Rule (UCMR). Most of this testing is being performed by EPA-approved contract labs. This monitoring helps EPA decide which contaminants need to be regulated.

Mobile Lab: A successful drill of the Mobile Lab instruments was conducted by Lab staff at the Carroll Water Treatment Plant.

CONSTRUCTION PROGRAMS

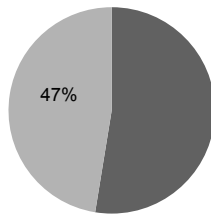
Projects In Construction 3rd Quarter– FY18

Money



■ Amount Remaining
■ Billed to Date

Time



■ Days Remaining
■ Days Expended

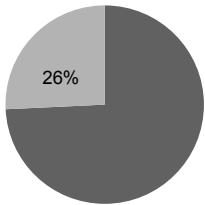
Reading Extension Sewer Rehabilitation

Project Summary: This project involves the rehabilitation of 10,820-linear feet of the Reading Extension Sewer and 2,280-linear feet of the Metropolitan Sewer and 62 associated manholes/structures.

Notice to Proceed: 10-Aug-2017 *Contract Completion:* 10-Dec-2018

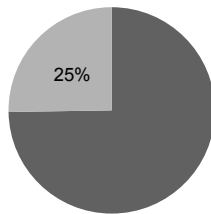
Status and Issues: A progress meeting was held on 3/15/2018 to discuss pending repairs to defecting liners.

Money



■ Amount Remaining
■ Billed to Date

Time



■ Days Remaining
■ Days Expended

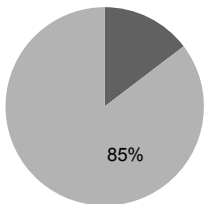
Chelsea Creek Headworks Upgrade

Project Summary: This project involves a major upgrade to the entire facility including: automation of screening collection & solids conveyance, replacement of the odor control, HVAC and electrical systems.

Notice to Proceed: 22-Nov-2016 *Contract Completion:* 21-Nov-2020

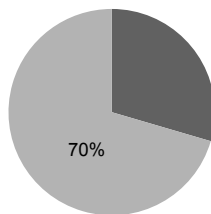
Status and Issues: As of March, the Contractor excavated and installed phase 1 of the 36" water main, reinstalled fuel UST, began installation of 4" domestic and 6" fire water mains and placed concrete for odor control pedestals.

Money



■ Amount Remaining
■ Billed to Date

Time



■ Days Remaining
■ Days Expended

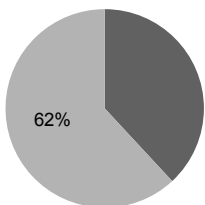
Wachusett Aqueduct Pumping Station

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

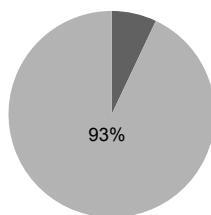
Status and Issues: As of March, the Contractor installed concrete, reinforcing steel and frame form work at the wing walls and 90 degree cast-in place elbow.

Money



■ Amount Remaining
■ Billed to Date

Time



■ Days Remaining
■ Days Expended

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.

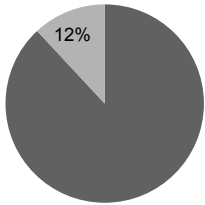
Notice to Proceed: 29-Jan-2016 *Contract Completion:* 31-May-2018

Status and Issues: As of March, the Contractor completed the mechanical installation of bar screens 1 & 2, removed the existing generator and began installation of structural steel in the Pump Room.

Projects In Construction

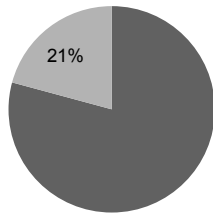
3rd Quarter– FY18

Money



■ Amount Remaining
■ Billed to Date

Time



■ Days Remaining
■ Days Expended

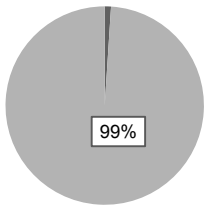
NIH Section 110 - Stoneham

Project Summary: This project consists of the replacement of 14,000 linear feet of 48-inch diameter transmission main in the Town of Stoneham.

Notice to Proceed: 5-Sep-2017 *Contract Completion:* 1-Jun-2020

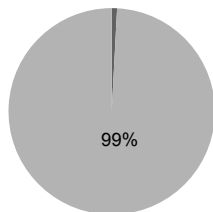
Status and Issues: As of March, the Contractor installed 294-LF of 48" DIP water main along Cottage and Wright Streets, including the Montvale Avenue crossing. They pre-drilled ledge along Main Street.

Money



■ Amount Remaining
■ Billed to Date

Time



■ Days Remaining
■ Days Expended

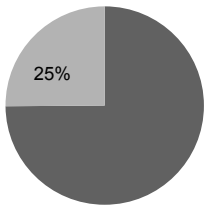
DITP Valves and Piping Replacements

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-Sep-2017

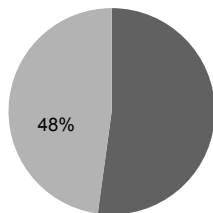
Status and Issues: The Contactor has demobilized and has completed all punchlist items. The final paperwork is being processed.

Money



■ Amount Remaining
■ Billed to Date

Time



■ Days Remaining
■ Days Expended

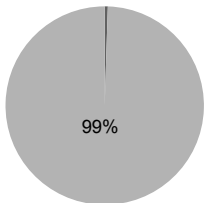
Winthrop Terminal VFD and Motor

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

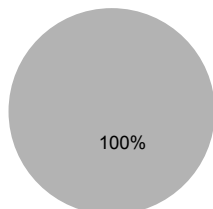
Status and Issues: The demolition of VFD No 6 is complete. VFD No.6 commission testing is on-going.

Money



■ Amount Remaining
■ Billed to Date

Time



■ Days Remaining
■ Days Expended

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: This project is complete.

CSO CONTROL PROGRAM

3rd Quarter – FY18

All 35 projects in the Long-Term CSO Control Plan are complete, in compliance with Schedule Seven. Of the \$910.6 million budget in the FY18 CIP for the CSO Control Program, approximately \$8 million remain to be spent through 2021.

Project/Item	Status as of March 31, 2018
BWSC Dorchester Interceptor Inflow Removal	MWRA’s CIP and the MOU/FAA with BWSC included \$5.4 million for additional inflow removal from the BWSC Dorchester Interceptor system in the South Dorchester Bay Sewer Separation area, of which \$1.7 million was transferred to the BWSC MOU/FAA CSO account and \$1.6 million of that was withdrawn by BWSC to fund related design and construction work. On May 17, 2017, MWRA’s Board of Directors authorized removing the remaining \$3.8 million from the BWSC MOU/FAA (which ended on June 30, 2017) and including this funding amount in a separate, 4-year financial assistance agreement with BWSC effective July 1, 2017. The new agreement limits the financial assistance to reimbursement of the eligible cost of construction work approved by MWRA.
City of Cambridge Memorandum of Understanding and Financial Assistance Agreement	The City of Cambridge attained substantial completion of its last project, CAM004 Sewer Separation, in December 2015 in compliance with Schedule Seven, and attained substantial completion of related surface restoration work by the end of 2017. MWRA made a final transfer of funds to the Cambridge CSO account in December 2017, in the amount of \$1,254,551, to cover eligible costs (certain past and future) through June 30, 2018, when the MOU/FAA is scheduled to end. Over the remaining term, Cambridge will continue to support MWRA’s final eligibility reviews.
MWRA CSO Performance Assessment	MWRA issued the Notice to Proceed with the contract for CSO Post-Construction Monitoring and Performance Assessment to AECOM Technical Services, Inc., in November 2017. The contract includes CSO inspections, overflow metering, hydraulic modeling, system performance assessments and water quality compliance assessments culminating in the submission of a report verifying attainment of court-ordered levels of CSO control to EPA and DEP in December 2020, in compliance with the last milestone in Schedule Seven. AECOM has completed inspections of more than 200 active or closed CSO regulator structures in part to support development of an overflow metering plan. The consultant’s temporary meters are scheduled to be operational at 58 active CSO regulators by April 15. AECOM is also reviewing historical receiving water quality data collected by MWRA’s Harbor Monitoring Program and is analyzing Alewife Brook data as a pilot, prior to recommending statistical analysis and assessment approaches for all of the receiving waters affected or formerly affected by CSO.

CIP Expenditures

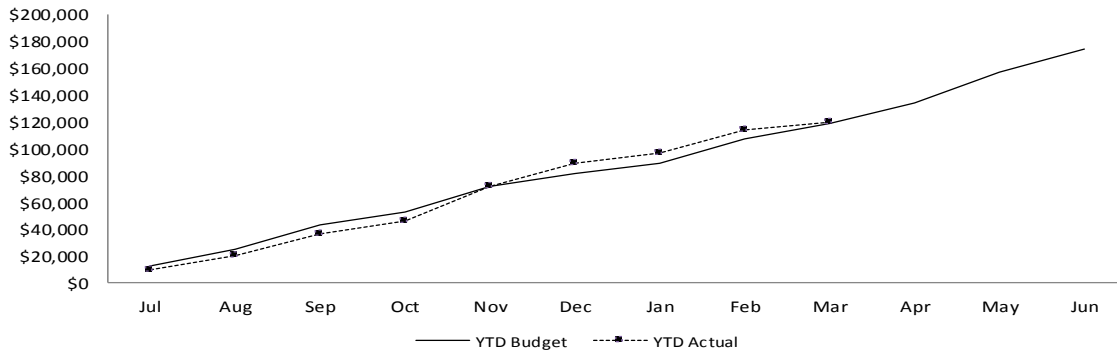
3rd Quarter – FY18

FY18 Capital Improvement Program Expenditure Variances through March by Program (\$ in thousands)				
Program	FY18 Budget Through March	FY18 Actual Through March	Variance Amount	Variance Percent
Wastewater	59,167	50,412	(8,755)	-15%
Waterworks	55,178	67,816	12,639	23%
Business and Operations Support	4,180	1,981	(2,199)	-53%
Total	\$118,525	\$120,209	\$1,684	1%

Project underspending within Wastewater was due to construction delays related to bypass pumping for the Alewife Brook Pump Station Construction, and for water main and fuel storage installations for the Chelsea Creek Upgrades Construction, less than budgeted community requests for I/I grants and loans, system testing delays for the Clinton Phosphorus Reduction contract, as well as work anticipated for FY18 that was completed in FY17 for the Deer Island Digester Sludge Pump Replacement Construction Phase 2 and the Deer Island Fuel Oil System Upgrades, lower award than budgeted for the Wastewater Metering, Study and Design contract, delay in award for the Chemical Bulk Storage Tanks Relining, and updated cost estimates for final work on the Cambridge Sewer Separation project. This was partially offset by progress on Chelsea Creek Upgrades Design/ESDC, the Winthrop Terminal Facility VFD Replacement, and Cambridge Sewer Study of Sections 186, 4, 5, and 6. Project overspending in Waterworks was due to construction progress for the Northern Intermediate High Phases 1C, 2, and 1B, Southern Extra High Section 111 Construction 1, Wachusett Pump Station Construction, Marlborough Maintenance Facility, greater than anticipated requests for community loans, timing of watershed land purchases, and progress on boring work for the Weston Aqueduct Supply Mains Design/MEPA/REI contract. This was partially offset by delay in award for Southern Extra High Redundancy Section 111 Construction 3, delay in pipe installation for Section 14 Pipe Relocation (Malden), and delay in Notice to Proceed and lower award than budgeted for Chestnut Hill Gatehouse #1 Repair.

Budget vs. Actual CIP Expenditures (\$ in thousands)

Total FY18 CIP Budget of \$174,539



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 as of 3/24/2018	\$51.1 million
Unused capacity under the debt cap:	\$1.388 billion
Estimated date for exhausting construction fund without new borrowing:	MAY-18
Estimated date for debt cap increase to support new borrowing:	Not anticipated at this time
Commercial paper/Revolving loan outstanding:	\$229 million
Commercial paper capacity / Revolving Loan	\$ 350 million
Budgeted FY18 capital spending*:	\$160 million

* Cash based spending is discounted for construction retainage.

DRINKING WATER QUALITY AND SUPPLY

Source Water – Microbial Results and UV Absorbance

3rd Quarter – FY18

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 raw water tap before being treated and entering the CVA system.

All samples collected during the 3rd 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.

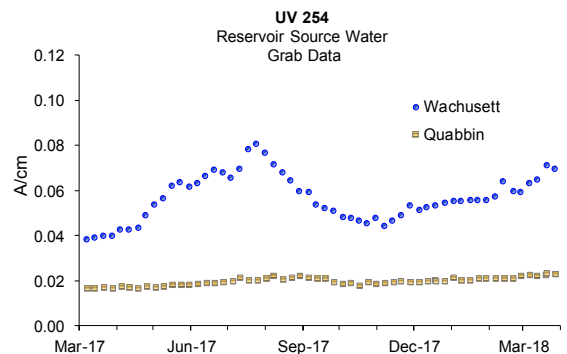
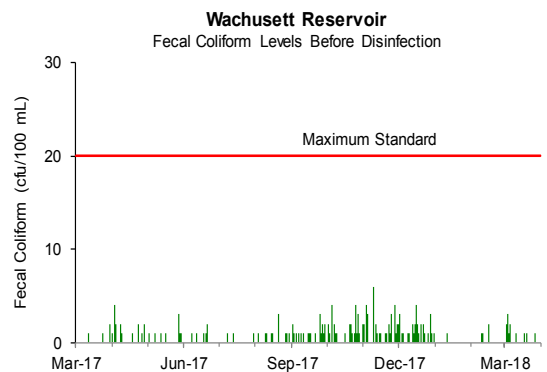
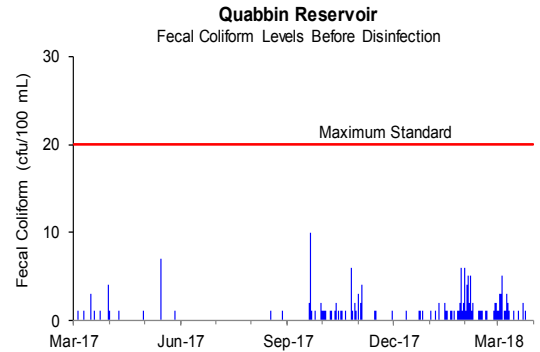
All samples collected during the 3rd Quarter were below 20 cfu/100ml. **For the current six-month period, 0.0% of the samples exceeded a count of 20 cfu/100mL.**

Source Water – 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 0.023 A/cm.

Wachusett Reservoir UV-254 levels are currently around 0.070 A/cm.



Source Water – Turbidity

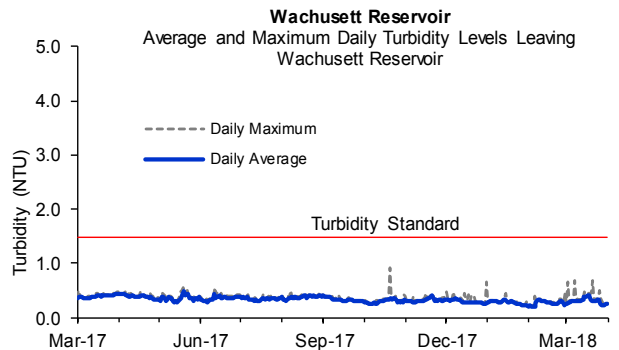
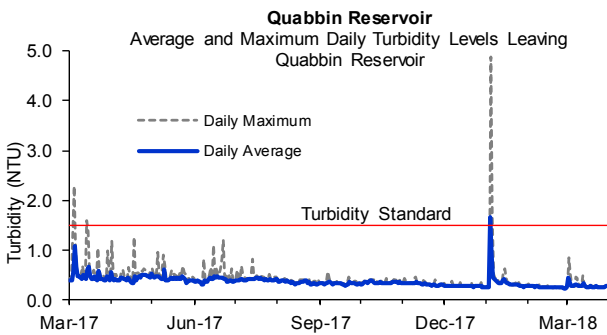
3rd Quarter – FY18

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 five NTU (Nephelometric Turbidity Units), and water only can be above one 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 February and March.

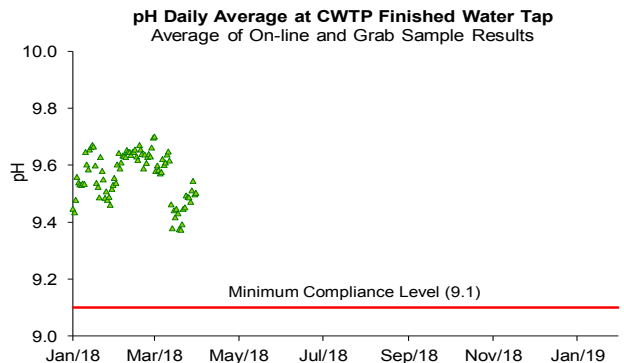
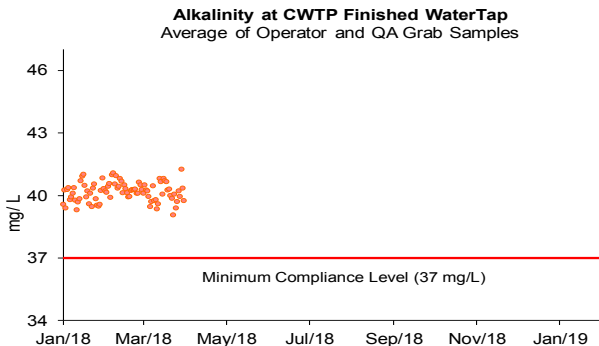
- On January 4 and into January 5, a nor'easter with high winds (over 40 mph) caused a maximum turbidity of 4.9 NTU at BWTF's raw water intake. As a result of the elevated turbidity in the Quabbin Reservoir, MWRA shut down BWTF at 3:20pm, with supply then coming from MWRA and community water tanks. DEP and the CVA communities were provided multiple notifications as data became available, beginning at 1:30pm on January 4. When the weather conditions improved, BWTF was restarted at 9:50pm. During this period, UV treatment was unaffected, chlorine residuals leaving the facility and at Ludlow Monitoring Station (LMS) were maintained and CT was well above regulatory requirements. All samples taken at LMS during and after the event were absent of total coliform. There was no impact to water quality to the CVA communities.



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 finished water samples have a minimum compliance level of 9.1 for pH and 37 mg/L for alkalinity. Samples from 27 distribution system locations 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 March 15 and 16, 2018. Distribution system sample pH ranged from 9.5 to 9.7 and alkalinity ranged from 39 to 41 mg/L. No sample results were below DEP limits for this quarter.



Treated Water – Disinfection Effectiveness

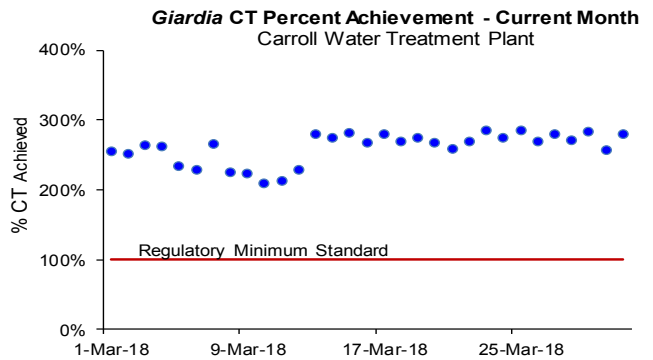
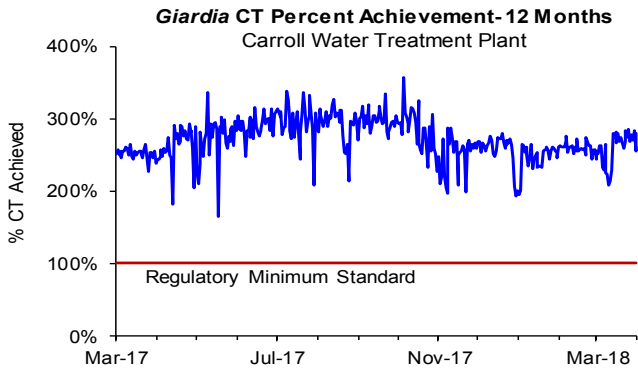
3rd Quarter – FY18

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.

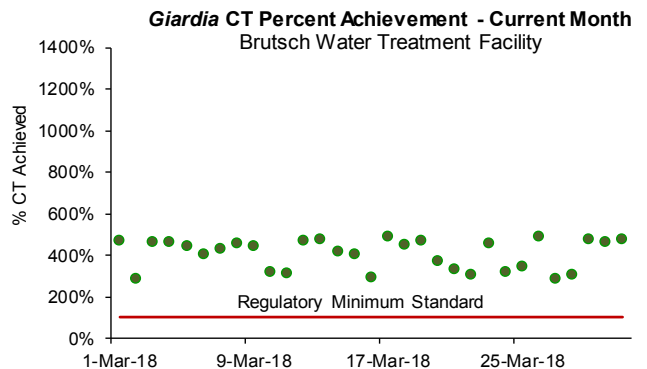
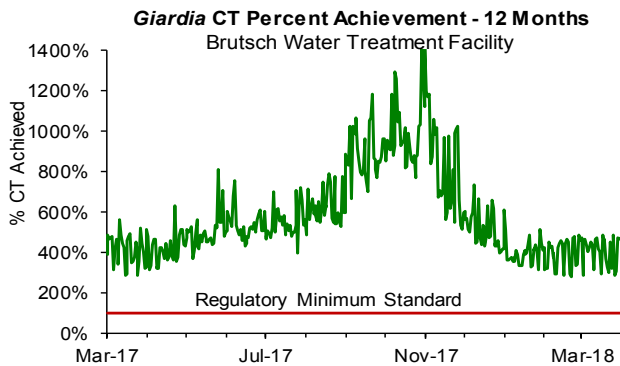
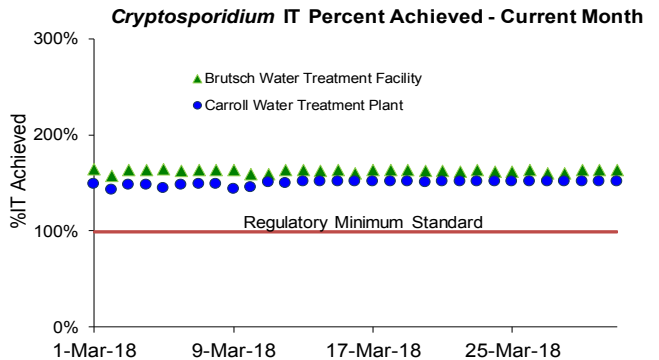
Wachusett Reservoir – MetroWest/Metro Boston Supply:

- Ozone dose at the CWTP varied between 1.6 to 2.2 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 target of >0.75 mg/L (November 01 – May 31) and >1.0 mg/L (June 1– October 31) at Ludlow Monitoring Station.
- The chlorine dose at BWTF varied between 1.3 to 1.5 mg/L for the quarter.
- Giardia* CT was maintained above 100% at all times the plant was providing water into the distribution system for the quarter.
- Cryptosporidium* IT was maintained above 100% during the month. Off-spec water was less than 5%.



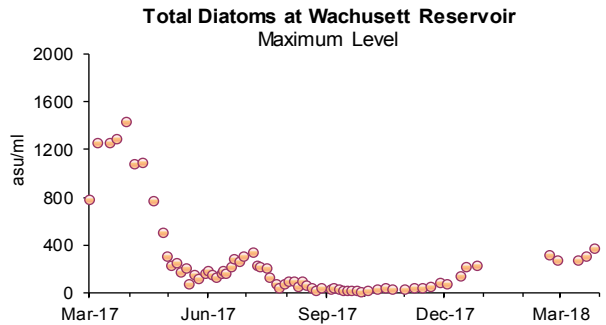
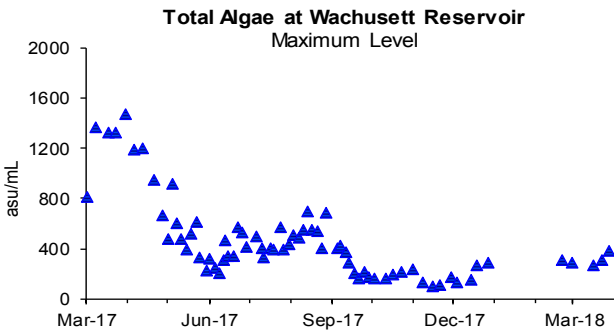
Source Water - Algae

3rd Quarter – FY18

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

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

In the 3rd Quarter, one complaint which may be related to algae was reported from a local water department. There were no samples collected between December 28, 2017 and February 20, 2018 as significant ice cover on the reservoir prevented safe algae sampling. For MWRA supplied water, there were no complaints related to algae reported during April and March from the local water departments



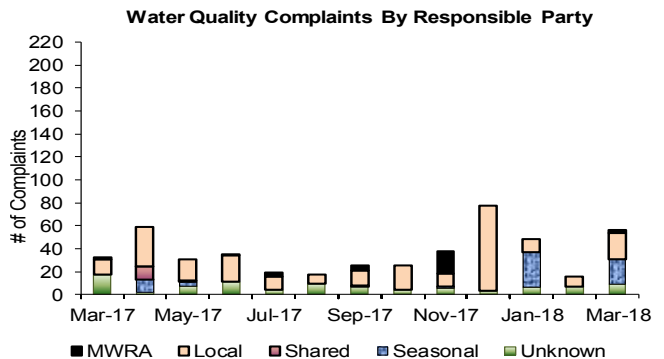
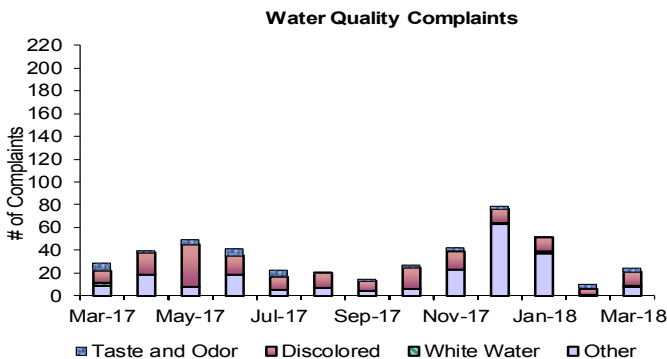
Drinking Water Quality Customer Complaints: Taste, Odor, or Appearance

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

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

Communities reported 120 complaints during the quarter compared to 136 complaints from 3rd Quarter of FY17. Of these complaints, 42 were for “discolored water”, 29 were for “taste and odor”, 3 were for “white water”, and 46 were for “other”. Of these complaints, 43 were local community issues, 2 were MWRA related, 53 were seasonal in nature, and 22 were unknown in origin. (Note: Twenty-two of these complaints (reported as taste and odor, community issue, seasonal complaints) were from Peabody, due to an algae bloom in their local reservoir).

- On January 2, twenty “no water” complaints were reported from various neighborhoods in Boston.



Bacteria & Chlorine Residual Results for Communities in MWRA Testing Program

3rd Quarter – FY18

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 141 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.

Samples are tested for total coliform and 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 repeat tests confirm the presence of *E.coli* or total coliform.

Total coliform provide a general indication of the sanitary condition of a water supply. If total coliform are detected in more than 5% of samples in a month (or if more than one sample is positive when less than 40 samples are collected), the water system is required to investigate the possible source/cause with a Level 1 or 2 Assessment, and fix any identified problems.

A disinfectant residual is intended to maintain the sanitary integrity of the water; MWRA considers a residual of 0.2 mg/L a minimum target level at all points in the distribution system.

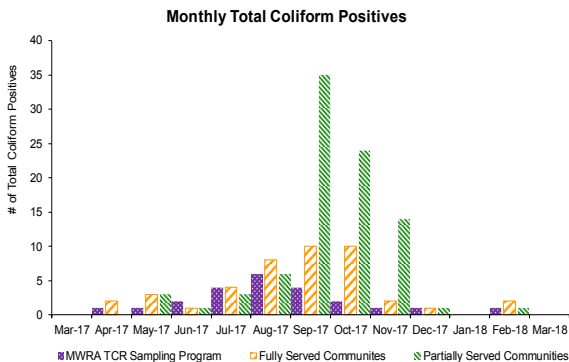
Highlights

In the 3rd Quarter, three of the 6,220 community samples (0.05% system-wide) submitted to MWRA labs for analysis tested positive for total coliform. One of the 1,890 Shared community/MWRA samples (0.05%) tested positive for total coliform (Malden – February). At the end of the 3rd Quarter, only 0.2% of the samples had a chlorine residual lower than 0.2 mg/L. No community violated the TCR.

NOTES:

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

		Total Coliform		E.coli # Positive	Assessment Required
		# Samples (b)	# (%) Positive		
MWRA	MWRA Locations	310	0 (0%)	0	
	Shared Community/MWRA sites	1580	1 (0.06%)	0	
	Total: MWRA	1890	1 (0.05%)	0	No
Fully Served	ARLINGTON	161	0 (0%)	0	
	BELMONT	104	0 (0%)	0	
	BOSTON	780	0 (0%)	0	
	BROOKLINE	224	0 (0%)	0	
	CHELSEA	169	0 (0%)	0	
	DEER ISLAND	52	0 (0%)	0	
	EVERETT	169	0 (0%)	0	
	FRAMINGHAM	234	0 (0%)	0	
	LXINGTON	117	0 (0%)	0	
	LYNNFIELD	18	0 (0%)	0	
	MALDEN	237	1 (0.42%)	0	No
	MARBLEHEAD	72	0 (0%)	0	
	MEDFORD	221	0 (0%)	0	
	MELROSE	117	0 (0%)	0	
	MILTON	102	0 (0%)	0	
	NAHANT	30	0 (0%)	0	
	NEWTON	277	0 (0%)	0	
	NORTHBOROUGH	48	0 (0%)	0	
	NORWOOD	99	0 (0%)	0	
	QUINCY	302	1 (0.33%)	0	No
	READING	130	0 (0%)	0	
	REVERE	180	0 (0%)	0	
	SAUGUS	104	0 (0%)	0	
	SOMERVILLE	273	0 (0%)	0	
	SOUTHBOROUGH	30	0 (0%)	0	
	STONEHAM	91	0 (0%)	0	
	SWAMPSCOTT	52	0 (0%)	0	
	WALTHAM	216	0 (0%)	0	
	WATERTOWN	130	0 (0%)	0	
	WESTBORO HOSPITAL	15	0 (0%)	0	
	WESTON	45	0 (0%)	0	
	WINTHROP	72	0 (0%)	0	
		Total: Fully Served	4871	2 (0.04%)	
Partially Served	BEDFORD	60	1 (1.67%)	0	No
	CANTON	90	0 (0%)	0	
	HANSCOM AFB	33	0 (0%)	0	
	MARLBOROUGH	126	0 (0%)	0	
	NEEDHAM	123	0 (0%)	0	
	PEABODY	221	0 (0%)	0	
	WAKEFIELD	149	0 (0%)	0	
	WELLESLEY	114	0 (0%)	0	
	WILMINGTON	87	0 (0%)	0	
	WINCHESTER	91	0 (0%)	0	
WOBURN	195	0 (0%)	0		
CVA	SOUTH HADLEY FD1	60	0 (0%)	0	
	Total: CVA & Partially Served	1349	1 (0.07%)		
	Total: Community Samples	6220	3 (0.05%)		



Chlorine Residuals in Fully Served Communities

	2017												2018		
	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar		
% <0.1	0.1	0.0	0.1	0.1	0.3	1.0	1.1	0.8	0.7	0.6	0.2	0.1	0.1		
% <0.2	0.1	0.1	0.1	0.2	0.8	2.9	2.9	2.6	2.6	1.2	0.5	0.2	0.2		
% <0.5	0.7	0.7	0.4	0.7	3.5	6.2	6.8	6.1	6.1	3.4	1.5	0.6	0.8		
% <1.0	1.1	1.3	1.2	2.1	7.4	13.4	11.5	10.3	10.3	6.5	3.5	2.3	1.5		
% ≥1.0	98.9	98.7	98.8	98.0	92.6	86.6	88.5	89.7	89.7	93.5	96.5	97.7	98.5		

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

3rd Quarter – FY18

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.

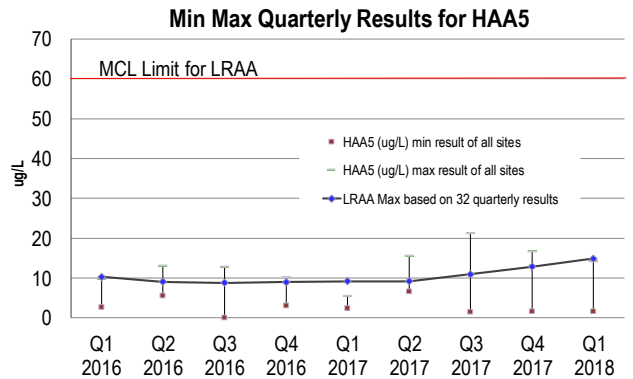
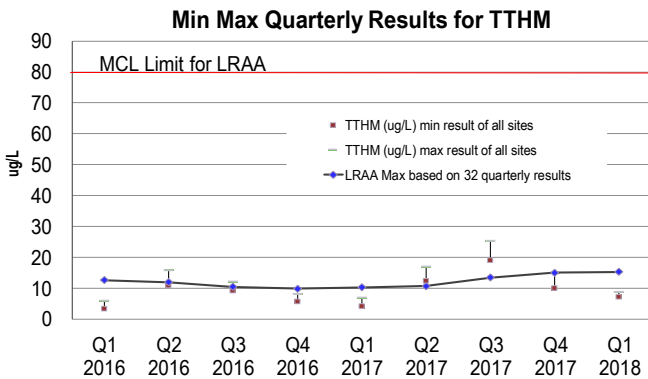
The locational running annual average at each individual sampling location must be below the standard. The charts below show the highest and lowest single values for all sites, and the LRAA of the highest location each quarter.

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).

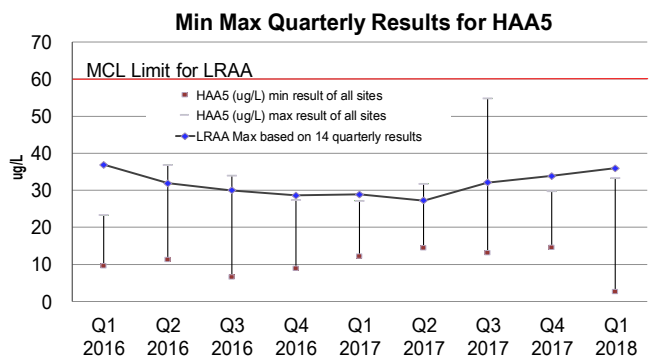
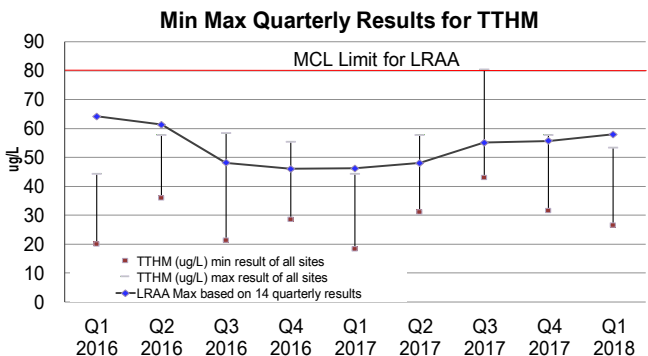
Bromate is tested monthly per DEP requirements for water systems that treat with ozone. Bromide in the raw water may be converted into bromate following ozonation. EPA’s RAA MCL standard for bromate is 10 µg/L.

The LRAA for TTHMs and HAA5s for MWRA’s Compliance Program (represented as the line in the top two graphs below) remain below current standards. The Max LRAA in the quarter for TTHMs = 15.2 µg/L; HAA5s = 14.8 µg/L. The current RAA for Bromate = 0.0 µg/L. CVA’s DBP levels continue to be below current standards.

MetroBoston Disinfection By-Products



CVA Disinfection By-Products (Combined Results)



Water Supply and Source Water Management

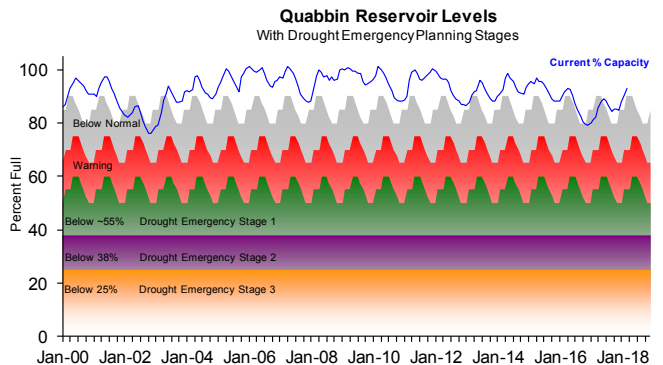
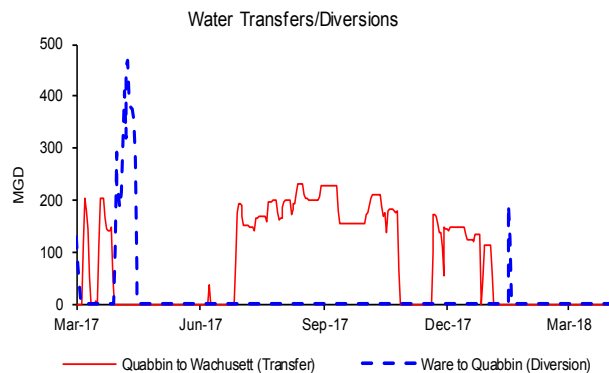
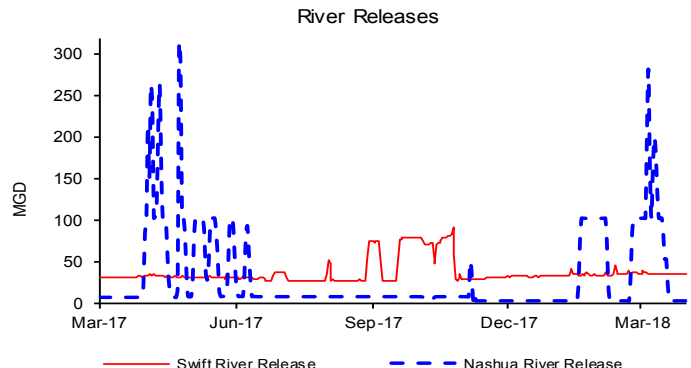
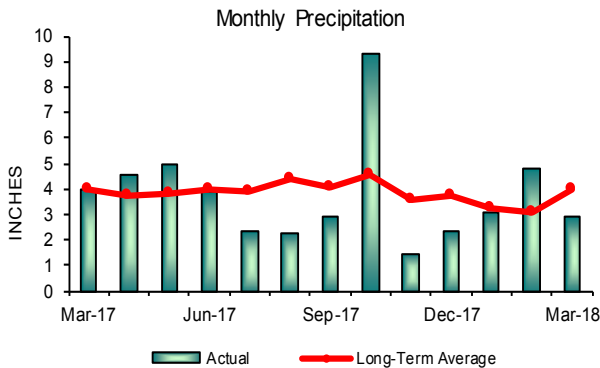
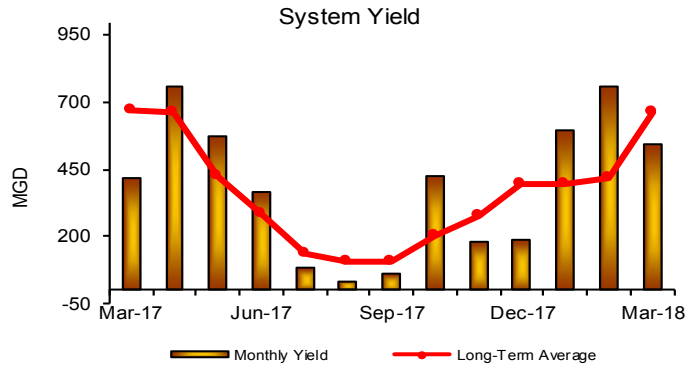
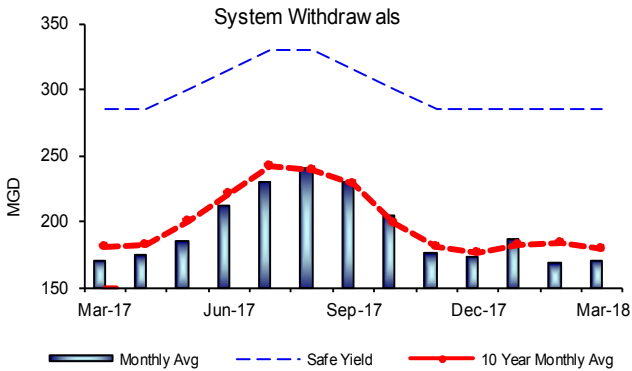
3rd Quarter – FY18

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

The volume of the Quabbin Reservoir was at 92.8% as of March 31, 2018; a 7.9% increase for the quarter, which represents a gain of over 32.8 billion gallons of storage and an increase in elevation of 4.38' for the quarter. The system is in "normal" operating range. Precipitation and yield for the quarter were above their long term averages. System withdrawal for the quarter was below the 10 year monthly average.



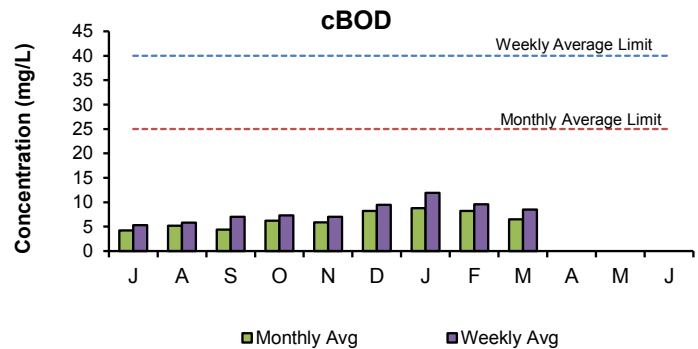
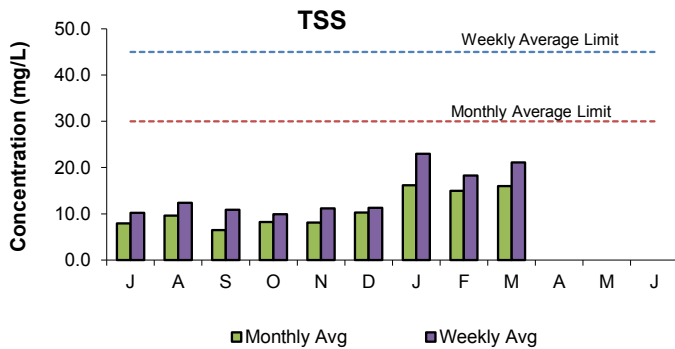
WASTEWATER QUALITY

NPDES Permit Compliance: Deer Island Treatment Plant 3rd Quarter - FY18

NPDES Permit Limits

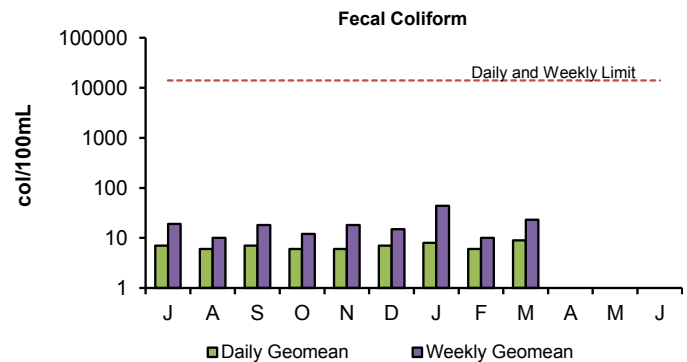
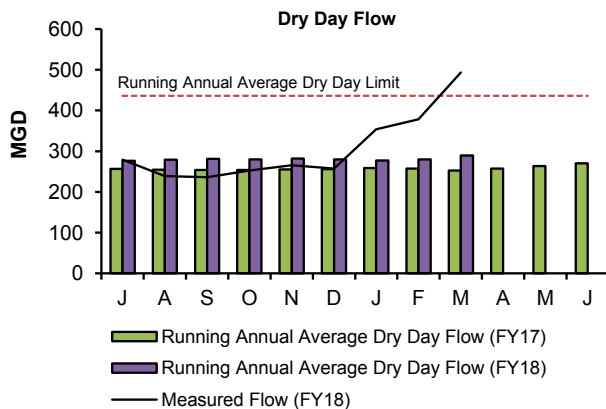
Effluent Characteristics		Units	Limits	January	February	March	3rd Quarter Violations	FY18 YTD Violations
Dry Day Flow:		mgd	436	277.1	279.8	289.2	0	0
cBOD:	Monthly Average	mg/L	25	8.8	8.2	6.5	0	0
	Weekly Average	mg/L	40	11.9	9.6	8.5	0	0
TSS:	Monthly Average	mg/L	30	16.2	15.0	16.0	0	0
	Weekly Average	mg/L	45	23.0	18.3	21.1	0	0
TCR:	Monthly Average	ug/L	456	0	0	1	0	0
	Daily Maximum	ug/L	631	0	0	13	0	0
Fecal Coliform:	Daily Geometric Mean	col/100mL	14000	8	6	9	0	0
	Weekly Geometric Mean	col/100mL	14000	44	10	23	0	0
	% of Samples >14000	%	10	0	0	0	0	0
	Consecutive Samples >14000	#	3	0	0	0	0	0
pH:		SU	6.0-9.0	6.5-7.0	6.5-7.0	6.5-7.0	0	0
PCB, Aroclors:	Monthly Average	ug/L	0.000045	UNDETECTED			0	0
Acute Toxicity:	Mysid Shrimp	%	≥50	>100	>100	>100	0	0
	Inland Silverside	%	≥50	>100	>100	>100	0	0
Chronic Toxicity:	Sea Urchin	%	≥1.5	100	100	100	0	0
	Inland Silverside	%	≥1.5	100	100	100	0	0

There have been no permit violations in FY18 to date at the Deer Island Treatment Plant (DITP).



Total Suspended Solids (TSS) in the effluent is a measure of the amount of solids that remain suspended after treatment. All TSS measurements for the 3rd Quarter were within permit limits.

Carbonaceous Biochemical Oxygen Demand (cBOD) is a measure of the amount of dissolved oxygen required for the decomposition of organic materials in the environment. All cBOD measurements for the 3rd Quarter were within permit limits.



Running Annual Average Dry Day Flow is the average of all dry weather influent flows over the previous 365 days. The Dry Day Flow for the 3rd Quarter was well below the permit limit of 436 MGD.

Fecal Coliform is an indicator for the possible presence of pathogens. The levels of these bacteria after disinfection show how effectively the plant is inactivating many forms of disease-causing microorganisms. In the 3rd Quarter, all permit conditions for fecal coliform were met.

NPDES Permit Compliance: Clinton Wastewater Treatment Plant
3rd Quarter - FY18

NPDES Permit Limits

Effluent Characteristics		Units	Limits	January	February	March	3rd Quarter Violations	FY18 YTD Violations
Flow:		mgd	3.01	2.49	2.54	2.65	0	0
BOD:	Monthly Average:	mg/L	20	1.7	1.5	1.3	0	0
	Weekly Average:	mg/L	20	2.9	2.1	2.1	0	0
TSS:	Monthly Average:	mg/L	20	7.4	7.8	6.9	0	0
	Weekly Average:	mg/L	20	9.6	8.1	8.1	0	0
pH:		SU	6.5-8.3	7.0-7.7	6.9-7.5	6.9-7.4	0	0
Dissolved Oxygen:		mg/L	6	10.3	10.1	10.4	0	0
E. Coli:	Monthly Geometric Mean:	cfu/100mL	126	5.0	5.0	5.0	0	0
	Daily Geometric Mean:	cfu/100mL	409	5.0	9.0	9.0	0	0
TCR:	Monthly Average:	ug/L	17.6	0.0	0.0	0.0	0	0
	Daily Maximum:	ug/L	30.4	0.0	0.0	0.0	0	0
Copper:	Monthly Average:	ug/L	11.6	10.3	9.2	8.5	0	0
	Daily Maximum:	ug/L	14.0	12.1	9.2	9.0	0	0
Total Ammonia Nitrogen: November 1st - March 31st	Monthly Average:	mg/L	10.0	0.20	0.13	0.16	0	0
	Daily Maximum:	mg/L	35.2	0.60	0.22	0.34	0	0
Total Phosphorus: November 1st - March 31st	Monthly Average:	mg/L	RPT*	0.22	0.19	0.11	0	0
	Daily Maximum:	mg/L	RPT*	0.77	0.22	0.19	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

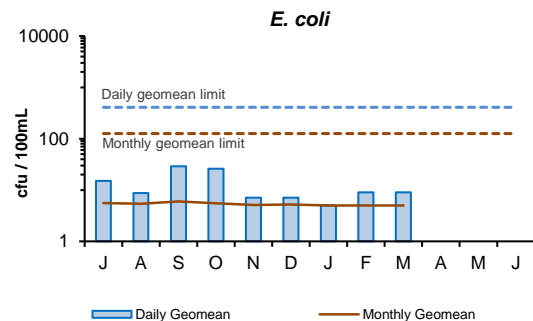
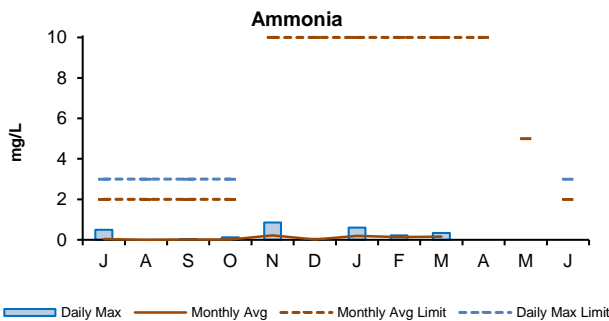
There have been no permit violations in FY18 at the Clinton Treatment Plant.

1st Quarter: There were no permit violations in the first quarter.

2nd Quarter: There were no permit violations in the second quarter.

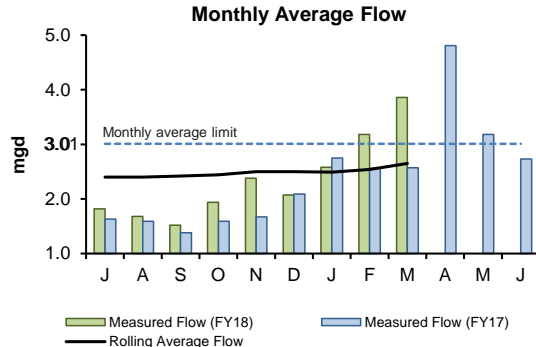
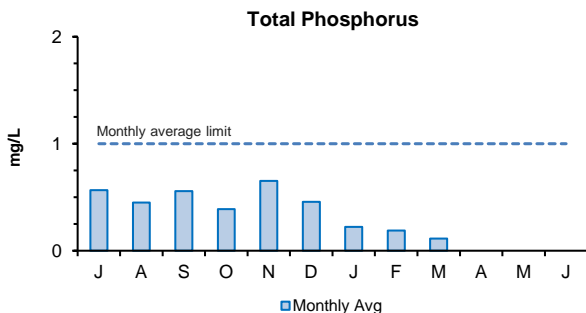
3rd Quarter: There were no permit violations in the third quarter.

* The winter period (November 1 - March 31) phosphorus limit of 1.0 mg/L goes into effect November 1, 2019
+Toxicity testing at the Clinton Treatment Plant is conducted on a quarterly basis.



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

E. coli is an indicator for the possible presence of pathogens. There were no violations of permit limits in the 3rd Quarter. The monthly and daily limits are 126 cfu/100 mL and 409 cfu/100 mL respectively.



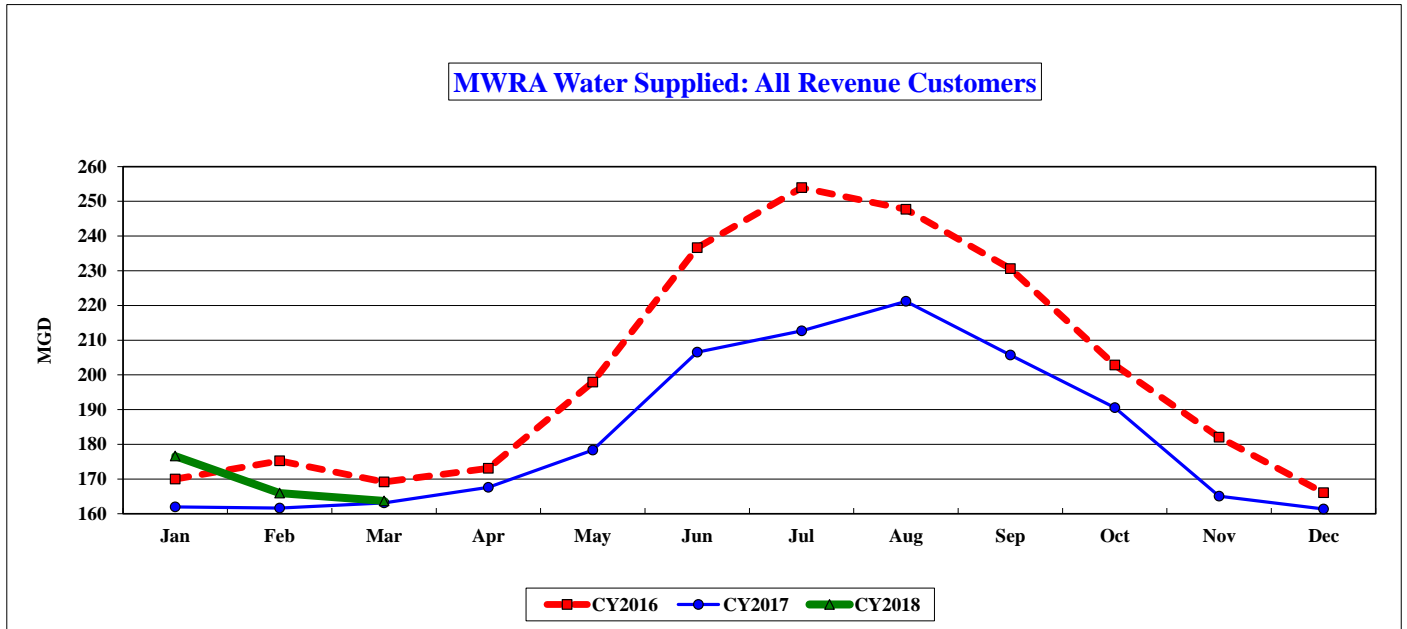
The 3rd Quarter's monthly average concentrations for total phosphorus were below permit limits. An interim permit limit of 1.0 mg/L is in effect from April through October, until April 1st, 2019, when the new permit limit of 0.15 mg/L goes into effect for April - October. The new permit limit of 1.0 mg/L from November through March goes into effect. November 1st, 2019.

The graph depicts the rolling annual average monthly flow, measured in million gallons per day, exiting the plant. The average monthly flows during the 3rd Quarter were below the NPDES permit limit.

COMMUNITY FLOWS AND PROGRAMS

Total Water Use

3rd Quarter - FY18



MGD	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD Average	Annual Average
CY2016	169.989	175.229	169.161	173.080	197.940	236.644	253.923	247.681	230.631	202.827	182.020	166.059	171.377	200.513
CY2017	161.943	161.611	163.130	167.614	178.332	206.541	212.662	221.176	205.729	190.567	165.067	161.366	162.248	183.118
CY2018	176.589	165.963	163.686	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	168.769	168.769

MG	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD Total	Annual Total
CY2016	5,269.650	5,081.631	5,244.002	5,192.412	6,136.128	7,099.331	7,871.618	7,678.123	6,918.941	6,287.652	5,460.602	5,147.831	15,595.283	73,387.922
CY2017	5,020.236	4,525.100	5,057.028	5,028.411	5,528.280	6,196.226	6,592.520	6,856.455	6,171.870	5,907.565	4,952.000	5,002.333	14,602.364	66,838.023
CY2018	5,474.270	4,646.951	5,074.263	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15,195.483	15,195.483

The March 2018 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 2018 water use will be used to allocate the FY20 water utility rate revenue requirement. March 2017 water supplied of 163.7 mgd (for revenue generating users) is up 0.6 mgd or 0.3% compared to March 2017.

System-wide year to date consumption for CY18 is higher than CY17 with 168.8 mgd being supplied to MWRA customers through March. This is 6.6 mgd higher than CY17, and is an increase of 4.1%.

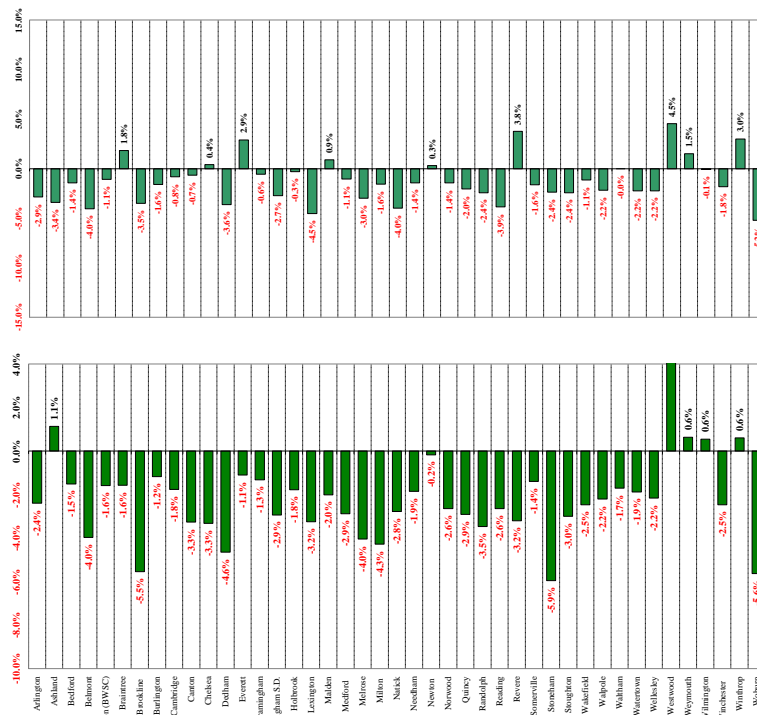
Community Wastewater Flows

3rd Quarter - FY17

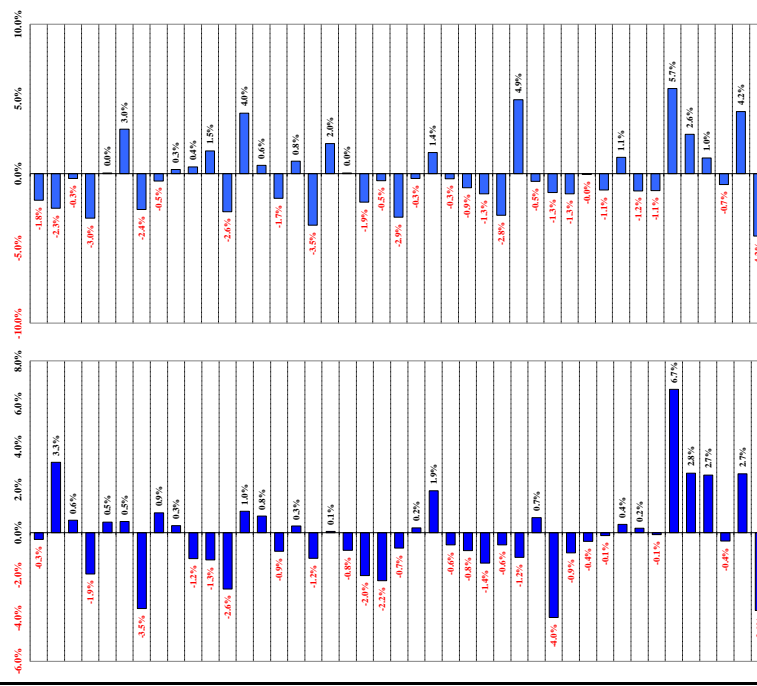
How Projected CY2017 Community Wastewater Flows Could Effect FY2019 Sewer Assessments ^{1,2,3}

The flow components of FY2019 sewer assessments will be calculated using a 3-year average of CY2015 to CY2017 wastewater flows compared to FY2018 assessments that used a 3-year average of CY2014 to CY2016 wastewater flows.

Change in Average Flow

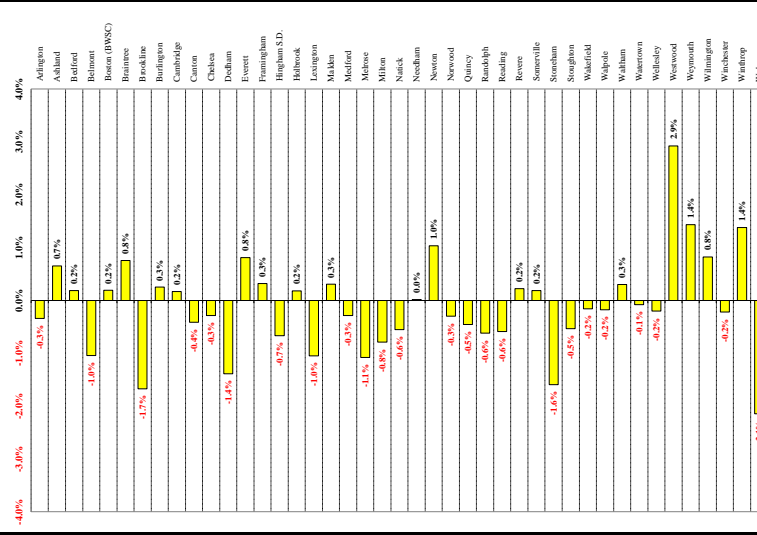


Change in Max. Month Flow



But as MWRA's sewer assessments are a ZERO-SUM calculation, a community's assessment is strongly influenced by the RELATIVE change in CY2015 to CY2017 flow share compared to CY2014 to CY2016 flow share, compared to all other communities in the system.

Change in Max. Month Flow Share



The chart below illustrates the change in the TOTAL BASE assessment due to FLOW SHARE CHANGES. ⁴

Assessment Impact Due to Change in Flow Share

¹ MWRA uses a 3-year flow average to calculate sewer assessments. Three-year averaging smooths 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 CY2014 to CY2017 average wastewater flows as of 04/10/17. Flow data is preliminary and subject to change pending additional MWRA and community review.
³ CY2014 to February CY2017 wastewater flows based on actual meter data. March-December CY2017 based on the average of the three prior years.
⁴ Represents ONLY the impact on the total BASE assessment resulting from the changes in average and maximum wastewater FLOW SHARES.

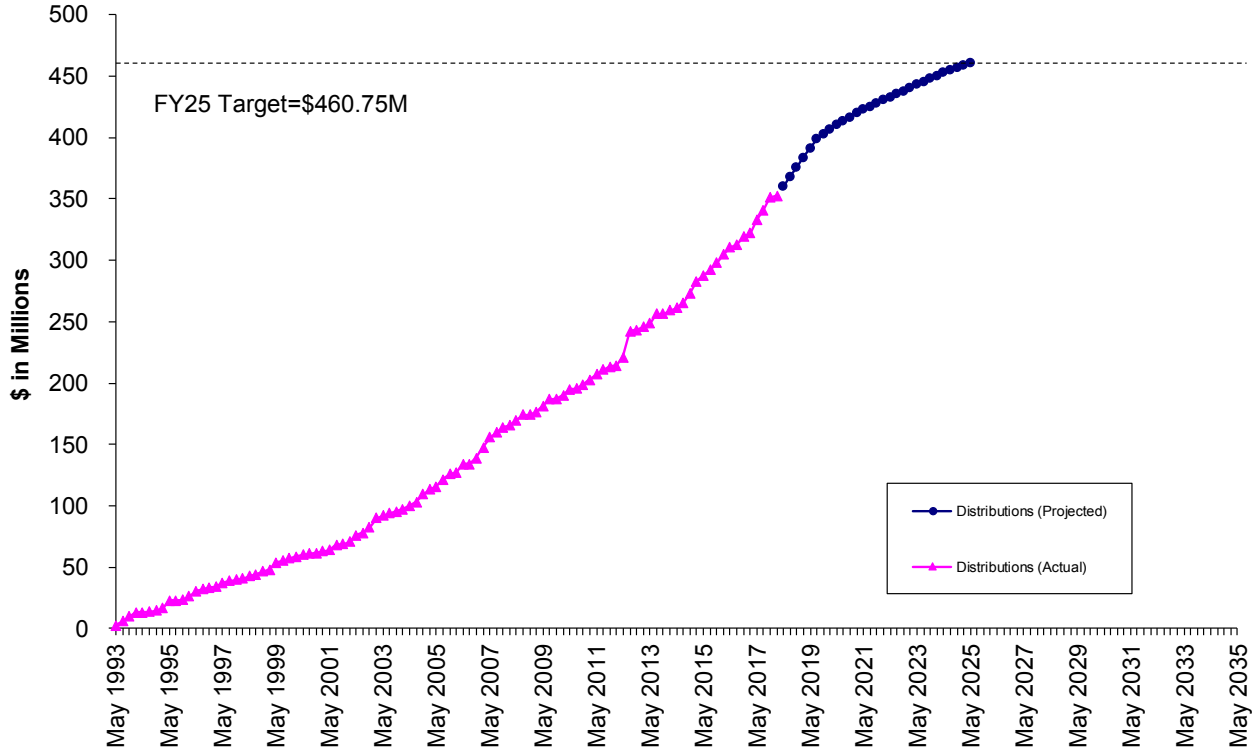
Community Support Programs

3rd Quarter – FY18

Infiltration/Inflow Local Financial Assistance Program

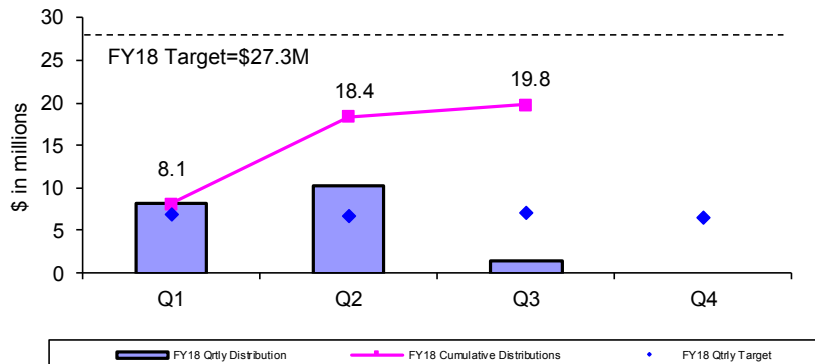
MWRA's Infiltration/Inflow (I/I) Local Financial Assistance Program provides \$460.75 million in grants and interest-free loans (average of about \$14 million per year from FY93 through FY25) to member sewer communities to perform I/I reduction and sewer system rehabilitation projects within their locally-owned 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 3rd Quarter of FY18, \$1.4 million in financial assistance (grants and interest-free loans) was distributed to fund local sewer rehabilitation projects in Stoughton and Watertown. Total grant/loan distribution for FY18 is \$19.8 million. From FY93 through the 3rd Quarter of FY18, all 43 member sewer communities have participated in the program and more than \$352 million has been distributed to fund 541 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.

FY18 Quarterly Distributions of Sewer Grant/Loans



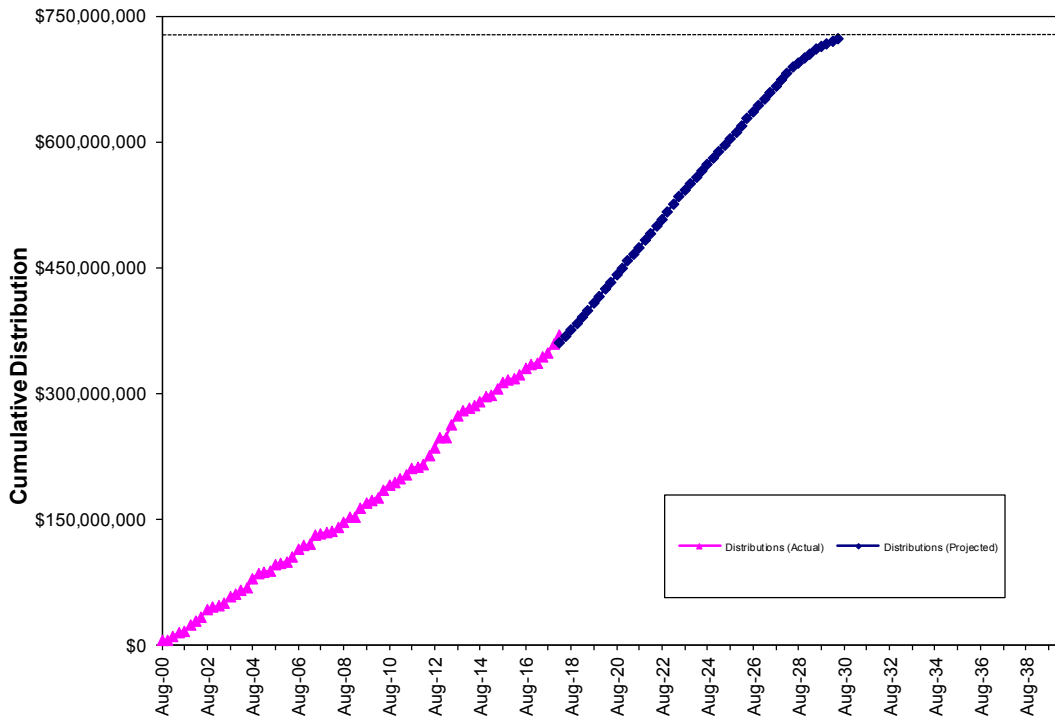
Community Support Programs

3rd Quarter – FY18

Local Water System Assistance Program

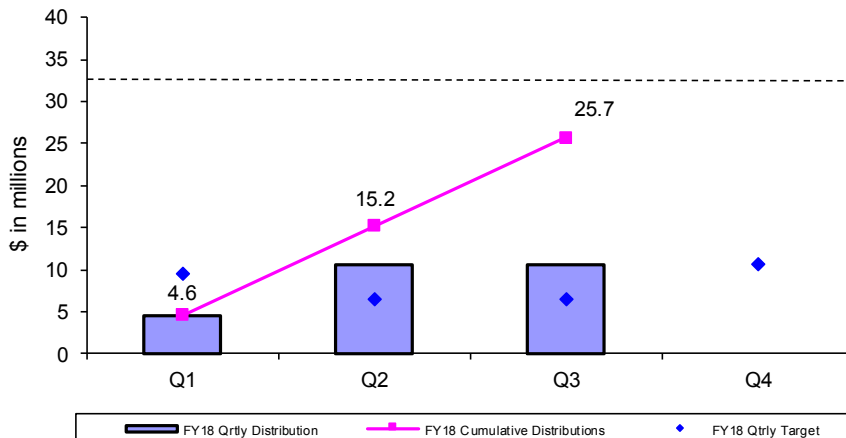
MWRA's Local Water System Assistance Programs (LWSAP) provides \$724 million in interest-free loans (an average of about \$24 million per year from FY01 through FY30) to member water communities to perform water main rehabilitation projects within their locally-owned water distribution systems. There have been 3 phases: Phase 1 at \$222 Million, Phase 2 at \$210 Million, and Phase 3 at \$292 Million. 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 FY23. The Phase 3 Water Loan Program is authorized for distributions FY18 through FY30.

Local Water System Assistance Program Distribution FY01-FY30



During the 3rd Quarter of FY18, \$10.5 million in interest-free loans was distributed to fund local water projects in Boston, Brookline, Quincy, Watertown and Winthrop. Total loan distribution for FY18 is \$25.7 million. From FY01 through the 3rd Quarter of FY18, more than \$370 million has been distributed to fund 402 local water system rehabilitation projects in 42 MWRA member water communities. Distribution of the remaining funds has been approved through FY30 and community loan repayments will be made through FY40. All scheduled community loan repayments have been made.

FY18 Quarterly Distributions of Water Loans



Community Support Programs

3rd Quarter – FY18

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.

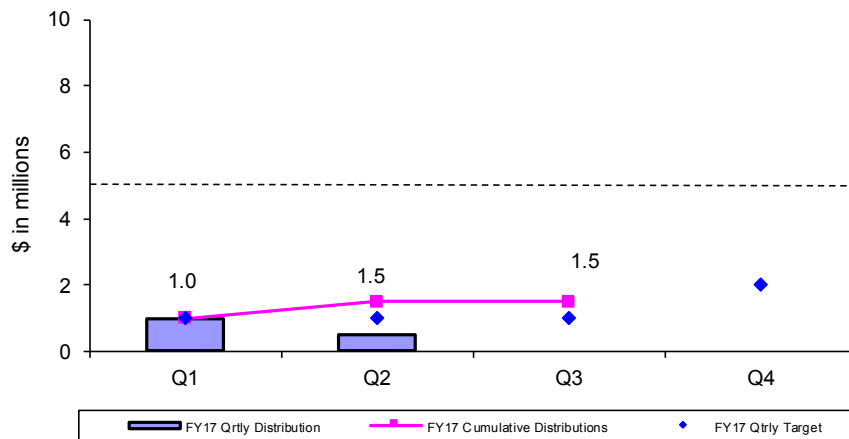
FY17 was the first year of the Lead Service Line Replacement Loan Program. During FY17, MWRA made three Lead Loan Program distributions to Newton for \$4.0 Million, Quincy for \$1.5 Million, and Winchester for \$0.5 Million.

FY18 is the second year of the Lead Loan Program. During FY18, three Lead Loan Program Distributions have been made to Marlborough for \$1.0 Million, Revere for \$0.2 Million and Winthrop for \$0.3 Million. No additional Lead Loan Program distributions were made during the 3rd Quarter of FY18.

Summary of Lead Loans:

Revere in FY18	\$0.2 Million
Winthrop in FY18	\$0.3 Million
Marlborough in FY18	\$1.0 Million
Newton in FY17	\$4.0 Million
Quincy in FY17	\$1.5 Million
<u>Winchester in FY17</u>	<u>\$0.5 Million</u>
TOTAL	\$7.5 Million

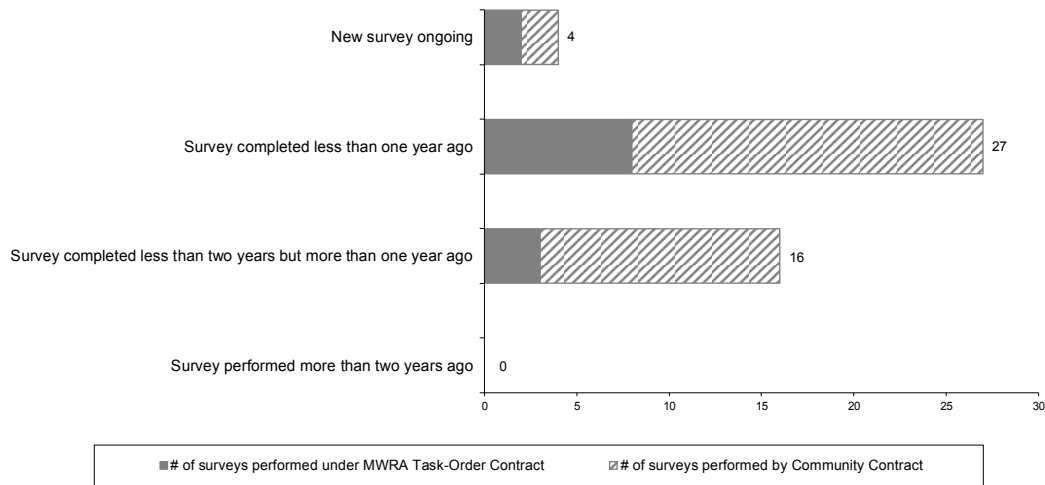
FY18 Quarterly Distributions of Lead Service Line Replacement Loans



Community Support Programs 3rd Quarter – FY18

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 3rd Quarter of FY18, 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	1,770	20,496	47,812		70,078
Low-Flow Fixtures (showerheads and faucet aerators)	10,000	2,018	1,346	2,941		6,305
Toilet Leak Detection Dye Tablets	-----	6,126	1,337	4,783		12,246

BUSINESS SERVICES

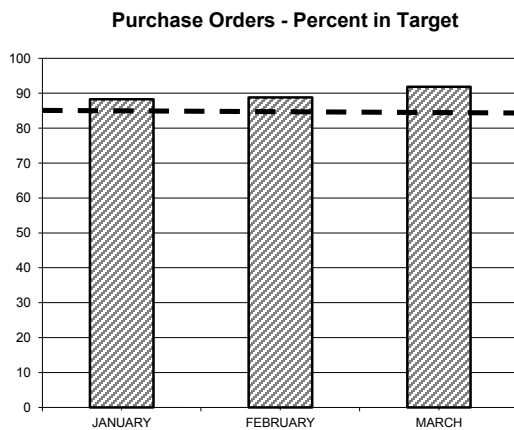
Procurement: Purchasing and Contracts

Third Quarter - FY18

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

Outcome: Processed 95% of purchase orders within target; Average Processing Time was 4.92 days vs. 4.37 days in Qtr 3 of FY17. Processed 73% (11 of 15) of contracts within target timeframes; Average Processing Time was 119 days vs. 104 days in Qtr 3 of FY17.

Purchasing



	No.	TARGET	PERCENT IN TARGET
\$0 - \$500	648	3 DAYS	91.6%
\$500 - \$2K	739	7 DAYS	97.4%
\$2K - \$5K	417	10 DAYS	96.3%
\$5K - \$10K	67	25 DAYS	96.0%
\$10K - \$25K	73	30 DAYS	91.6%
\$25K - \$50K	10	60 DAYS	50.0%
Over \$50K	26	90 DAYS	100.0%

The Purchasing Unit processed 1980 purchase orders, 83 less than the 2063 processed in Qtr 3 of FY17 for a total value of \$10,080,673 versus a dollar value of \$7,471,984 in Qtr 3 of FY17.

The purchase order processing target was not met for the \$25K-\$50K category due to staff summary requirements.

Contracts, Change Orders and Amendments

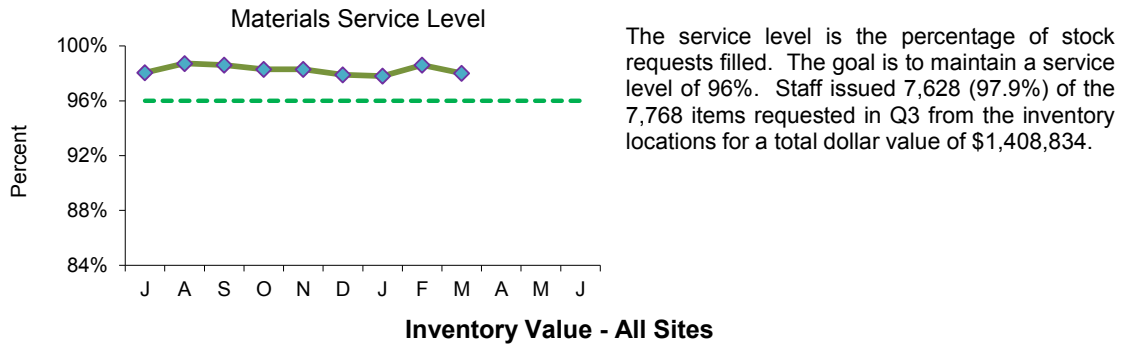
Four contracts were not processed within the target timeframes. The first contract was delayed during the pre-bid phase to respond to bidder questions and revise the contract documents. The second contract was delayed due to further analysis that was required of the proposals. The third contract was delayed due to a modification of the scope of the contract resulting in the re-submission and re-evaluation of cost proposals. The final contract was delayed as a result of additional time to review sub-bid results and the project cost estimate, as well as reprioritization of assignments by staff.

Procurement processed fifteen contracts with a value of \$8,698,271 and eight amendments with a value of \$2,275,731. Thirty seven change orders were executed during the period. The dollar value of all non-credit change orders during Q3 FY18 was \$3,880,070 and the value of credit change orders was (\$142,034).

Staff reviewed 70 proposed change orders and 56 draft change orders.

Materials Management

3rd Quarter - FY18



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 FY18 goal is to reduce consumable inventory from the July '17 base level (\$8.29 million) by 2.0% (approximately \$165,849), to \$8.12 million by June 30, 2018 (see chart below).

Items added to inventory this quarter include:

- Deer Island – gaskets, element filter and chiller for HVAC; copper wire, VFDs, UPS boards, UPS fan, voltage monitor and actuator for Electrical Shop; gearbox speed reducer for Power & Pump; MSA transmitter, laser transmitter and control module for I&C; stainless steel hinges and straps for Welding; butterfly valves for Residuals.
- Chelsea – airbag retainer, airbag sensor, plow blade edge, backhoe flip pad, vehicle mirrors and filters for Fleet Services; speed squares, 1/4 HP and 5 HP motor for Work Coordination; grit pipe for Mechanics; depth sensor, installation kits and ABS processor for Metering.
- Southboro – knit hats and ice melt for B&G; gloves and anti-seize for Equipment Maintenance; rust remover, re-activation heater and copier toner for Carroll Water Treatment Plant.

Property Pass Program:

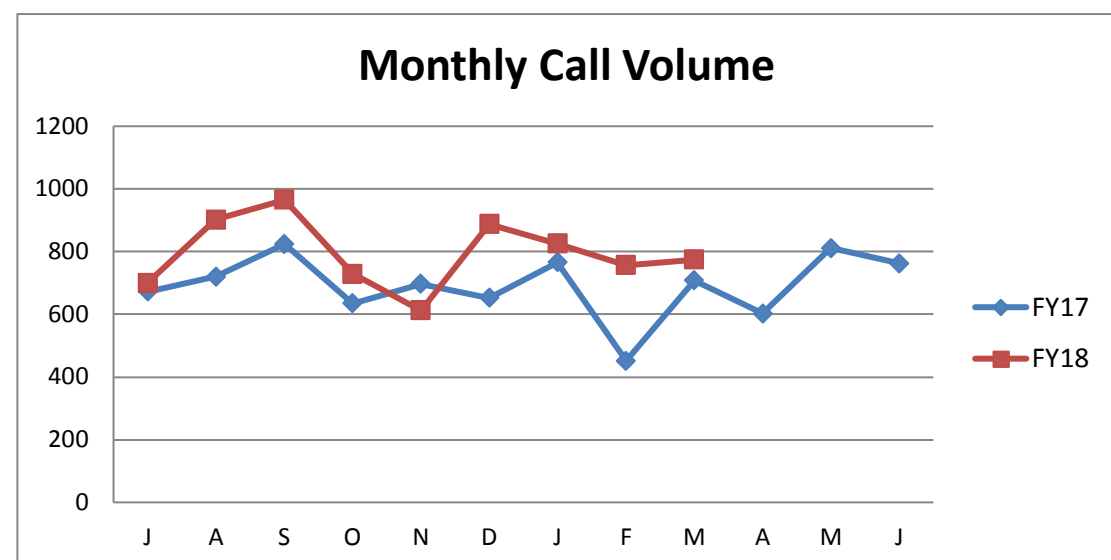
- Four audits were conducted during Q3.
- Scrap revenue received for Q3 amounted to \$20,873. Year to date revenue received amounted to \$50,464.
- Revenue received from online auctions held during Q3 amounted to \$29,260. Year to date revenue received amounted to \$157,795.

Items	Base Value July-17	Current Value w/o Cumulative New Adds	Reduction / Increase To Base
Consumable Inventory Value	8,292,452	8,234,547	-57,905
Spare Parts Inventory Value	8,939,710	8,933,891	-5,819
Total Inventory Value	17,232,162	17,197,479	-34,683

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

MIS Program

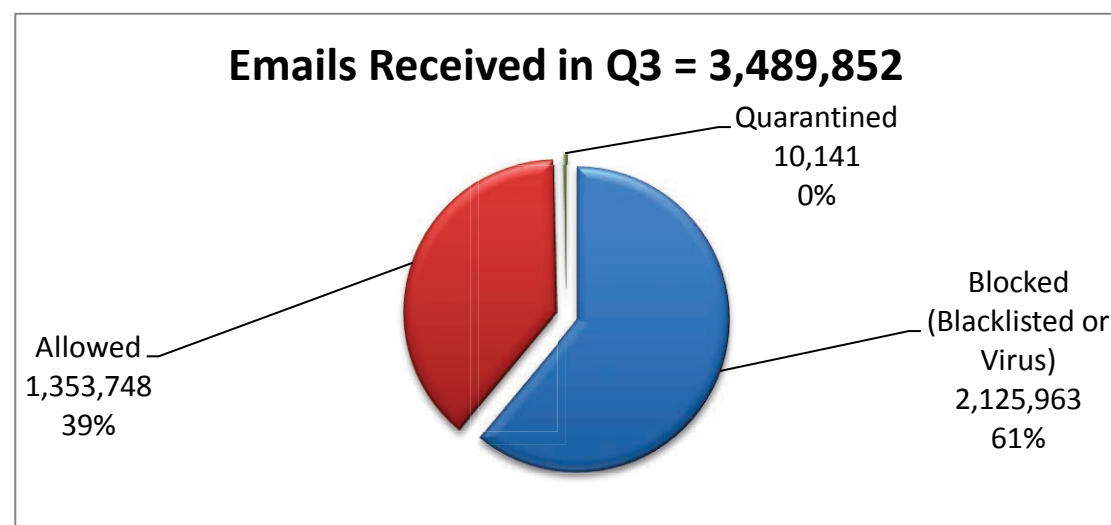
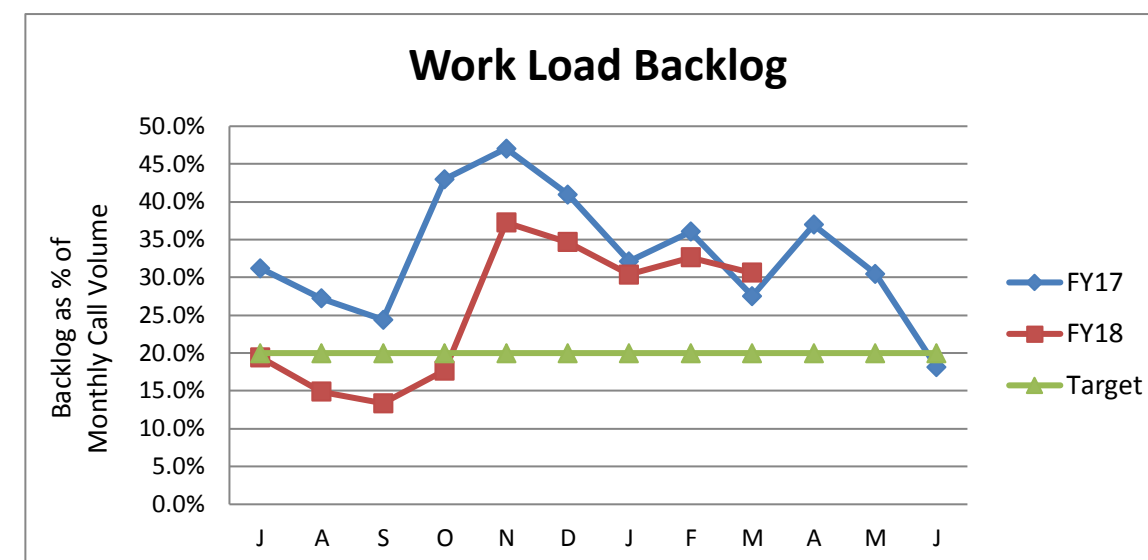
3rd Quarter - FY18



Performance & Backlog

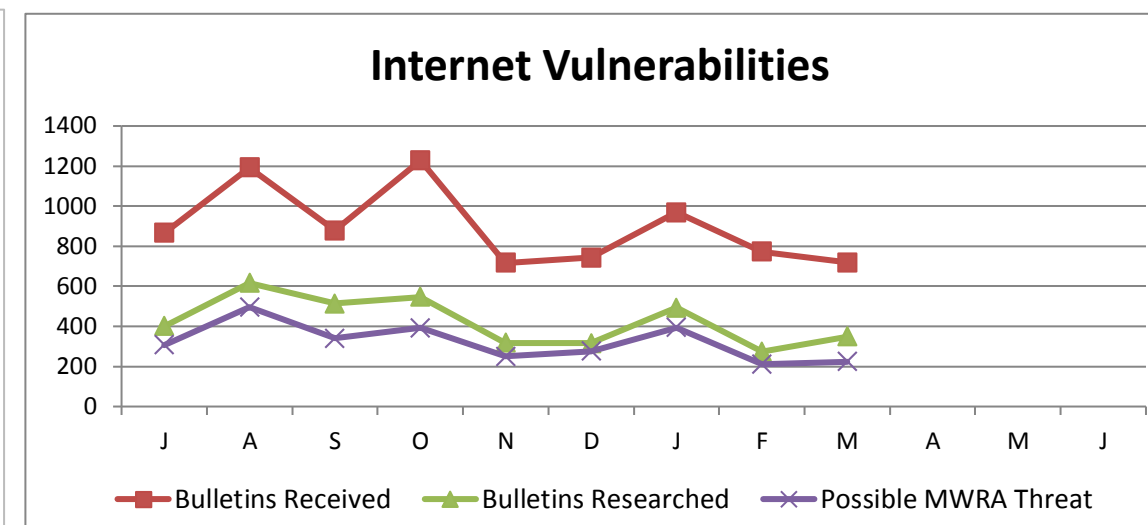
Call Volume: Peaked in January. FY18-Q3 call volume increased by 22% from FY17-Q3.

Call Backlog: Peaked in January. FY18-Q3 backlog average is 11% above targeted benchmark of 20%.



Information Security

In Q3, pushed security fixes/ updates to desktops/servers protecting against 488 vulnerabilities. McAfee Antivirus quarantined 8 distinct viruses from 8 PCs. PCs are current with antivirus



Infrastructure:

Desktop Refresh: Base image created and being tested in preparation for the desktop refresh scheduled in FY19. Windows 10 application compatibility being compiled.

Server Virtualization: New hardware implemented in CNY. Two servers migrated; balance to be completed in May.

Server Backup Solution Replacement: Continued work with vendor on system tuning.

Citrix Secure Application Migration: All iOS devices have been migrated to receive Citrix applications from the Apple Store.

Information Security Program: 93% of staff have completed the Security Awareness training.

Applications/Library & Records Center/Training:

Enterprise Content Management (ECM)/e-Construction: Participated in a presentation for MWRA Senior Management proposing that a solution be identified and procured to address Enterprise Content and Document Management initiative. Staff Summary was approved by the BOD at the March meeting. Work will proceed to identify a product and vendor to start implementation in the fall. Drafted a Project Overview and Charter.

Maximo: Went live with new Maximo 7.6 which included the IBM Control Desk module. Retested and reviewed operational status of all Maximo reports in the production environment. Successful testing of all Maximo-Lawson interfaces.

PIMS: Upgraded the WebSMR application and went live with latest specifications for Oracle, .Net, Crystal reports, and SSL.

Electronic Library Notebook: ELN Thermometer Version 2 items/modules implemented in production. There are a total of 19 ELN log books in production presently. Effort under way to add new features and redefine work processes. Began diagramming current and future work processes including supervisor/review process, DEP Historic Audit process including microbiology audit checklist.

Telog: The new application went live and is now hosted on virtual server giving IT the ability to back up and restore data in the event of failure. Additionally, the new database is in a SQL cluster environment which provides redundancy.

AVL: A new console application was installed giving users the ability to download and format vehicle odometer data from the Network fleet web site so that relevant data can be imported into Maximo on a weekly basis.

Portia-Lawson Interface: Went live with the Portia-Lawson interface. This interface allows Finance/Treasury users to post Variable Interest, Change in Market Value, and Long Term Interest from Portia into the Lawson GL accrual system.

DCR Water Quality System Upgrade: The Department of Conservation and Recreation (DCR) Water Quality System project is to upgrade the portal that exposes water quality data from both the Quabbin and Wachusett reservoirs. The existing OMMS DCR application is being rebuilt using current technology and will provide additional data types for user viewing. Functional requirements have been completed and endorsed by the Water Quality Assurance department.

Library & Records Center: The Library fulfilled 69 research requests and provided 191 periodicals, standards, books, and reports. Research topics included potential dam failure, computer modeling for water distribution, dehydration of glycerol to acrolein, water monitoring-contamination, effect of BHP on copepod population, wetland locations in Southborough. The Records Center added 155 boxes (292 YTD) and handled 249 (630 YTD) boxes. Document searches included permits and shop drawings relating to Deer Island, Bellevue Standpipe #2, electrical supply agreement between BECO and MWRA, and Cottage Farm CSO.

IT Training: For the quarter, 45 staff attended 8 classes. 23% of the workforce has attended at least 1 class year-to-date. Cyber Security training sessions were held in Chelsea and Deer Island. A new instructor-led Intermediate Word 2016 – Mail Merge training class was completed and offered in support of Unit 1 Administrative Certificate Program (ACP).

Legal Matters
3rd Quarter FY 2018

PROJECT ASSISTANCE

Real Estate, Contract, Environmental and Other Support:

- **8(m) Permits:** Reviewed sixty-six (66) 8(m) permits. Drafted 8(m) permit for the March Fourth's use of certain MWRA land in the Fore River Shipyard.
- **Real Property:**

Worked with MBTA to revise a draft permanent easement and license from MBTA for MWRA's use of certain MBTA land in Dedham related to MWRA's Section 111 water main project. Drafted license for the use of a portion of Deer Island real property by Harbor Electric Energy Company for the installation, operation, and maintenance of the new cross harbor electric distribution cable and related facilities and the decommissioning of the existing cross harbor electric distribution cable. Reviewed letter relative to the relocation of wireless equipment located at MWRA's Turkey Hill water storage tank in Arlington. Reviewed MWRA's and Fore River Railroad Corporation's property interest in Braintree relative possible encroachment by abutter. Recorded Certificate of Compliance for Order of Conditions DEP 297-0353 related to MWRA's Spot Tank Project Contract 6457. Recorded Extension Permit for Order of Conditions DEP 212-1132 related to MWRA's Wachusett Aqueduct Pump Station project in Marlborough. Drafted letter in response to claim related to a water main break on Hobbs Court in Arlington. Reviewed MWRA's property interests in the area of Farwell Street in Newton. Reviewed MWRA's property rights for its Section 4 water line in Norfolk Street in Cambridge and MWRA's option to request that certain utilities relocate their utilities which impede MWRA's ability to maintain its Section 4 water line in Norfolk Street pursuant to Section 9(b) of the enabling act. Drafted letter submitting the final three deliverables to MassDOT relative to MassDOT taking physical possession of the Commercial Point CSO Chemical Building which was transferred by MWRA to MassDOT in December 2017. Reviewed legislation relative to surplus of property rights at Squire Road in Revere. Reviewed rights relative to water pipe bridge on College Avenue Bridge in Medford. Reviewed and revised construction access license from the City of Boston to MWRA for maintenance on its water infrastructure.
- **NPDES:** Reviewed 2018 Joint Public Notice for Alewife Brook which is required by the Combined Sewer Overflow Variance for the Alewife Brook/Upper Mystic River Basin.
- **Public Access:** Drafted amendment to 8(m) permit for the Town of Weston for their use of portions of the Weston Aqueduct, Weston Reservoir, and Norumbega Reservoir located within the Town of Weston.

LABOR, EMPLOYMENT AND ADMINISTRATIVE

Matters Concluded

Received an arbitrator's decision in favor of MWRA finding that the MWRA did not violate a collective bargaining agreement with respect to the job classification of Grievant's position.

LITIGATION/TRAC

New Matters There are no new lawsuits to report.

Significant Claims There are no new Significant Claims to report.

Significant Developments DaPrato v. MWRA, C.A. No. 2015 CV 3687 D: Prepared oppositions to DaPrato post-trial motions. Retained outside counsel to review appellate issues.

SUMMARY OF PENDING LITIGATION MATTERS

TYPE OF CASE/MATTER	As of March 2018	As of Dec 2017	As of Sept 2017
Construction/Contract/Bid Protest (other than BHP)	1	1	0
Tort/Labor/Employment	2	2	2
Environmental/Regulatory/Other	2	2	2
Eminent Domain/Real Estate	0	0	0
total – all defensive cases	5	5	4
Other Litigation matters (restraining orders, etc.) <u>MWRA v. Thomas Mercer</u> <u>MWRA v. NSTAR and HEEC</u>	2	2	2
total – all pending lawsuits	7	7	6
Claims not in suit: <u>Thang Viet Vu and Oanh Vu Claim</u>	1	2	3
Bankruptcy	2	2	2
Wage Garnishment	15	15	15
TRAC/Adjudicatory Appeals	1	1	1
Subpoenas	1	1	1
TOTAL – ALL LITIGATION MATTERS	27	28	28

Closed Cases There are no closed cases to report.

Closed Claims Joel Chiet MVA Claim: The Joel Chiet auto accident claim has settled for \$60,000. Mr. Chiet, who is 83 years old, claims that on June 29, 2015, on the Fellsway in Medford, an MWRA vehicle collided with the rear of his vehicle when Mr. Chiet was stopped at a traffic light. Mr. Chiet's vehicle was damaged. Mr. Chiet also alleged that he sustained personal injuries as a result of the accident that required medical treatment, and affected his ability to work, and to care for his chronically ill wife.

Subpoenas During the Third Quarter of FY 2018, no new subpoenas were received and one subpoena was pending at the end of the Third Quarter FY 2018.

Public Records During the Third Quarter of FY 2018, twenty-four public records requests were received and eleven public records requests were closed.

TRAC/MISC.

New Appeals: No new TRAC Appeals.

Settlement by Agreement of Parties No Settlement by Agreement of Parties.

Stipulation of Dismissal No Joint Stipulation of Dismissals filed.

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

Tentative Decision There are no Tentative Decisions issued in the 3rd Quarter FY 2018.

Final Decisions There are no Final Decision issued in the 3rd Quarter FY 2018.

INTERNAL AUDIT AND CONTRACT AUDIT ACTIVITIES

3rd Quarter - FY18

Highlights

During the 3rd Quarter FY18, IA completed a review of the Uniform Debit Card program. The objective was to determine compliance with existing policies and procedures and good business practices. Recommendations included developing a more comprehensive policy, correcting coding, reviewing the accuracy of the upload list each year, determine the need to reload cards with no activity and to improve segregation of duties. Three recommendations were closed prior to the final report being issued.

Other assignments completed include contract amendment negotiation support, a review of allowances under design contracts, HEEC billing adjustments for 2018 and participation in the consultant contract task force.

Status of Recommendations

During FY18, a total of 21 recommendations were closed, of which 18 were from prior fiscal years' audits.

IA follows-up on open recommendations on a continuous basis. All open recommendations have target dates for implementation. When a recommendation has not been implemented within 48 months, the appropriateness of the recommendation is re-evaluated.

Report Title (issue date)	Audit Recommendations		
	Open	Closed	Total
Unmatched Receipts and Accruals (6/30/15)	2	8	10
Warehouse Cycle Counts at DITP (11/5/15), Southboro (11/6/15) and Chelsea (12/4/15)	2	23	25
MIS Mobile Equipment Asset Tracking (9/26/16)	1	11	12
Wright Express (WEX) Credit Card Fuel Purchases (11/16/16)	3	10	13
Purchase Card Activity on Deer Island (3/31/17)	3	12	15
Review of Uniform Debit Card Program (3/30/18)	3	3	6
Total Recommendations	14	67	81

Cost Savings

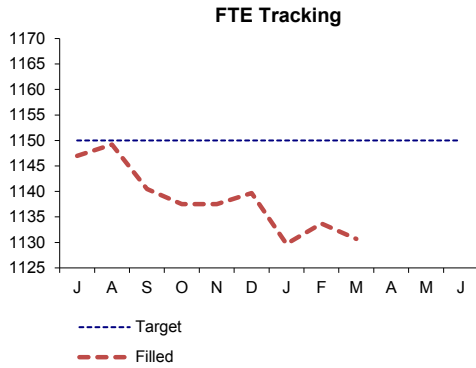
IA's target is to achieve at least \$1,000,000 in cost savings each year. Cost savings vary each year based upon many factors. In some cases, cost savings for one year may be the result of prior years' audits.

Cost Savings	FY14	FY15	FY16	FY17	FY18 Q3	TOTAL
Consultants	\$294,225	\$87,605	\$88,312	\$272,431	\$77,275	\$819,848
Contractors & Vendors	\$415,931	\$1,146,742	\$1,772,422	\$3,037,712	\$948,015	\$7,320,822
Internal Audits	\$923,370	\$543,471	\$220,929	\$224,178	\$153,239	\$2,065,187
Total	\$1,633,526	\$1,777,818	\$2,081,663	\$3,534,321	\$1,178,529	\$10,205,857

OTHER MANAGEMENT

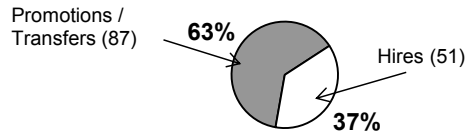
Workforce Management

3rd Quarter - FY18



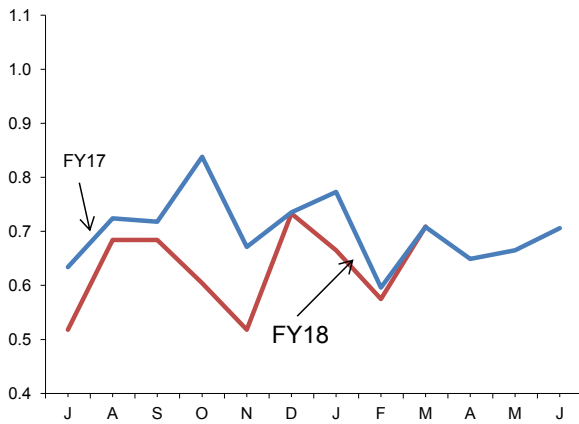
FY18 Target for FTE's = 1150
 FTE's as of MAR 2018 = 1130.7

Positions Filled by Hires/Promotions
 FY18-YTD



	Pr/Trns	Hires	Total
FY16	99 (62%)	60 (38%)	159
FY17	155 (68%)	72 (32%)	227
FY18	87(63%)	51 (37%)	138

Average Monthly Sick Leave Usage
 Per Employee

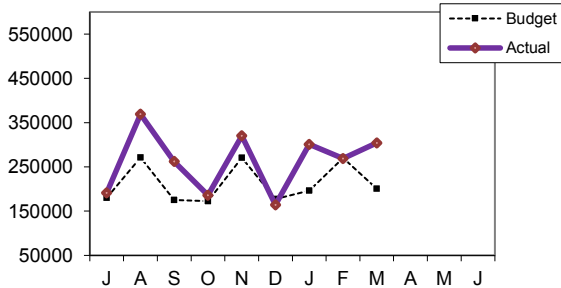


Average monthly sick leave thru the 3rd Quarter of FY18 decreased as compared thru FY17 (7.51 to 8.41 days)

	Number of Employees	YTD	Annualized Total	Annual FMLA %	FY17
Admin	134	4.89	6.52	13.4%	7.75
Aff. Action	6	5.69	7.59	9.9%	6.28
Executive	5	3.07	4.09	24.3%	13.80
Finance	34	4.37	5.82	0.0%	8.50
Int. Audit	7	4.39	5.85	39.3%	6.51
Law	14	4.79	6.39	8.9%	8.98
OEP	8	2.04	2.72	0.0%	5.74
Operations	926	5.60	7.47	17.3%	8.55
Pub. Affs.	13	9.33	12.44	73.0%	6.31
MWRA Avg	1147	3.79	7.59	17.8%	8.42

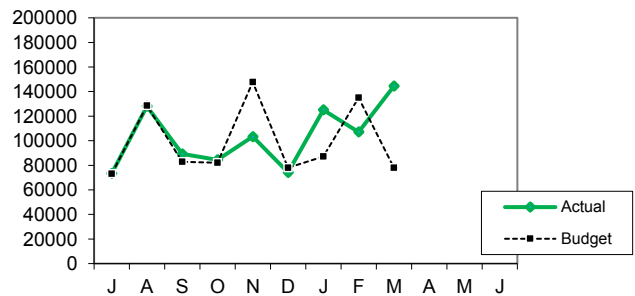
Percent of sick leave usage for FY18, attributable to Family and Medical Leave Act (FMLA) is 17.8% .

Field Operations
 Current Month Overtime \$



Total Overtime for Field Operations for the second quarter of Total Overtime for Field Operations for the third quarter of FY 2018 was \$869,742 which is \$202k over budget. Emergency overtime was \$555k, which was \$205k over budget, the majority of which was for snow removal and rain events. Coverage overtime was \$146k, which was \$6k over budget, reflecting the month's shift coverage requirements. Planned overtime was \$169k or (\$9k) under budget, mainly for planned operations and half plant at Carroll. YTD, FOD has spent \$2,366,620 on overtime which is \$453k over budget.

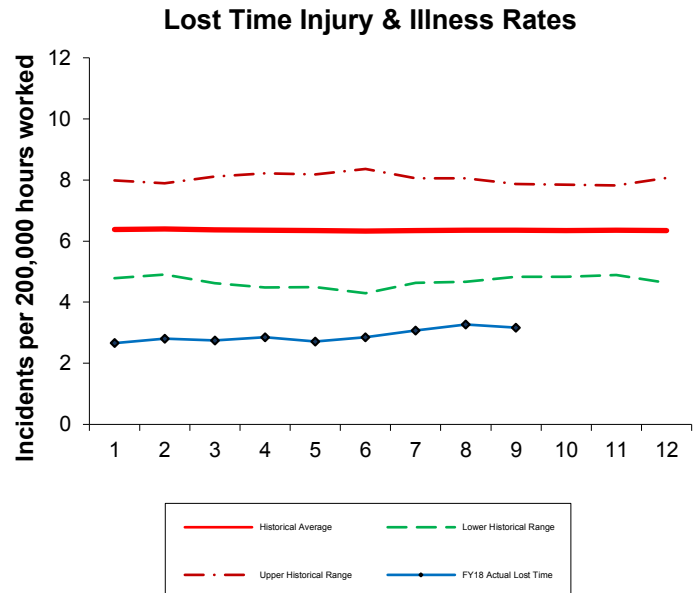
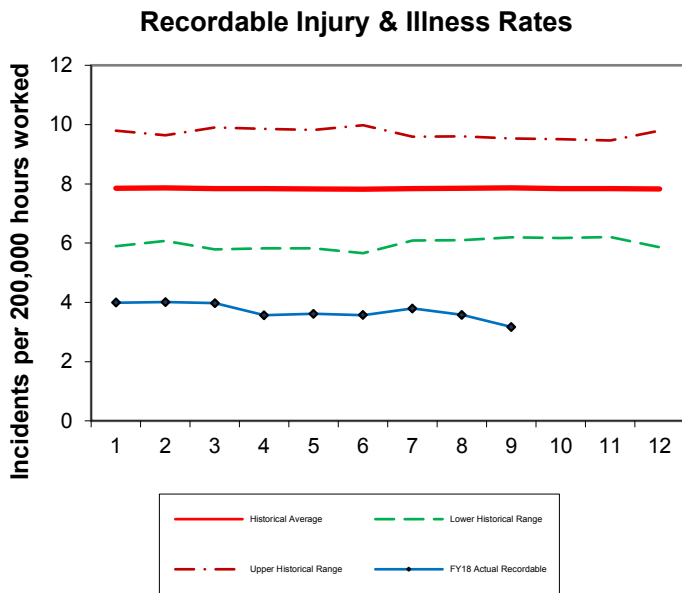
Deer Island Treatment Plant
 Current Month Overtime \$



Deer Island's total overtime expenditure in the third quarter FY 2018 was \$376k, which was \$76k over budget. Storm coverage, for the 3rd quarter was over by \$45k, primarily due to major snow and rain events. The Maintenance underspending of (\$23k) in the winter months of January & February helped to offset the significant overage in March of \$44k for storm coverage. YTD, Deer Island has spent \$929,121 on overtime which is \$37k over budget.

Workplace Safety

3rd Quarter - FY18



- 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 HIGHLIGHTS

	3rd Quarter Information		Open Claims
	New	Closed	
Lost Time	10	22	63
Medical Only	19	19	16
Report Only	13	13	
	QYTD		FYTD
Regular Duty Returns	6		21
Light Duty Returns	1		2

COMMENTS:

Regular Duty Returns

JAN 3 employees' returned to Full Duty, no restrictions

FEB 2 employee's returned to Full Duty, no restrictions

MARCH 1 employee returned to Full Duty, no restrictions

Light Duty Returns

JAN 1 employee returned to Light Duty from workers' compensation

FEB No employees returned to Light Duty from workers' compensation

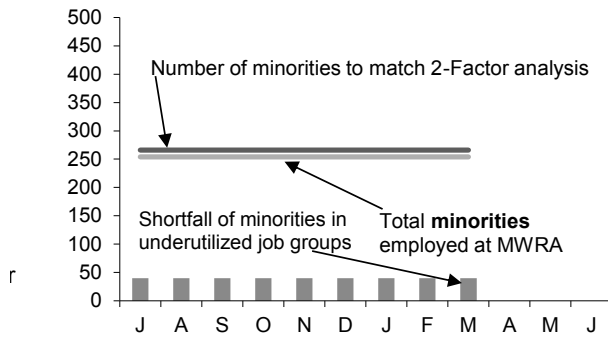
MARCH No employees returned to Light Duty from workers' compensation

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

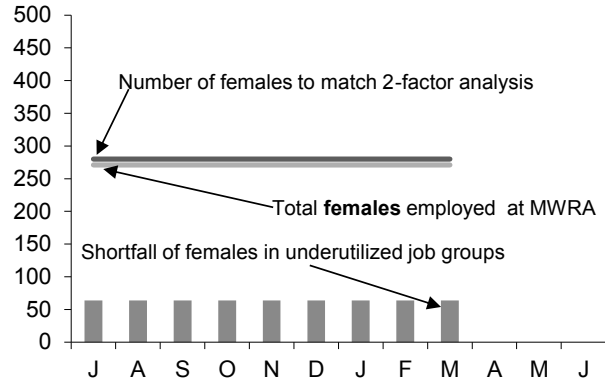
*Report only claims are closed the month they are filed.

MWRA Job Group Representation 3rd Quarter - FY18

Minority - Affirmative Action Plan Goals



Female - Affirmative Action Plan Goals



Highlights:

At the end of Q3 FY18, 9 job groups or a total of 44 positions are underutilized by minorities as compared to 9 job groups or a total of 41 positions at the end of Q3 FY17; for females 7 job groups or a total of 62 positions are underutilized females as compared to 7 job groups or a total of 52 positions at the end of Q3 FY17. During Q3, 5 minorities and 2 females were hired. During this same period 5 minorities and 6 females terminated. Effective February, 2017, The Board of Directors approved the 2018 Affirmative Action's workforce goals. The new goals are the following: minorities 25.1 % and females 24.3%.

Underutilized Job Groups - Workforce Representation

Job Group	Employees as of 3/31/2017	Minorities as of 3/31/2017	Achievement Level	Minority Over or Under Underutilized	Females As of 3/31/2017	Achievement Level	Female Over or Under Underutilized
Administrator A	21	2	3	-1	8	7	1
Administrator B	21	1	4	-3	4	3	1
Clerical A	31	11	7	4	27	21	6
Clerical B	27	9	7	2	10	10	0
Engineer A	78	26	17	9	18	16	2
Engineer B	56	14	11	3	12	7	5
Craft A	113	17	41	-24	1	4	-3
Craft B	145	24	43	-19	3	4	-1
Laborer	66	18	14	4	2	2	0
Management A	102	16	25	-9	37	40	-3
Management B	46	9	8	1	9	4	5
Operator A	68	4	14	-10	0	6	-6
Operator B	66	15	16	-1	4	21	-17
Professional A	31	5	8	-3	19	15	4
Professional B	159	46	38	8	79	58	21
Para Professional	60	18	20	-2	31	47	-16
Technical A	52	13	11	2	6	11	-5
Technical B	6	2	1	1	1	1	0
Total	1148	250	288	28/-44	271	277	61/-62

AACU Candidate Referrals for Underutilized Positions

Job Group	Title	# of Vac	Requisition Int. / Ext.	Promotion s/Transfers	AACU Ref. External	Position Status
Management A	Manager Compensation	1	Ext	Ext	0	NH=WF
Craft A	Valve Maintenance Foreman	1	Int	Int	0	Promo =WM
Craft A	WSS Foreman	1	Int	Int	0	Promo = HM
Craft B	Heavy Equipment Operator 1	1	Int	Int	0	Promo = WM
Craft A	M&O Specialist	1	Ext	Ext	0	NH = WM
Craft B	Jr. Instrument Technician	1	Int/Ext	Int	0	NH=WM
Craft B	Electrician	1	Ext	Ext	0	NH = WM
Craft B	Plumber/Pipefitter	3	Ext	Int	0	NH = (3)WM, TR=WM
Engineer B	Project Manager, SCADA Engineering	1	Int	Int	0	Promo = WM
Operator A	Supervisor, Facility Maintenance	1	Int	Int	0	Promo = WM
Operator A	Transmission & Treatment Operator	1	Ext	Ext	0	Promo = WM
Operator B	Operator	1	Int	Int	0	Promo = BM
Professional B	Sr. Staff Counsel	1	Int	Int	0	Promo = WF
Technical B	Systems Administrator II	1	Ext	Ext	0	Promo = AM
Technical A	Sr. Draftperson	1	Ext	Ext	0	NH= WF
Technical A	Sr. Instrument Technician	1	Int	Int	0	Promo (2) = HM, BM

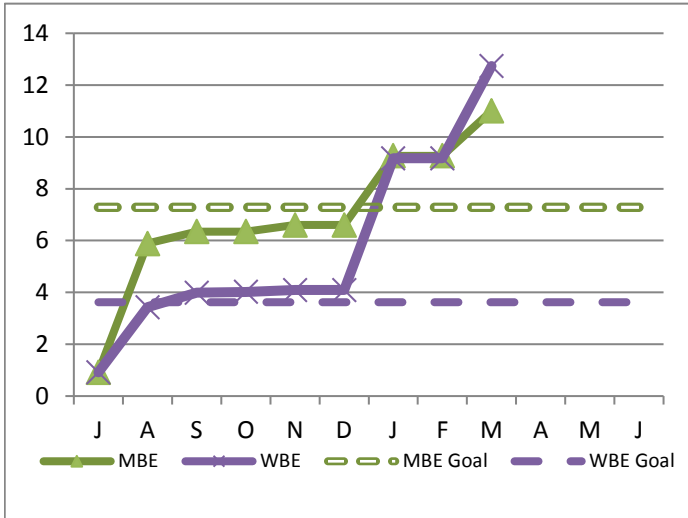
MBE/WBE Expenditures

3rd Quarter - FY18

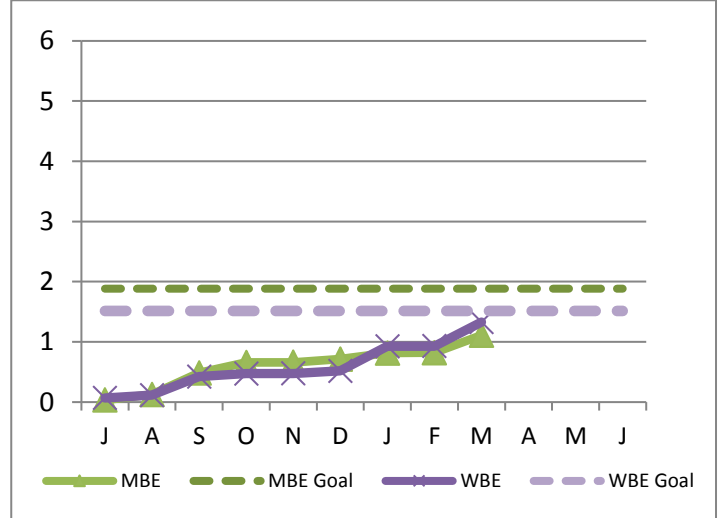
MBE/WBE targets are determined based on annual MWRA expenditure forecasts in the procurement categories noted below. The goals for FY18 are based on 85% of the total construction and 75% of the total professional projected spending for the year. Certain projects have been excluded from the goals as they 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.

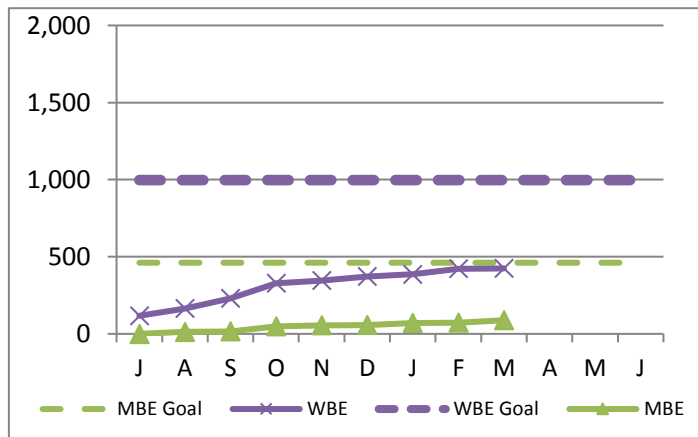
Construction



Professional Services



Goods/Services



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

MBE			
FY18 YTD		FY17	
Amount	Percent	Amount	Percent
11,002,658	151.1%	5,628,738	99.5%
1,110,210	58.9%	920,597	162.8%
88,259	19.1%	179,359	29.8%
12,201,127	126.7%	6,728,694	98.6%

WBE			
FY18 YTD		FY17	
Amount	Percent	Amount	Percent
12,734,812	351.6%	3,690,334	131.3%
1,329,118	87.8%	533,917	117.5%
424,272	42.5%	1,553,214	181.6%
14,488,202	236.2%	5,777,465	140.2%

Construction
Prof Svcs
Goods/Svcs
Totals

FY17 MBE/WBE dollar totals do not include MBE and WBE payments to prime contractors and consultants.

FY18 MBE/WBE dollar totals include F17 MBE/WBE dollars submitted in FY18.

MWRA FY18 CEB Expenses 3rd Quarter – FY18

As of March 2017, total expenses are \$521.7 million, \$5.2 million or 1.0% lower than budget, and total revenue is \$563.6 million, \$6.0 million or 1.2% over budget, for a net variance of \$11.2 million.

Expenses –

Direct Expenses are \$159.6 million, \$5.5 million or 3.3% below budget.

- **Wages & Salaries** are under budget by \$2.5 million or 3.3%. Regular pay is \$2.4 million under budget, due to lower head count, and timing of backfilling positions. At the end of March, the average Full Time Equivalent (FTE) positions were 1,140, ten fewer than the 1,150 FTE's budgeted.
- **Maintenance** expenses are \$1.9 million or 8.4% under budget due mostly to timing of projects such as the HVAC upgrades at the Braintree/Weymouth Pump Station and door replacements and PICS System upgrades at Deer Island.
- **Fringe Benefits** expenses are \$636k or 4.2% under budget, primarily for lower Health Insurance costs of \$506k due to fewer employees and retirees than budgeted participating in health insurance plans, and the shift from family to individual plans which are less expensive.
- **Worker's Compensation** expenses are \$313k or 18.0% under budget, primarily due to settlement of five claims and resolution of a few other claims through return to work resulting in compensation reserves adjustments and lower medical payments.
- **Chemicals** are \$337k or 4.6% under budget due to lower flows at the Deer Island Wastewater Treatment Plant and the Carroll Water Treatment Plant and timing of deliveries: Soda Ash by \$302k reflecting lower flows and higher natural pH at CWTP, and Activated Carbon by \$96k due to timing, partially offset by over spending of \$296k for Hydrogen Peroxide due to the lower flows at DI and overspending of \$111k for Ferric Chloride also at Deer Island.
- **Overtime** expenses are \$458k over budget or 14.8% due to recent wet weather events and snow removal, and off-hours maintenance earlier in the fiscal year.
- **Other Materials** expenses are \$243k or 7.7% under budget due to lower expenses for Health and Safety materials at DITP and lower Vehicle Expenses due to lower than budgeted fuel prices.
- **Professional Services** expenses are \$142k or 2.8% under budget due to timing of Engineering Services in Operations and Legal Services in Administration and Treasury.

Indirect Expenses are \$26.4 million, \$256k over budget or 1.0% reflecting insurance claims over budget by \$764k due to a litigation loss accrual partially offset by lower Watershed Reimbursement of \$336k due to a year-end over accrual at the end of FY17 and lower than budgeted HEEC cable O&M of \$124k.

Debt Service Expenses totaled \$335.6 million, matching the budgeted level after the transfer of \$7.0 million to the Defeasance Account. Of the \$7.0 million transferred to the Defeasance Account, \$6.0 million represents year to date savings due to lower than budgeted variable interest rates.

	March 2018 Year-to-Date			
	Period 9 YTD Budget	Period 9 YTD Actual	Period 9 YTD Variance	%
EXPENSES				
WAGES AND SALARIES	\$ 74,439,029	\$ 71,958,893	\$ (2,480,136)	-3.3%
OVERTIME	3,106,092	3,564,537	458,445	14.8%
FRINGE BENEFITS	15,295,308	14,659,003	(636,305)	-4.2%
WORKERS' COMPENSATION	1,742,235	1,428,823	(313,412)	-18.0%
CHEMICALS	7,262,253	6,924,888	(337,365)	-4.6%
ENERGY AND UTILITIES	15,678,124	15,815,947	137,823	0.9%
MAINTENANCE	22,346,921	20,462,864	(1,884,057)	-8.4%
TRAINING AND MEETINGS	306,499	223,326	(83,173)	-27.1%
PROFESSIONAL SERVICES	5,053,301	4,911,417	(141,884)	-2.8%
OTHER MATERIALS	3,175,017	2,931,869	(243,148)	-7.7%
OTHER SERVICES	16,689,484	16,725,586	36,102	0.2%
TOTAL DIRECT EXPENSES	\$ 165,094,263	\$ 159,607,153	\$ (5,487,108)	-3.3%
INSURANCE	\$ 1,510,089	\$ 2,287,857	\$ 777,768	51.5%
WATERSHED/PILOT	18,873,005	18,497,235	(375,770)	-2.0%
HEEC PAYMENT	718,084	589,153	(128,931)	-18.0%
MITIGATION	1,197,713	1,181,168	(16,545)	-1.4%
ADDITIONS TO RESERVES	615,837	615,837	-	0.0%
RETIREMENT FUND	3,277,369	3,277,369	-	0.0%
POST EMPLOYEE BENEFITS	-	-	-	---
TOTAL INDIRECT EXPENSES	\$ 26,192,097	\$ 26,448,619	\$ 256,521	1.0%
STATE REVOLVING FUND	\$ 61,488,764	\$ 60,478,403	\$ (1,010,361)	-1.6%
SENIOR DEBT	195,795,201	195,795,201	-	0.0%
CORD FUND	-	-	-	---
DEBT SERVICE ASSISTANCE	(391,580)	(391,580)	-	0.0%
CURRENT REVENUE/CAPITAL	9,900,000	9,900,000	-	0.0%
SUBORDINATE MWRA DEBT	63,569,637	63,569,637	-	0.0%
LOCAL WATER PIPELINE CP	2,846,208	2,846,208	-	0.0%
CAPITAL LEASE	2,412,795	2,412,795	-	0.0%
DEBT PREPAYMENT	-	-	-	---
VARIABLE DEBT	-	(6,000,566)	(6,000,566)	---
HEEC CABLE CAPACITY RESERV	-	-	-	---
DEFEASANCE ACCOUNT	-	7,010,927	7,010,927	---
TOTAL DEBT SERVICE	\$ 335,621,025	\$ 335,621,025	\$ -	0.0%
TOTAL EXPENSES	\$ 526,907,385	\$ 521,676,796	\$ (5,230,585)	-1.0%
REVENUE & INCOME				
RATE REVENUE	\$ 537,790,500	\$ 537,790,500	\$ -	0.0%
OTHER USER CHARGES	6,640,935	6,595,589	(45,346)	-0.7%
OTHER REVENUE	6,025,393	10,839,195	4,813,802	79.9%
RATE STABILIZATION	-	-	-	---
INVESTMENT INCOME	7,155,416	8,383,504	1,228,088	17.2%
TOTAL REVENUE & INCOME	\$ 557,612,244	\$ 563,608,788	\$ 5,996,544	1.1%

Revenue and Income –

Total Revenue and Income is \$563.6 million, \$6.0 million higher than budget, primarily due to a \$4.2 million LIBOR settlement from Barclays Bank PLC. Revenues were also over budget by \$1.2 million for favorable returns on investment income, \$228k for the final payment of a class action lawsuit settlement for derivative agreements, and \$225k for disposal of surplus material.

Cost of Debt 3rd Quarter – FY18

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.

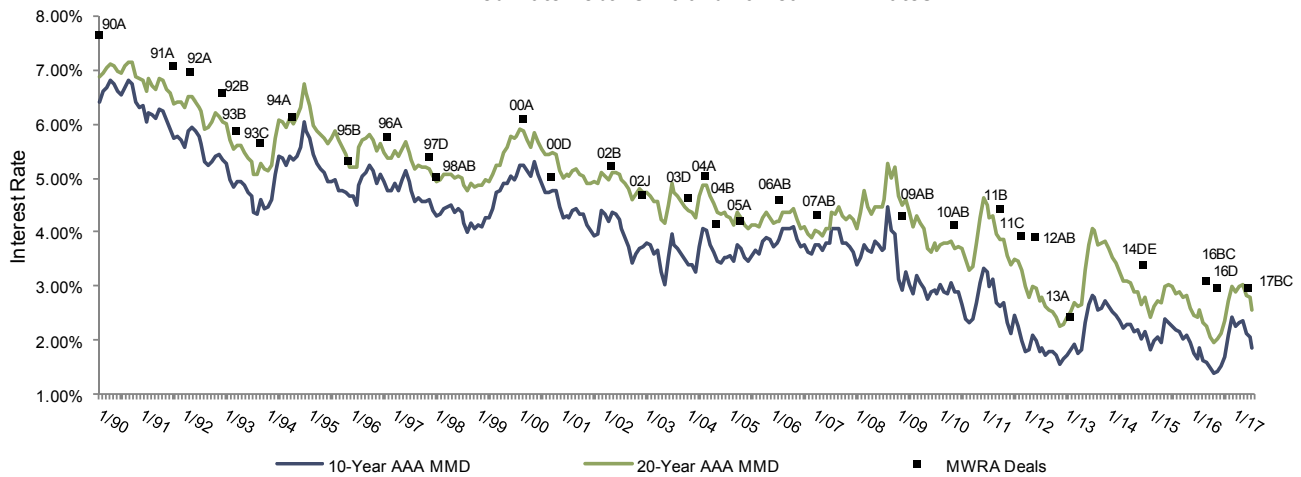
Average Cost of MWRA Debt FYTD

Fixed Debt (\$3,487)	3.81%
Variable Debt (\$464.1)	1.42%
SRF Debt (\$942.8)	1.42%
 Weighted Average Debt Cost (\$5,043)	 3.13%

Most Recent Senior Fixed Debt Issue May 2017

2017 Series B & C (\$322.9)	2.98%
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MWRA Fixed Rate Debt vs. 10 and 20 Year MMD Rates

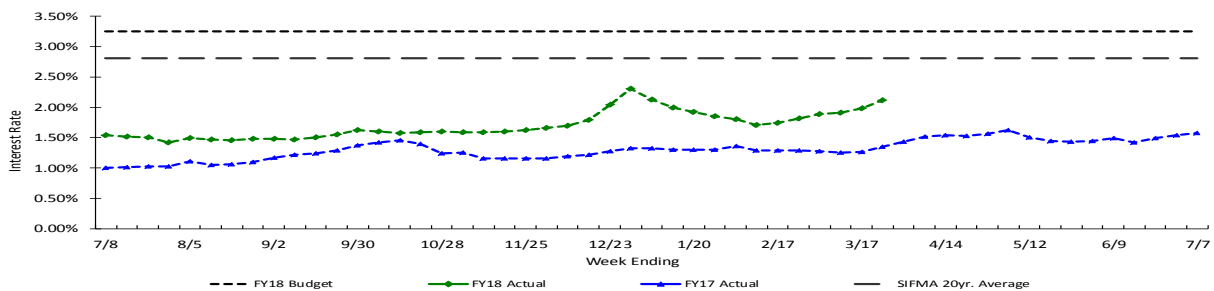


Bond Deal	1992B	1993B	1993C	1994A	1995B	1996A	1997D	1998AB	2000A	2000D	2002B	2002J	2003D	2004A
Rate	6.58%	5.89%	5.66%	6.15%	5.34%	5.78%	5.40%	5.04%	6.11%	5.03%	5.23%	4.71%	4.64%	5.05%
Avg Life	6.3 yrs	19.8 yrs	19.1 yrs	19.5 yrs	20.5 yrs	19.5 yrs	21.6 yrs	24.4 yrs	26.3 yrs	9.8 yrs	19.9 yrs	19.6 yrs	18.4 yrs	19.6 yrs

Bond Deal	2004B	2005A	2006AB	2007AB	2009AB	2010AB	2011B	2011C	2012AB	2013A	2014DEF	2016BC	2016D	2017BC
Rate	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%	2.98%
Avg Life	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	18.8yrs	11.2 yrs

Weekly Average Variable Interest Rates vs. Budget

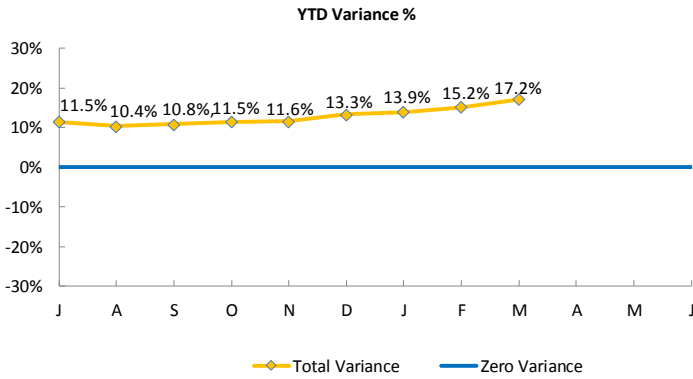
MWRA currently has ten variable rate debt issues with \$831.4 million outstanding, excluding commercial paper. Of the ten outstanding series, five have portions which have been swapped to fixed rate. Variable rate debt has been less expensive than fixed rate debt in recent years as short-term rates have remained lower than long-term rates on MWRA debt issues. In March, SIFMA rates ranged from a high of 1.58% to a low of 1.09% for the month. MWRA's issuance of variable rate debt, although consistently less expensive in recent years, results in exposure to additional interest rate risk as compared to fixed rate debt.



Investment Income

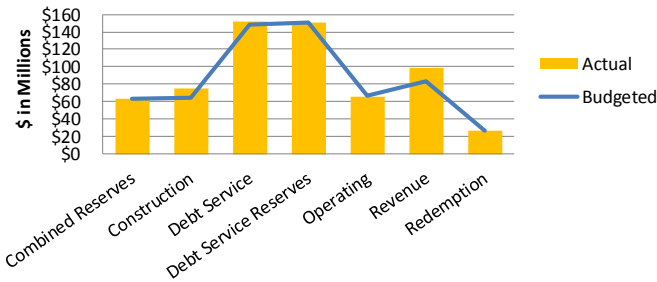
3rd Quarter - FY18

Year To Date



	YTD BUDGET VARIANCE			
	(\$000)			
	BALANCES IMPACT	RATES IMPACT	TOTAL	%
Combined Reserves	\$1	\$50	51	5.1%
Construction	\$84	\$181	265	53.6%
Debt Service	\$26	\$426	452	39.6%
Debt Service Reserves	\$0	\$5	5	0.2%
Operating	(\$18)	\$87	69	10.9%
Revenue	\$128	\$257	384	59.8%
Redemption	\$0	\$1	1	0.3%
Total Variance	\$221	\$1,007	\$1,228	17.2%

YTD Average Balances Budgeted vs. Actual

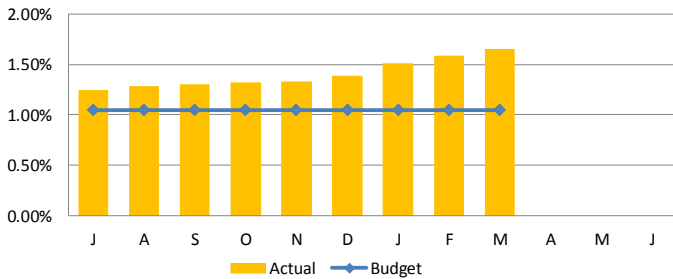


YTD Average Interest Rate Budgeted vs. Actual

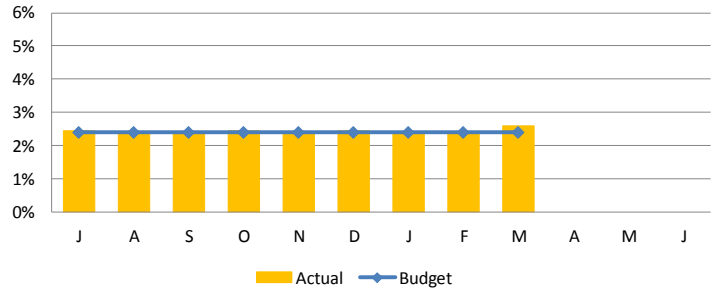


Monthly

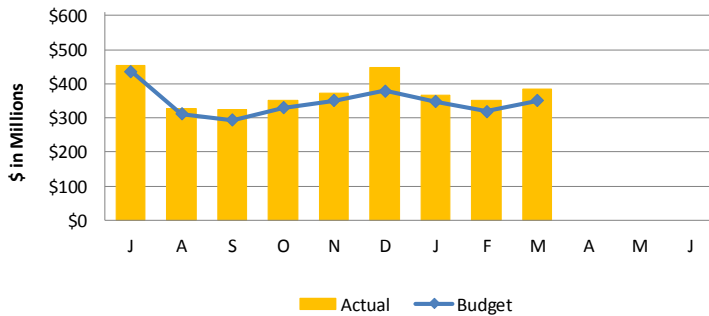
Short-Term Interest Rates



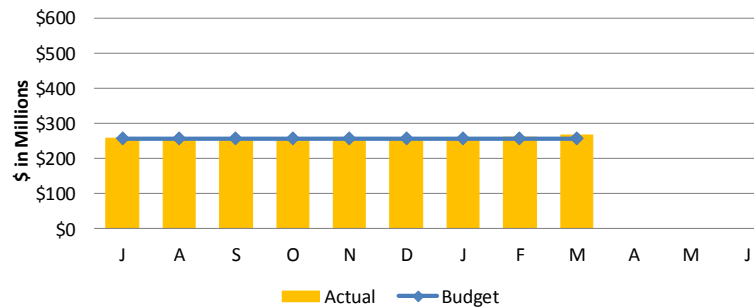
Long-Term Interest Rates



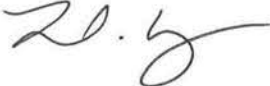
Short-Term Average Balances



Long-Term Average Balances



STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: May 30, 2018
SUBJECT: Lease Extension with Springfield Water and Sewer Commission

COMMITTEE: Administration, Finance, and Audit

 INFORMATION
 X VOTE


Michele S. Gillen

Director, Administration


David W. Coppes, P.E.

Chief Operating Officer

Beth Card, Dir. Environmental and Regulatory Affairs
Preparer/Title

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to execute a 10-year option to extend a lease between the Massachusetts Water Resources Authority (MWRA) and the Springfield Water and Sewer Commission (the Commission) beginning November 2, 2018 at a cost of \$4,067.67.

DISCUSSION:

On June 26, 1997, MWRA and the Commission entered into a lease agreement regarding MWRA's use of a portion of a parcel of land (see Attachment A) located adjacent to Route 21 at the Ludlow Reservoir. MWRA originally intended to construct a water treatment facility on this parcel for the Chicopee Valley Aqueduct System, but instead built and maintains a small water monitoring station there. The 20-year term of the lease commenced on November 2, 1998 with an option to extend for 10 years. In order to exercise the option to extend, MWRA needed to notify the Commission of its intention to extend the lease six months prior to the expiration date. Accordingly, MWRA sent its notice to extend the lease to the Commission on May 2, 2018, noting that the option to extend was pending final approval of MWRA's Board of Directors (see Attachment B). At the expiration of the extended 10-year term, a new lease or other arrangement will need to be put into place in order to ensure that MWRA is able to continue utilizing this parcel for its monitoring station.

BUDGET/FISCAL IMPACTS:

The terms of the lease required a total payment of \$6,074.33 for the original 20-year term. The total obligation for the 10-year extension period is an additional \$4,067.67. There are sufficient funds in the budget from the Chicopee Valley Aqueduct payments.

ATTACHMENTS:

- Attachment A – Parcel map
- Attachment B - Lease Agreement Extension for Property in Ludlow – May 2, 2018

Attachment A
Ludlow Monitoring Facility
Land Leased from Springfield Water Sewer Commission



5/10/2018 MwwraGISmap1956-1

0 50 100 Feet

1 inch = 100 feet

 Land Leased



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

May 2, 2018

Joshua D. Schimmel, Executive Director
Springfield Water and Sewer Commission
250 M Street Extension
Agawam, Massachusetts 01001

Re: Lease Agreement Extension for Property in Ludlow

Dear Mr. Schimmel:

The Springfield Water and Sewer Commission (the Commission) and the Massachusetts Water Resources Authority (the Authority) entered into a lease agreement on June 26, 1997 regarding the Authority's use of a portion of a parcel of land located adjacent to Route 21 at the Ludlow Reservoir, 1149 Center Street, Ludlow, Massachusetts, 01056. The term of the lease commenced on November 2, 1998, the Construction Commencement Date.

In accordance with Section 1.2 of the lease, this correspondence serves to notify the Commission that the Authority is intending to extend the lease subject to final approval of the Authority's Board at its May 30, 2018 meeting. This will be an extension of the original term for one period which shall consist of ten years. The extension period will commence on November 2, 2018.

Payment in accordance with the terms of the lease is enclosed.

Sincerely,

A handwritten signature in blue ink, appearing to read "F. Laskey".

Frederick A. Laskey
Executive Director

STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 30, 2018
SUBJECT: Bond Defeasance of Future Debt Service



COMMITTEE: Administration, Finance & Audit

X VOTE
 INFORMATION

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



Thomas J. Durkin
Director of Finance

Consistent with MWRA's multi-year rates management strategy, MWRA staff are recommending the execution of an approximately \$31.0 million defeasance in June 2018 to reduce future year rate increases. The \$31.0 million in available funds is derived from the use of \$20.0 million of the FY18 surplus, the \$10.9 million Debt Prepayment included in the FY18 CEB and \$49,068 surplus funds from FY17. These funds will be used to prepay debt service coming due in FY19 through FY22 (\$29.4 million in principal and \$1.6 million in interest). The defeasance of debt, coupled with diligent management of operational expenses, have been the keys to MWRA's ability to keep assessment increases sustainable and predictable.

RECOMMENDATION:

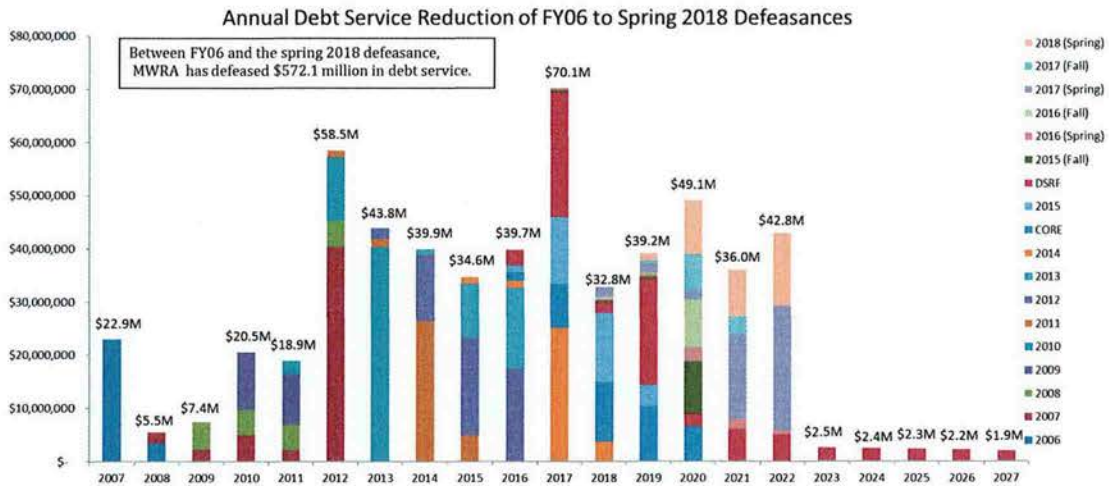
To authorize the Executive Director or his designee, on behalf of the Authority, to enter into, execute and deliver all necessary agreements and other instruments and to take such other actions necessary to effectuate the redemption and defeasance of an aggregate principal amount of \$29,420,000 of outstanding MWRA senior bonds including to cause the escrow of cash and/or securities in an amount necessary to fund such redemption and defeasance, in order to reduce the debt service requirement by \$33,962,600 in the FY19 through FY22 timeframe.

DISCUSSION:

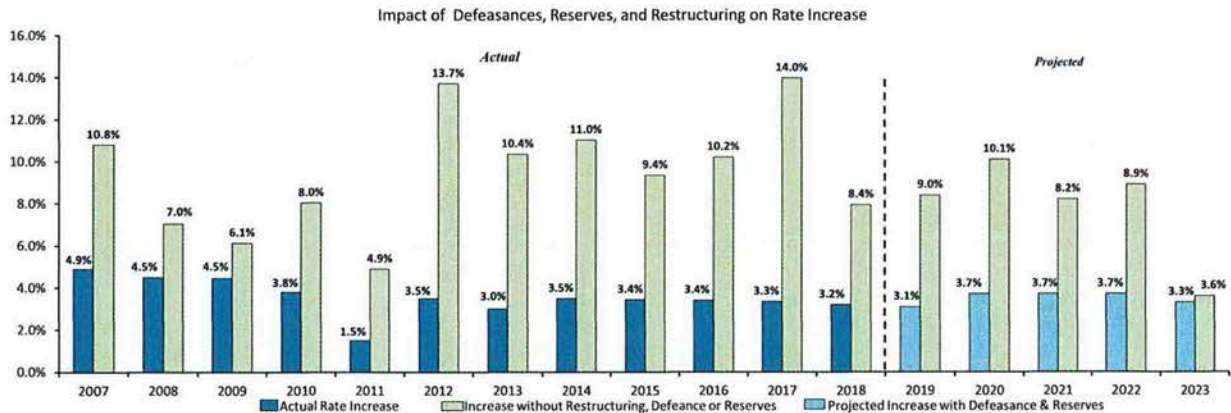
Since FY12, the MWRA has utilized the budgetary defeasance account strategy to set aside surplus funds associated with the capital finance budget to defease outstanding debt. After the final close out of the FY17 budget, there were \$49,068 in surplus funds remaining (beyond the \$10.3 million used for the October 2017 defeasance), which were allocated to the defeasance account to be utilized as part of the FY18 defeasance. In order to mitigate rate increases, staff reflected the impact of a \$25.9 million defeasance in the Proposed FY19 CEB comprised of the FY17 and FY18 surpluses as well as the FY18 CEB Debt Prepayment. Now, based on current year-end projections, the proposed defeasance has increased by \$5 million to approximately \$31.0 million, consisting of

\$20.0 million from FY18, the \$10.9 million of FY18 Debt Prepayment and \$49,068 from FY17 for even greater debt service reductions in future years.

MWRA's ongoing use of defeasances has had a significant impact in lowering future debt service payments and limiting annual rate revenue increases. From 2006 through this proposed transaction, MWRA has defeased \$572.1 million in debt service to reduce future year rate revenue requirements. The following chart details the multi-year impact of those defeasances.



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



Staff reviewed all bonds available to be defeased, and have identified the maturities of the bonds in the following table as the most advantageous defeasance candidates.

Series	Maturity	Call Date	Principal	Defeasance Cost ¹
2002J	August 1, 2020	August 1, 2020	\$ 2,100,000	\$ 2,331,000
2006B	August 1, 2022	August 1, 2018	\$ 5,495,000	\$ 5,495,000
2009B	August 1, 2021	August 1, 2019	\$ 7,700,000	\$ 8,085,000
2009B	August 1, 2022	August 1, 2019	\$ 7,500,000	\$ 7,875,000
2014D	August 1, 2020	August 1, 2020	\$ 1,380,000	\$ 1,518,000
2017C	August 1, 2020	August 1, 2020	\$ 5,245,000	\$ 5,664,600
Total			\$ 29,420,000	\$ 30,968,600

(1) Defeasance cost is only anticipated funds from surplus and does not include current year deposits. Assumes no interest earned on the escrow.

The following table details the annual budget savings by fiscal year for the proposed FY18 defeasance.

Budget Reduction by Fiscal Year				Total CEB Savings
2019	2020	2021	2022	
\$ 1,429,050	\$ 10,154,050	\$ 8,734,750	\$ 13,644,750	\$ 33,962,600

The proposed defeasance reduces debt service by a total of \$34.0 million between FY19 and FY22. The total debt service reduction attributable to the defeasance is approximately \$3.0 million higher than the defeasance cost because the 2006 Series B and 2009 Series B bonds are callable prior to their maturity date. The payment of these bonds on the call date will yield interest savings, as a result of paying off the bonds prior to maturity without interest accruing. Since 2006, MWRA has avoided \$30.1 million in interest by defeasing callable bonds.

The funds will be utilized to purchase governmental securities in an amount sufficient to make all future interest and principal payments on the bonds to be defeased, offset by the interest earned on the securities.

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

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

BUDGET/FISCAL IMPACT:

The defeasance of these bonds will decrease the FY19 through FY22 debt service requirement by \$34.0 million. The cost associated with bond counsel and financial advisory services will be paid out of the Treasury Department's professional services budget.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 30, 2018
SUBJECT: MWRA FY19 Insurance Program Renewal



COMMITTEE: Administration, Finance & Audit

 INFORMATION

 X VOTE

Paul F. Whelan, Risk Manager
Preparer/Title



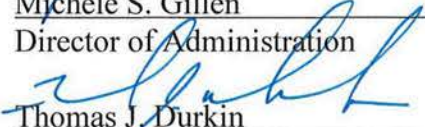
Michele S. Gillen
Director of Administration



Carolyn Francisco Murphy
Director of Procurement



Thomas J. Durkin
Director of Finance



MWRA's Insurance Program is renewed on an annual basis at the beginning of each fiscal year. Annual renewals are required due to the insurance industry's reluctance to provide firm pricing for more than a one-year period. Last year, however, staff were able to secure a two-year Property Insurance policy which provided a fixed rate for years FY18 and FY19. All other policies expire on June 30, 2018 and require renewal. This year's recommended program renewal totals \$1,640,762 which is \$96,529 (or 6%) more than the expiring FY18 program.

RECOMMENDATION:

To approve awards to the lowest eligible and responsive proposers for insurance policies, bonds, and related broker services for MWRA's FY19 Insurance Program, and to authorize the Executive Director, on behalf of the Authority, to execute contracts for broker services, for the terms, premiums, and fees described below, and incorporated by reference for the record, resulting in a total program amount not to exceed \$1,640,762 for FY19:

- (1) Workers' Compensation Excess Policy with New York Marine Insurance Co., submitted by broker Willis of Massachusetts, Inc. (Willis of Massachusetts), for the period beginning July 1, 2018, through June 30, 2019, with a \$25 million limit and a \$500,000 self-insured retention, for a premium of \$187,870;
- (2) Property Policy (including Boiler & Machinery coverage) with FM Global Insurance Co., for the second year of the two-year policy, from July 1, 2018, through June 30, 2019, with various limits of coverage and a \$2.5 million self-insured retention, resulting in a FY19 premium of \$842,745;

- (3) General Liability Policy (including Automobile Liability, Marine Liability, Wharfingers, Limited Pollution, and Employment Practice Liability) with Lexington Insurance Company submitted by broker Richards Robinson Sheppard Insurance, LLC (Richards Robinson Sheppard), for the period beginning July 1, 2018 through June 30, 2019, with a \$25 million limit and a \$2.5 million self-insured retention, for a premium of \$248,000;
- (4) Excess General Liability Policies with insurance companies to be determined and submitted by broker Richards Robinson Sheppard, for the period beginning July 1, 2018, through June 30, 2019, providing a combined total of \$75 million of excess liability coverage for a total combined premium not to exceed \$237,250;
- (5) Public Official's Liability Policy with Chubb/ACE USA Insurance Co., submitted by broker Arthur J. Gallagher Risk Management Services Inc. (Arthur J. Gallagher), for the period beginning July 1, 2018, through June 30, 2019, with a \$5 million limit and a \$1 million self-insured retention, for a premium of \$51,043, including broker commission;
- (6) Fiduciary Liability Policy with Chubb/ACE USA Insurance Co., submitted by broker Arthur J. Gallagher, for the period beginning July 1, 2018, through June 30, 2019, with a \$5 million limit and a \$1 million retention, for a premium of \$6,604 including broker commission;
- (7) Public Official's/Crime Bond with Great American Insurance Co., submitted by broker Richards Robinson Sheppard, for the period beginning July 1, 2018, through June 30, 2019, with a \$1 million limit and a \$25,000 deductible for a premium of \$4,500;
- (8) Treasurer's Bond with a \$1 million limit with an insurance company to be determined in an amount not to exceed \$2,500, with a one-year term beginning January 2019; and
- (9) Broker contracts with Richards Robinson Sheppard for an amount of \$40,000, Willis of Massachusetts, for an amount of \$20,250 and Arthur J. Gallagher for the commissions included within the policy premiums, from notice of award through June 30, 2019.

BACKGROUND:

MWRA's insurance program consists of various types of coverage including: Excess Workers' Compensation, Property (including Boiler and Machinery coverage), General Liability, Excess Liability, Public Official's Liability, Fiduciary Liability, Public Official's/Crime Bond, and Treasurer's Bond. The Excess Workers' Compensation policy is required by state statute and is a prerequisite for MWRA to operate as a self-insured entity for Workers' Compensation benefits. Insurance coverage required by MWRA's Enabling Act includes Public Official's/Crime Bond and Treasurer's Bond which serve to protect the Authority against losses due to fraudulent or dishonest acts, failure to perform duties faithfully or improper accounting of monies or property by employees. Other policies are maintained in order to protect MWRA assets and limit MWRA's financial exposure to loss. In addition, policies are maintained to comply with covenants contained within

MWRA's General Revenue Bond Resolution. All policies under the current program (except the Property policy and Treasurer's Bond) expire on June 30, 2018, and require renewal.

DISCUSSION:

MWRA's insurance program has been renewed on an annual basis for more than ten years due to the reluctance on the part of insurance companies to price policies for more than a one-year term. Last year, however, staff were able to secure a two-year property policy for years FY18 and FY19 with the application of a fixed rate charge. For FY19, staff again conducted a full competitive process for all lines of coverage, except property, in an effort to obtain the most competitive pricing and coverage available. Staff anticipated a modest increase in rates and premiums on all lines of coverage. While insurance companies have continued to benefit from a favorable stock market performance, their gains have been offset by increased losses due to a number of major catastrophic hurricanes. Such conditions have a direct effect on the availability of a Membership Credit under the Property Insurance policy. When combined with variables specific to MWRA, such as the increased replacement value of insured property due to inflation and increased estimated payrolls, staff anticipated a 5% increase in the overall insurance program cost.

This year, staff again made an effort to attract multi-year policies, but none were received. Premiums for Excess Workers Compensation, Public Officials and Property Insurance increased due to changes in MWRA rating factors including increased payroll, claim activity, increased replacement values, and the unavailability of a Membership Credit. The premium for General Liability coverage decreased slightly and the remaining coverages remained the same as the FY18 policies. There were no increases in Broker Fees. Overall, the insurance program recommended is \$96,529 (or 6%) more than the expiring FY18 program. This increase is primarily due to the unavailability of the Membership Credit (\$81,002 for FY18) applicable to the Property Insurance Policy.

PROCUREMENT PROCESS:

In February, staff began the procurement process by advertising for Letters of Interest from insurance brokers and direct writers.¹ In addition, staff sent direct solicitations to 20 brokers that were known to staff as having an interest or had participated in previous MWRA insurance procurements. In response to the solicitation, four brokers indicated an interest in participating and provided their list of preferred insurance markets. Staff reviewed all requests and assigned more than 25 insurance companies to the brokers. Technical specifications and rating data were prepared and sent to the four brokers. During the procurement process, staff received and responded to multiple questions and requests for additional information and issued two information items providing answers to questions, further information, and rating data. On April 27, 2018, four proposals were received.

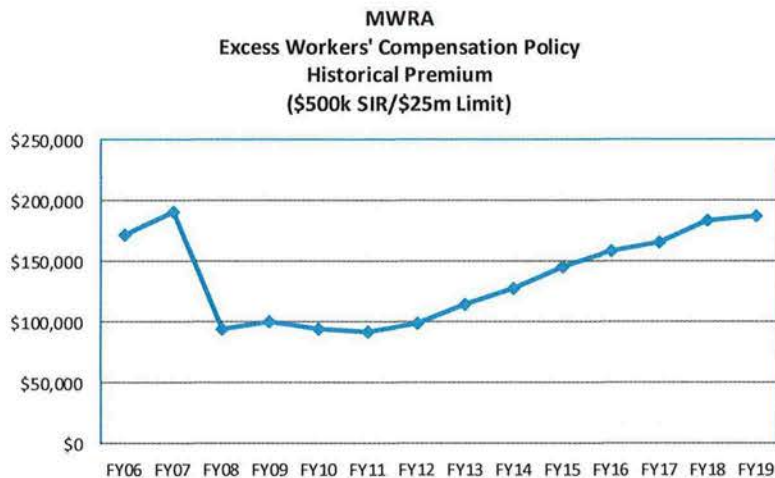
Proposals received varied with respect to the lines of coverage offered. As shown on the attached table, while multiple proposals were received for general liability coverage, the other lines of

¹ A direct writer is an insurance company that deals directly with customers and does not require a broker as an intermediary.

coverage each had only one proposal. MWRA reserved its right to select different lines of coverage from different broker proposals. All proposals were reviewed by MWRA’s Insurance Consultant, Kevin F. Donoghue and Associates (“Donoghue”) for adherence to insurance technical specifications and then rated by cost and coverage. The approvals requested herein represent those recommended by MWRA’s Insurance Consultant for each line of coverage sought. The attached table provides a summary of all lines of coverage with the limits, deductibles, and premiums comparing the expiring FY18 premiums with the proposed FY19 premiums. Below is a brief summary of each line of coverage.

Workers’ Compensation

Excess – One proposer submitted two options for this line of coverage with New York Marine Insurance Co. (the incumbent carrier). A quote for a policy with a \$500,000 self-retention level and a \$25 million limit, for an annual premium of \$187,870 was provided. This quote is \$4,131 (or 2.2%) more than the FY18 policy for this same coverage. This increase in



premium is the result of a flat rate charge applied to MWRA’s estimated payroll for FY19. A second quote was also provided for a similar policy with a \$750,000 self-insured retention. This premium was \$146,121, or \$41,749 less than the premium with a \$500,000 self-insured retention. Staff have reviewed historical workers’ compensation claims data and have concluded that the potential premium savings do not justify assuming the risk of an additional \$250,000 for each claim or occurrence, as just one catastrophic claim could eliminate and exceed more than six years of accumulated premium savings. In addition, the maximum self-retention level currently allowed by the Division of Insurance is \$500,000. Staff recommend the purchase of the policy from New York Marine Insurance Co. with a \$500,000 per occurrence self-insured retention and \$25 million limit through broker Willis of Massachusetts, for the specified premium above and an associated broker fee of \$20,250. The chart above shows MWRA’s historical premium cost for this line of coverage over the past twelve years.

Property Insurance (including Boiler & Machinery) – Last year, a multi-year policy was acquired for this line of coverage from direct writer FM Global Insurance Company. The approved policy was for two years from July 1, 2017 to June 30, 2018, with a fixed rate charge applicable to each year. The policy is now entering its second year. The FY19 premium is \$842,745 and is based upon the established fixed rate applied to MWRA’s Total Insured Value (TIV) for FY19. This year, however, the Membership Credit of \$81,002 is not available from the company due to increased losses and its overall financial performance for the past year. Membership Credits are granted annually contingent upon the company’s prior year performance. Because FM Global is a direct writer, there are no broker fees associated with this policy.

General Liability – Two responses were received for General Liability coverage. One offering the specified \$25 million in coverage and another with a \$10 million limit. Of these two, the lower cost proposal, based on an analysis performed by Donoghue, was from broker Richards Robinson Sheppard with Lexington Insurance Company (the incumbent), for a premium of \$248,000 with an associated broker fee of \$40,000, which also includes fees associated with placement of the Excess Liability coverage. The second proposal was from Knapp Schenck Insurance Services, with insurer Allied Public Risk, for a premium of \$186,512 for only a \$10 million limit and an associated broker fee of \$41,000. Donoghue reviewed the terms, conditions and coverage afforded by the proposed policies and while some terms and conditions varied between the two policies, the lower cost Lexington Insurance Company policy was recommended. This premium represents a \$10,552 (or 4%) decrease from the FY18 policy with no change in broker fee. Staff recommend the acceptance of the proposal from Richards Robinson Sheppard with a policy provided by Lexington Insurance Company for a premium of \$248,000 and an associated broker fee to Richard Robinson Sheppard of \$40,000, which includes fees associated with placement of the Excess Liability policies outlined below.

Excess General Liability – The recommended broker for General Liability coverage, Richards Robinson Sheppard, has been directed to solicit quotes from insurance companies for the additional excess layers of liability coverage.² The companies and final premium costs for the additional \$75 million of excess liability coverage were still being developed and negotiated, and were not available in time for this Board meeting. In order to keep all insurance-related items together in one staff summary, staff are recommending a not to exceed amount of \$237,250 for this item. This amount represents no change in premium from the FY18 policies. Staff will report back to the Board on the status of this item as part of the FY19 Final Current Expense Budget staff summary and presentation on June 20, 2018.

Public Official's Liability – One proposal was received for this line of coverage with the specified \$5 million limit and \$1 million self-retention, from the incumbent, Chubb/ACE USA, submitted through Arthur J. Gallagher, for a premium of \$51,043. This represents an increase of \$4,583 (or 10%) from the FY18 policy. Recent loss activity specific to the MWRA has contributed to the increase in premium. Staff recommend the placement of this coverage for the specified premium, which includes broker commission.

Fiduciary Liability – One proposal was received for this line of coverage with the specified \$5 million limit and \$1 million self-retention from the incumbent, Chubb/ACE USA, submitted through Arthur J. Gallagher, for a premium of \$6,604. This represents no change from the FY18 policy. Staff recommend the placement of this coverage for the specified premium, which includes broker commission.

Public Official's/Crime Bond – One proposal was received for this line of coverage with the specified \$1 million limit from incumbent, Great American Insurance Company, submitted through Richards Robinson Sheppard, for a premium of \$4,500. This represents no change from the FY18

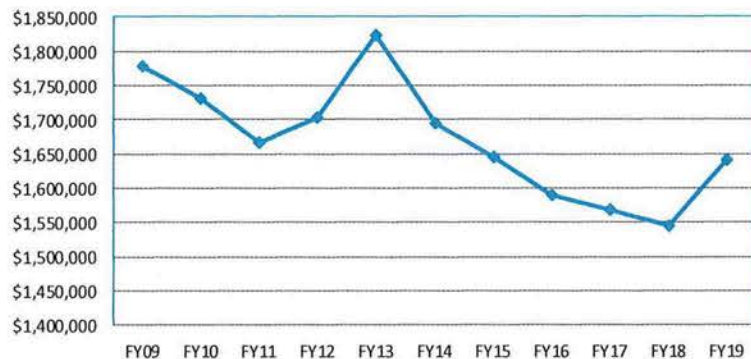
² Excess liability policies cannot be purchased until the underlying policy is first established.

policy. Staff recommend the placement of this coverage for the specified premium.

Treasurer’s Bond – The Treasurer’s Bond is required by the MWRA Enabling Act and is written in the name of the person holding the position of Treasurer. This bond is off-cycle from the rest of the insurance program and does not expire until January 2019. To keep all insurance program approvals consolidated in one staff summary, staff included a not-to-exceed amount of \$2,500 for the renewal of this bond upon its expiration. The broker fee associated with placement or renewal of this bond is included in the FY19 broker scope of services.

In conclusion, staff recommend the renewal of MWRA’s insurance program for FY19, with the various coverages, limits and self-insured retention levels from various brokers and insurance companies as outlined above and as included in the attached table. If approved, the FY19 total insurance cost will be \$1,640,762 representing a \$96,529 (or 6%) increase in costs from the FY18 program. The chart at right provides MWRA’s Insurance Program historical costs for the past ten fiscal years.

**MWRA
Insurance Program
Historical Premium Costs**



BUDGET/FISCAL IMPACT:

The Draft Final FY19 CEB includes \$2.1 million for the total cost of maintaining MWRA’s insurance program; consisting of \$1.7 million for the payment of premiums and fees and \$.4 million for payment of estimated claims and damages in FY19. The budget contains sufficient funds for the renewal of the insurance program outlined above.

MBE/WBE PARTICIPATION:

There were no minimum MBE and WBE participation requirements established for this procurement, as the nature of the services being provided does not allow for subcontracting.


MWRA FY19 INSURANCE PROPOSALS

EXPIRING FY18				PROPOSED FY19			
Item #	Coverage	Deductible/ Limit	Actual FY18 Premium	Current (FY18) Insurance Co. (Broker)	Recommended FY19 Bids	FY19 Insurance Co. (Broker)	Notes
1	Excess Workers Comp.	\$500K / \$25M \$750K/\$25M	183,739	N.Y. Marine (Willis of Massachusetts)	187,870 146,121	N.Y. Marine (Willis of Massachusetts) N.Y. Marine (Willis of Massachusetts)	Net premium increase of \$4,131 (or 2.3%). The \$500K deductible option is maximum allowed by Division of Insurance. Higher deductible alternative not feasible.
2	Property Insurance (including Boiler & Machinery)	\$2.5M / \$300M	745,219	FM Global (No Broker)	842,745	FM Global (No Broker)	FY19 premium is based on a fixed rate applied to a 2% increase in Total Insured Value. FY19 premium does not include Membership Credit (\$81,002) that was available for FY18. FY19 is the second year of a two year policy.
				Note: This is the second year of a two year Policy (FY18 and FY19) Approved by the Board on 6/7/2017.			
3	General Liability (Incl., Auto, Marine, Wharfingers, Limited Pollution and Employment Practice Liability)	\$2.5M/\$25M \$2.5/\$10M	258,552	Lexington Insurance Co. (Richards Robinson Sheppard)	248,000 186,512	Lexington Insurance Co. (Richards Robinson Sheppard) Allied Public Risk (Knapp Schenck)	Lexington Premium decrease of \$10,552 (or 4%). Premium includes 4% surplus lines fees. Allied Public Risk proposal is only \$10M vs \$25M. Allied proposal also had coverage deficiencies.
4	Excess Liability	\$25M/\$75M	237,250	Ironshore, Great American, ACE (Richards Robinson Sheppard)	237,250	To be determined. (Richards Robinson Sheppard)	Premium shown is not-to-exceed amount. This coverage must follow the selection of the General Liability coverage. Amount shown is same as last year (FY18).
5	Public Official's Liability	\$1M / \$5M	46,463	Chubb/ACE (Arthur J. Gallagher)	51,043	Chubb/ACE (Arthur J. Gallagher)	Premium increase \$4,583 (or 10%) from last year. Premium includes \$7,656 broker commission.
6	Fiduciary Liability	\$1M / \$5M	6,604	Chubb/ACE (Arthur J. Gallagher)	6,604	Chubb/ACE (Arthur J. Gallagher)	Premium is flat from last year. Chubb/ACE quote includes \$1,320 brker fee.
7	Public Official's/Crime Bond	\$25K / \$1M	4,500	Great American (Richards Robinson Sheppard)	4,500	Great American (Richards Robinson Sheppard)	Premium is flat from last year. Great American quote includes broker fee.
8	Treasurer's Bond	\$0/\$1M	1,656	Travelers Casualty & Surety (Richards Robinson Sheppard)	2,500	To Be Determined (Richards Robinson Sheppard)	Renews in January 2019. Amount shown is not-to-exceed amount.
9	Broker Fees -Various		60,250	Various	60,250	Various - See Note 2	No Change in broker fees.
Total Program Cost			\$ 1,544,233		\$ 1,640,762		Total Program Increase of \$96,529 (or 6%).

Note 1: Proposed for approval shown in bold.

Note 2: Broker Fees are \$40,000 for Richards Robinson Sheppard and \$20,250 for Willis of Massachusetts.
Arthur J. Gallagher's commission for Public Official and Fiduciary Policies are included in premiums shown.

STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: May 30, 2018
SUBJECT: Delegation of Authority to Execute a Contract for the Purchase and Supply of Electric Power for the Deer Island Treatment Plant

COMMITTEE: Administration, Finance, & Audit

 INFORMATION
 X VOTE


Michele S. Gillen
Director of Administration

Carolyn M. Fiore, Deputy Chief Operating Officer
Michael McDonald, Manager, Energy
Preparer/Title


David W. Coppes, P.E.
Chief Operating Officer

MWRA has competitively procured electricity since 2001. In the competitive bid process, the challenge is to determine the level of risk/certainty that MWRA is willing to assume, and to estimate the potential budget impacts for a variety of options. The current contract for Deer Island expires at the end of October 2018. In a commodity market where prices change within a very short period of time, MWRA must be prepared to award a contract almost immediately after bids are received to lock in the pricing. Due to the unpredictability of future market pricing, the exact bid opening date for this power procurement is not yet established. As a general rule, it is not advised to bid during peak winter or summer months, however this does not preclude a market event that may drive prices lower at any point during the year. On the day bids are received, staff will evaluate the bids based on market conditions and pricing received. To ensure that MWRA is prepared to execute a replacement power contract if the pricing received is favorable, staff recommend that the Board authorize the Executive Director to award a contract to the successful bidder. Staff will report to the Board the bid results and any contract execution for electric power supply for the Deer Island Account.

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to execute a contract for the supply of electric power to the Deer Island Treatment Plant with the lowest responsive and responsible bidder, for the period and pricing structure determined by staff to be in MWRA's best interest, and for a contract supply term not to exceed 36 months for the Deer Island Account. This delegation of authority is necessary because MWRA will be required to notify the selected bidder of the award within a few hours of the bid submission to lock in the bid prices.

BACKGROUND:

Based on MWRA account load profiles, and energy advisor consultation, MWRA has established three distinct electricity supply contracts. The Deer Island Treatment Plant Account represents one of those contracts and roughly two thirds of MWRA's total purchased electricity. The next largest contract is for the larger "Interval" Accounts, which include the Carroll Water Treatment Plant, the Nut Island Headworks, and the Clinton Treatment Plant. The third contract is for the smaller, non time-of-use accounts, known as "Profile" Accounts, (e.g., CSOs, pump stations, and the Charlestown Navy Yard), representing less than 5% of MWRA's total purchased load. Deer Island also self-generates approximately 28% of its total plant electrical demand from a combination of on-site resources including approximately 22% from methane digester gas, 1% from diesel combustion turbine generators, and 5% from renewables. (Note that FY 2017 recorded a higher value for self-generation due to testing as part of the cross harbor Eversource cable).

The existing supply contract for Deer Island, which expires in October, 2018, is for the purchase of a 10MW (peak hours)/3MW (off-peak hours) fixed-price block, with the balance of the load purchased from the variable-rate spot market. In 2016, purchased energy provided approximately 72% of Deer Island's total plant demand, with the balance generated from digester gas, wind turbines, solar panels, and hydroelectricity. The current contract structure covers approximately 50% of Deer Island's load with a fixed block pricing structure and 50% via a variable pricing in the ISO-NE Real Time Market. Locking in fixed pricing does carry a premium, but it balances the risk taken when purchasing a commodity from a sometimes volatile market.

Historically, bids are taken for several different contract structures and durations, including a 100% variable-rate, spot market contract, and also a fixed-price block with the balance of the load purchased from the variable-rate spot market. In preparation for the receipt of bids, staff reviewed Deer Island's historical energy load profile and estimated future load profile. This helps staff quantify the impact that various contracting structures will have on the final cost to the MWRA, which is important for determining the ideal structure to execute at that time. Additional detailed analysis will continue prior to submission of bids. Due to the unpredictability of the electricity market, there can be price swings in either direction.

DISCUSSION:

Staff recommend that MWRA continue to procure electric power supply for the Deer Island account separate from the other two accounts. There are no apparent economies of scale savings if the loads are combined with the MWRA's other two accounts (i.e., the Profile and Interval accounts). There may also be a price increase to the administrative fee to purchase the variable load electricity due to the additional administrative responsibilities with multiple Interval accounts, if the accounts were to be combined. In addition, staff recommend that the other two contracts remain separate to minimize the risk of having the majority of MWRA's load bid at the same time during potential future high-price market conditions. The electricity supply contract for MWRA's smaller Profile Accounts are also procured separately because these accounts are based on an "all-in" pricing structure and typically have higher administrative contract management costs, which make them less attractive to prospective bidders.

Bids for the Deer Island Account will likely be similar to the current structure, where the Authority sought to supply a base block of power at a fixed-price per MWH (based upon various peak and off peak fixed blocks), plus a fixed-fee adder (charge) to purchase and supply a variable amount of electricity above the base block at market prices. All ancillary charges and any congestion charges would be passed through to MWRA at cost.

The fixed-price block will protect MWRA from potential winter price spikes, similar to previous years, due to competing interests for natural gas and associated regional pipeline constraints, which are expected to persist. The off-peak block allows MWRA to potentially realize more savings in the off-peak hours when spot prices are typically lower and less volatile.

Bids will also be sought for an all-in, firm fixed price, with pricing to include all services and products necessary to provide firm delivery of energy to the Deer Island Account.

The Deer Island contract start date will be November 1, 2018 and bids will be sought for various durations, ending October 31 for each alternative, not to exceed 36 months.

In the event that staff determine that it is not in the best interest of MWRA to enter into a fixed-price contract or a contract containing a mix of fixed block and variable pricing, bids will also be requested for the purchase of Deer Island's entire load at variable-rate market clearing prices. This 100% variable-rate supply contract would be awarded to the responsive supplier with the lowest transaction cost for purchasing the facility's entire load in the variable-rate market for a term of up to 24 months, and would provide for early termination after the first six months.

To ensure that MWRA is prepared to execute a replacement power contract if the bid pricing received is favorable, staff recommend that the Board authorize the Executive Director to award a contract to the successful bidder on the day the bids are received.

BUDGET/FISCAL IMPACTS:

Deer Island's total electricity budget for FY19 is \$9.3 million. This amount includes approximately \$5.7 million for electricity supply and \$3.6 million for the transmission and distribution costs charged by the local distribution companies. The authorization staff are recommending today is for purchasing the Deer Island Wastewater Treatment Plant electricity supply, or approximately two thirds of MWRA's demand. Staff will assess the impact of the bids taken in comparison with the budgeted amounts and update the Board accordingly.

MBE/WBE PARTICIPATION:

There will be no MBE or WBE participation requirements established for this procurement due to limited opportunities for subcontracting.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 30, 2018
SUBJECT: Main Line Adjustment Project
Fore River Railroad
J.F. White Contracting Co.
Contract FRR32



COMMITTEE: Administration, Finance & Audit

 INFORMATION

 X VOTE



Michele S. Gillen
Director of Administration



Thomas J. Durkin
Director of Finance

Sean R. Cordy, Senior Financial Analyst *src*
Matthew R. Horan, Treasurer *MH*
Preparer/Title

RECOMMENDATION:

To approve the award of Contract FRR32, Main Line Adjustment- Fore River Railroad, to the lowest responsible and eligible bidder, J.F. White Contracting Co., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$2,437,700, with a contract term of 190 calendar days from the Notice to Proceed.

DISCUSSION:

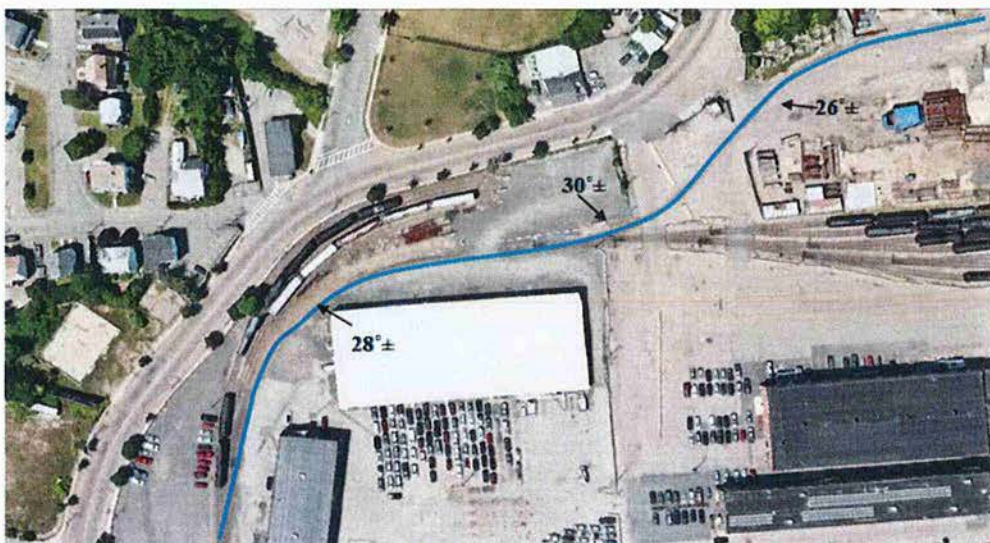
The Fore River Railroad Corporation (FRRC) is a Massachusetts railroad corporation, wholly owned by MWRA, which was acquired in 1987 as part of the purchase of former General Dynamics Quincy Shipyard. The FRRC has been providing freight rail services to the Quincy Point area since 1903 and its current primary customers are the MWRA's Pelletizing Plant and Twin Rivers Technologies Manufacturing.

Operations on the railroad are conducted by Fore River Transportation Corporation under an agreement with the FRRC. Under the terms of the operating agreement, Fore River Transportation Corporation pays the FRRC 50.5% of its gross revenue. The FRRC uses this revenue, along with available funds to pay for its operating and capital expenses. MWRA was awarded a \$500,000 grant from the Massachusetts Department of Transportation's Industrial Rail Access Program for this project. The FRRC's cash flow projections indicated it will have sufficient funds to pay for all project costs not covered by the grant funding.

When the Fore River Railroad was constructed in 1903, the locomotives and railcars were generally

40 to 50 feet long. At that time, the sharp curves necessary to extend the tracks around buildings and other shipyard structures were not a hindrance to operations. As the length of the rail equipment has increased, the sharp curves present an increased risk for derailment. Due to the increased risk of derailment, the size of railcars which can access a large portion of the shipyard is limited to 62 feet and only locomotives with four axles, instead of the more standard six axles can safely navigate the curves.

Currently, the section of the mainline track located within the former shipyard adjacent to South Street contains a series of sharp curves which start with an approximately 28° right curve followed by an "S" curve, which starts as 30° to the left and then 26° to the right. Given the sharpness of the curves and their close proximity to each other, the front and back wheels of the railcars are heading in opposite directions while in the curves, which presents an increased risk of derailment. The photograph below shows the location of the proposed work.



The proposed work under this contract includes construction of a new main line track with a more gradual 18° curve as it extends around the existing buildings. The new alignment will allow cars up to 89 feet long access to the entire railroad. The new alignment of the main line will require the existing storage tracks to be removed. A new, longer storage track will replace the two existing tracks. The new alignment of the main line will allow for most of the new track to be constructed while keeping the railroad in service. The final transition to the new alignment will likely occur over an extended weekend shutdown to insure minimal interruption to freight services. A diagram of the new track alignment is attached.

Procurement Process

Contract FRR32 was advertised in the Central Register, the Boston Herald, El Mundo, Banner Publication and COMMBUYS and bid in accordance with Chapter 30 of the Massachusetts General

Laws. Bids were opened on May 18, 2018 from four contractors with the following results:

<u>Bidders</u>	<u>Bid Price</u>
J.F. White Contracting Co.	\$2,437,700
R. Zoppo Corporation	\$2,569,650
A.A. Will Corporation	\$2,587,000
<i>Engineer's Estimate</i>	<i>\$2,617,398</i>
LM Heavy Civil Construction, LLC	\$2,827,767

The bid price submitted by J.F. White Contracting Co. is \$179,698 or 6.9% lower than the Engineer's Estimate. Staff have determined that the bid is complete, reasonable, and includes the payment of prevailing wages as required. J.F. White's qualifications were reviewed, references were checked, and the firm's performance was reviewed on a variety of projects. All reference checks conducted were found to be favorable. J.F. White has completed several projects for the Fore River Railroad including the Elm Street Grade Crossing Replacement and various tie replacement projects. Its performance has been very good and the work was completed on time. Based upon the information received, staff are of the opinion that J.F. White understands the nature and complexity of the project, has the skill, ability and integrity necessary to complete the work, and is qualified to do so. Therefore, staff recommend the award of this contract to J.F. White as the lowest responsible and eligible bidder.

BUDGET/FISCAL IMPACT:

The Work under this contract will be funded through the \$500,000 grant from the Commonwealth's Industrial Freight Rail Access Program and the FRRC's available funds. Funding for this project is included in the FRRC's approved 2018 Current Expense Budget.

MBE/WBE PARTICIPATION:

There are no MBE/WBE participation requirements established for this contract due to limited opportunities for subcontracting.

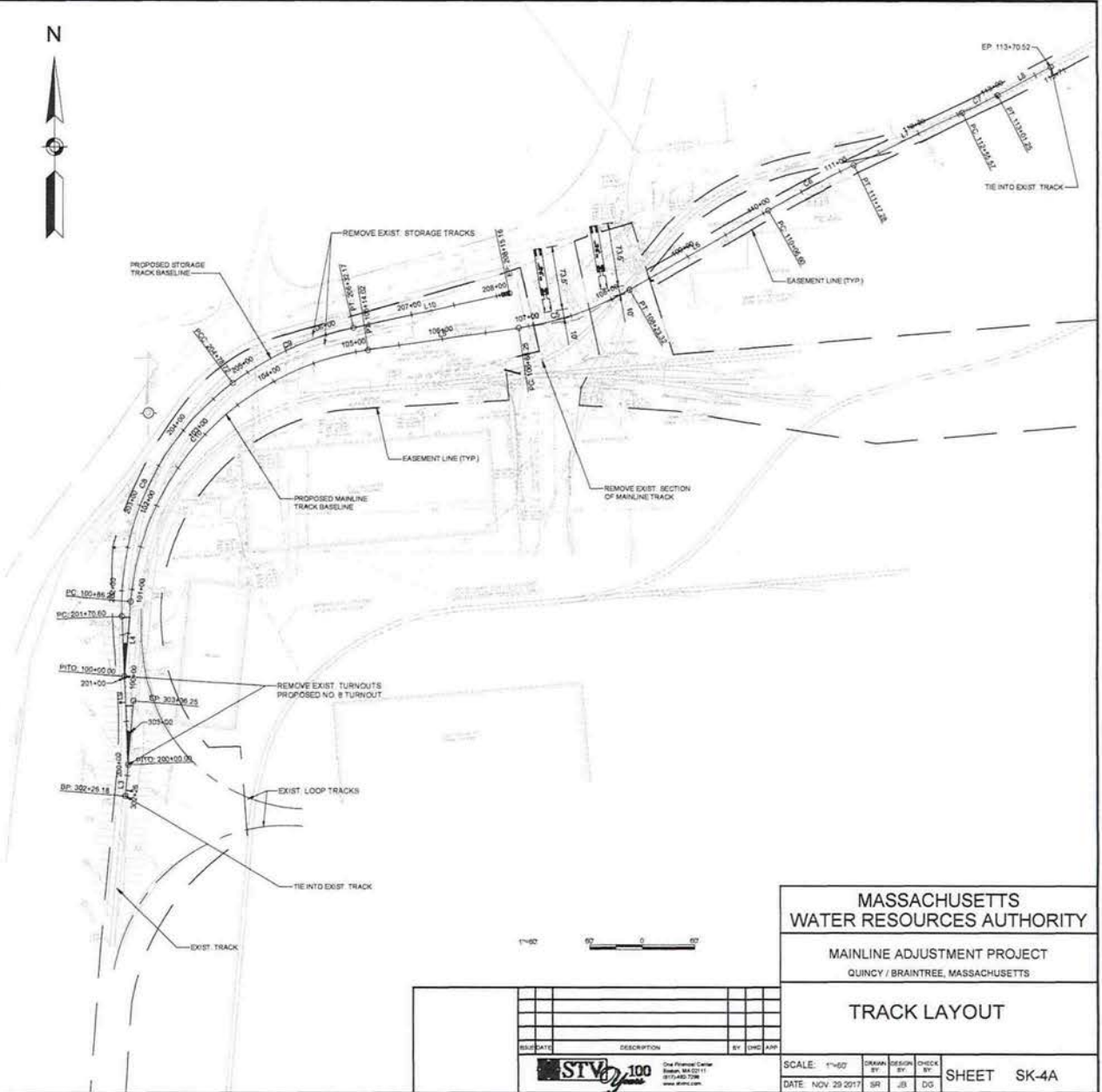
ATTACHMENT:

Fore River Railroad Track Layout

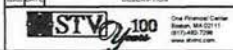


PROPOSED MAINLINE TRACK 1				
Number	Start Station	Start Northing	Start Easting	Data
L4	100+00.00	2913680.2212	797641.1527	Bearing: N4° 51' 02" E Distance: 86.20
C10	100+86.20	2913766.1133	797648.4417	$\Delta c = 76.6909$ D = 18° 00' 00" R = 319.62 Lc = 427.82 V = 10 mph
L5	105+14.02	2914055.2325	797919.9054	Bearing: N81° 32' 29" E Distance: 174.23
C5	106+88.25	2914080.8602	798092.2376	$\Delta c = 21.5394$ D = 15° 59' 55" R = 359.30 Lc = 135.07 V = 10 mph
L6	108+23.32	2914125.0819	798219.0243	Bearing: N60° 00' 08" E Distance: 163.29
C6	110+06.60	2914216.7188	798377.7578	$\Delta c = 3.8561$ D = 3° 29' 05" R = 1644.51 Lc = 110.88 V = 10 mph
L7	111+17.28	2914268.7884	798475.3994	Bearing: N63° 51' 30" E Distance: 136.29
C7	112+55.57	2914329.7178	798599.5428	$\Delta c = 1.5425$ D = 3° 22' 38" R = 1696.61 Lc = 45.68 V = 10 mph
L8	113+01.25	2914350.3944	798640.2757	Bearing: N62° 18' 57" E Distance: 69.26

PROPOSED STORAGE TRACK				
Number	Start Station	Start Northing	Start Easting	Data
L9	200+00.00	2913576.6711	797645.2352	Bearing: N2° 18' 08" W Distance: 170.60
C8	201+70.60	2913749.1348	797638.3823	$\Delta c = 55.2329$ D = 18° 00' 00" R = 319.62 Lc = 308.11 V = 10 mph
C9	204+78.72	2914017.0030	797765.0848	$\Delta c = 24.4723$ D = 16° 00' 00" R = 359.26 Lc = 153.45 V = 10 mph
L10	208+32.17	2914080.9597	797903.2806	Bearing: N77° 24' 11" E Distance: 162.99



MASSACHUSETTS WATER RESOURCES AUTHORITY																					
MAINLINE ADJUSTMENT PROJECT QUINCY / BRAINTREE, MASSACHUSETTS																					
TRACK LAYOUT																					
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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

to be held on

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

Wednesday, May 30, 2018

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

Time: Immediately following AF&A Committee

AGENDA

A. Approvals

1. Wastewater Advisory Committee Contract
2. Approval of One New Member of the Wastewater Advisory Committee

B. Contract Amendments/Change Orders

1. Chelsea Creek Headworks Upgrade, BHD/BEC 2015, A Joint Venture, Contract 7161, Change Order 12

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Wastewater Policy and Oversight Committee

April 18, 2018

A meeting of the Wastewater Policy and Oversight Committee was held April 18, 2018 at the Authority headquarters in Charlestown. Chairman Flanagan/Vice-Chairman Walsh presided. Present from the Board were. Messrs. Blackmon, Carroll, Pappastergion, Peña, Vitale and Ms. Wolowicz. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Richard Adams, John Colbert, David Coppes, Carolyn Francisco Murphy, Meredith Norton, John Vetere and Kristin MacDougall. The meeting was called to order at 11:02 a.m.

Approvals

* Approval of Amendment 1 to Memorandum of Understanding with Mass. Department of Fish and Game for Public Access Fishing Pier at Deer Island

There was discussion and questions and answers about Amendment 1 to an existing Memorandum of Understanding (MOU) with the Massachusetts Department of Fish and Game and other fisheries offices authorizing the Department to permit, design and construct a public fish pier and twenty parking spaces within a portion of the Deer Island public access area. Mr. Blackmon recommended that staff consider the installation of a solar-paneled covered parking shelter to demonstrate environmental leadership. (Mr. Carroll joined the meeting during the discussion.)

The Committee voted to approve the Amendment (ref. item A.1.)

Awards

* Agency-Wide Technical Assistance Consulting Services, Hazen and Sawyer, PC, Contract 7498, and Kleinfelder Northeast, Inc., Contract 7604

Staff made a presentation that included examples of technical assistance and consulting task order projects (Ms. Wolowicz left the meeting during the presentation.) There was a period of discussion and questions and answers. (Ms. Wolowicz returned to the meeting during discussion.)

* Approved as recommended at the April 18, 2018 Board of Directors meeting.

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

* Repair of Three Digester Mixer Assemblies at the Deer Island Treatment Plant: Flowserve Corporation

Staff made a presentation that provided an overview of the project. There was brief discussion and questions and answers. (Mr. Blackmon briefly left and returned to the meeting during discussion).

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

* Gravity Thickener Rehabilitation, Deer Island Treatment Plant, Walsh Construction Company II, LLC, Contract 7428


Staff made a presentation about the condition of the gravity thickeners, the proposed improvements and the contractor bid selection process. There was brief discussion and questions and answers.

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

The meeting adjourned at 11:41 a.m.


* Approved as recommended at the April 18, 2018 Board of Directors meeting.


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: May 30, 2018
SUBJECT: Wastewater Advisory Committee Contract

COMMITTEE: Wastewater Policy & Oversight

INFORMATION
 VOTE

Wendy Leo, Senior Program Manager
Preparer/Title 

Sean Navin 
Director, Intergovernmental Affairs

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to execute a contract, substantially in the form attached hereto, with the Wastewater Advisory Committee for a term of one year, from July 1, 2018 to June 30, 2019, for a total contract cost of \$72,757.92.

DISCUSSION:

In addition to the critical oversight functions of the Advisory Board, many of MWRA's policy decisions are made with advice and support from two standing citizens' advisory committees, the Wastewater Advisory Committee (WAC) and the Water Supply Citizens Advisory Committee (WSCAC). A separate staff summary presented at this meeting recommends authorization for the Executive Director to execute a similar contract with WSCAC for FY19.

The Wastewater Advisory Committee (WAC) was created in 1990 to offer independent recommendations on wastewater programs and policies; it is a successor to the Facilities Planning Citizen Advisory Committee established during the planning of the new Deer Island Treatment Plant. WAC's members include citizen advocates, representatives from the Metropolitan Area Planning Council, watershed associations, the engineering and business communities, environmental law, and science and education fields. The Advisory Board has historically appointed a member as well.

The proposed FY19 WAC contract is 2.9% higher than FY18 contract. Hourly salary increased 3% and health insurance increased 3%. All other areas of the budget were level funded. Health insurance is budgeted at 80% reimbursement for the Executive Director only, not to exceed \$9,838, with an optional health insurance buy-out program similar to that offered to MWRA employees who do not use MWRA's health insurance benefit. Office space and support services for WAC are provided by MWRA at the Charlestown Navy Yard Headquarters. The proposed total FY19 WAC funding is \$72,757.92.

WAC's monthly meetings are geared towards engendering discussion and facilitating timely recommendations to MWRA's Board of Directors and staff on wastewater policies, projects, and program initiatives directly related to MWRA, and public concerns. Current topics of interest to WAC include operations and maintenance, NPDES delegation, climate change adaptation, receiving water monitoring, residuals management, and wastewater/water policy and funding initiatives in Massachusetts.

WAC elects its chairman and employs an Executive Director (selected by WAC's membership with the concurrence and approval of MWRA's Public Affairs Department). WAC's current chairman is Craig Allen and WAC's current Executive Director is Andreae Downs. Pursuant to the terms of the attached contract, WAC's members are approved by MWRA's Board of Directors and a separate staff summary is being presented at this meeting to appoint a new member.

In addition, a staff summary is also being presented at this meeting recommending authorization for the Executive Director to execute a similar contract with the Water Supply Citizens Advisory Committee for FY19.

BUDGET/FISCAL IMPACT:

Sufficient funds for the WAC contract is included in the Draft Final FY19 Current Expense Budget.

ATTACHMENT:

Copy of Agreement between Massachusetts Water Resources Authority and Wastewater Advisory Committee.

AGREEMENT
BETWEEN
MASSACHUSETTS WATER RESOURCES AUTHORITY
AND
WASTEWATER ADVISORY COMMITTEE

This Agreement (“Agreement”) is by and between the Massachusetts Water Resources Authority (“Authority”), a body politic and corporate and a public instrumentality of the commonwealth, created by Chapter 372 of the Acts of 1984, with offices at Building 39, Charlestown Navy Yard, Charlestown, Massachusetts 02129 and the Wastewater Advisory Committee (“WAC”) a body created by the Authority’s Board of Directors (“Board”) (collectively “Parties”).

WHEREAS, the WAC was created to offer independent advice to the Board and to the professional staff of the Authority, regarding wastewater programs and policies directly related to the Authority;

WHEREAS, the WAC will (i) review and comment to the Authority on wastewater reports and related proposed documents, and (ii) offer independent commentary and advice on current and proposed wastewater program and policy directions to further Authority objectives;

WHEREAS, the WAC membership is designed to reflect the knowledge and interest of major affected constituencies, including engineering, construction, business/industry, planning, academic research, and environmental advocacy;

WHEREAS, the Authority desires the WAC to advise the Authority in wastewater planning, and

WHEREAS, the WAC desires to have a role advising the Authority on such matters.

NOW, THEREFORE, for the consideration of mutual promises contained herein, the Authority and WAC agree as follows:

ARTICLE 1. EFFECTIVE DATE

This Agreement shall be effective from July 1, 2018 through June 30, 2019, inclusive.

ARTICLE 2. COMPENSATION, BUDGET, PAYMENT, AND EXPENSES

2.1 The Authority shall make funds available as follows:

(a) Executive Director Salary.

In order to minimize the WAC's expenses and for the WAC's convenience, the Authority shall make direct payments to the WAC for the WAC Executive Director salary. Such payments shall not exceed \$61,294.92 from July 1, 2018 through June 30, 2019, inclusive. The hourly salary rate (inclusive of payroll taxes) shall be \$42.36 with annual total hours of 1,447 (average 30 hours per week for 49 weeks).

(b) Reimbursable expenses.

The Authority shall reimburse the WAC for 80% of the non-employer-sponsored health insurance for the WAC Executive Director (not to exceed \$9,838), and for stationery, payroll services expenses, bank expenses, and for mileage costs, public transportation costs, highway tolls and parking expenses for meeting attendance by WAC's Executive Director and membership, and for other miscellaneous expenses of the WAC staff approved by the Authority on a case-by-case basis. Such expenses will be reimbursed when submitted to the Public Affairs Unit. Mileage costs will be reimbursed at the prevailing Authority rate per mile.

The percentage rate for reimbursement of health insurance costs shall be changed to that of Authority staff if the Group Insurance Commission changes the rate.

Health insurance buy-out: The WAC Executive Director may elect a monetary allowance in lieu of reimbursement of health insurance costs, provided he or she has health insurance coverage through another employer-sponsored plan that meets Internal Revenue Service "minimum value" criteria, throughout that six-month period. The amount of the allowance will be \$1000 to waive family coverage or \$700 for waiving individual coverage. The WAC Executive Director is responsible for any withholding taxes on these payments with WAC being responsible for the employer share of payroll taxes.

The total annual expense reimbursement to WAC, excluding health insurance reimbursements or buy-out, shall not exceed \$1,625.00.

(c) Non-reimbursable expenses.

The following expenses are not reimbursable: meals, entertainment, room and board expenses, fines, fees, or costs assessed as a result of improper or illegal actions on the part of the member, such as parking tickets or speeding fines.

ARTICLE 3. RESPONSIBILITIES OF THE AUTHORITY AND WAC.

- (a) The WAC shall employ an Executive Director who is prohibited from being a member of the WAC while serving his or her term as a paid employee. The Authority Public Affairs Office must concur with and approve the selection of the WAC Executive Director by the WAC. The duties of the Executive Director shall be in accordance with the job description prepared by the WAC, and on file with the Authority.
- (b) The WAC shall submit weekly statements to the Authority requesting payment for expenses listed in Article 2. Such requests shall be supplemented or accompanied by time sheets, travel and expense vouchers, and by such other supporting data as may be required by the Authority.
- (c) The WAC shall maintain accounts, records, documents, and other evidence directly pertinent to performance of work under this Agreement. The parties and their duly authorized representatives shall have access to such records, documents, and other evidence for the purpose of inspection, audit, and copying.
- (d) The Authority or its duly authorized agent shall have the right at any and all reasonable times, to examine and audit WAC's records, documents and other evidence.
- (e) This Agreement is subject to the laws dealing with the expenditures of public funds, including Chapter 12A of the Massachusetts General Laws.
- (f) The parties shall agree to any reasonable modifications or changes in this contract that may be required by the Commonwealth of Massachusetts or any of its agencies.
- (g) The WAC acknowledges that the Authority is a state agency for purposes of Chapter 268A of the General Laws (the Massachusetts Conflict of Interest Law) and understands that for the purposes of that law, WAC staff and members are special state employees.
- (h) The WAC shall be responsible for compliance with all applicable provisions and requirements of the Massachusetts Open Meeting Law.

ARTICLE 4. RESPONSIBILITIES OF THE WAC STAFF.

4.1 The WAC staff shall be responsible for the following tasks:

- (a) aiding the WAC in its tasks under Article 6, educating the public, and acting as liaison with the Authority and its staff;
- (b) maintaining financial records, minutes of the WAC meetings, and other WAC records;
- (c) providing to the Authority copies of the notices for and minutes of all meetings of WAC and of all WAC correspondence relative to Authority projects and proposals as soon as such materials are available; and

(d) administering and maintaining compliance by all its members and staff with the provisions of the Massachusetts Conflict of Interest Law including, without limitation, those mandatory provisions relating to: (i) annual distribution to members and staff of the State Ethics Commission's (SEC) Summary of Law and maintenance and archiving of acknowledgements of receipt of the Summary of Law from all members and staff, and (ii) compliance by members and staff with the SEC's bi-annual educational training exercises.

ARTICLE 5. MEMBERSHIP, MEETINGS, TERMS.

5.1 the WAC membership, meetings and terms shall be as follows:

- (a) the WAC will have a maximum of twenty (20) members ("Members") approved by the Board. (Alternates or designees are prohibited);
- (b) the WAC shall meet once per month and maintain records of its meetings;
- (c) to the extent reasonable, Members will meet as a committee of the whole, without resort to subcommittees;
- (d) members will elect their chairman.
- (e) members' terms will be three (3) years; members may succeed themselves.
- (f) members unable to maintain reasonable participation in the committee's work will be expected to resign. The Authority's Public Affairs Unit, in consultation with the WAC chairman, will nominate a replacement for Board approval.

ARTICLE 6. WAC TASKS.

The WAC shall undertake the following tasks:

6.1 Wastewater Policies and Programs Review.

Advise the Authority staff and Board. Participate in review and evaluation of wastewater management plans (e.g., local limits, I/I, CSO), reports and new ideas for programs. Provide comments, information, advice, recommendations and guidance as to the direction, intent and execution of wastewater planning and policy directly related to MWRA.

6.2 Outreach and Education.

Strive to increase citizen participation and education by providing assistance in outreach to various groups regarding the Authority's wastewater programs and state wastewater resource policies. Review programs and explain plans and policies to organizations and citizens.

6.3 Working Group Representation.

When possible, provide a representative on Authority working groups, comprising MWRA staff and consultants, related to wastewater programs and policy, including the Advisory Board and its subcommittees and the Water Supply Citizens Advisory Committee.

6.4 Recommendations on Long Term Public Involvement.

Provide to the Authority staff and Board, proposals for continued effective and efficient long term public involvement in wastewater programs.

6.5 Recommendations and Discussion Documents.

The WAC staff shall be responsible for providing to the Authority's staff, Board, and others, recommendation and discussion documents on wastewater programs and policy. Documents may be in the form of minutes of WAC meetings, memoranda, letters, reports, presentations and discussions as appropriate.

ARTICLE 7. MISCELLANEOUS REQUIREMENTS.

7.1 Nondiscrimination and Equal Employment Opportunity

The WAC agrees to comply with the Authority's policy regarding non-discrimination and affirmative action.

ARTICLE 8. GENERAL PROVISIONS.

8.1 Termination of Contract.

(a) This Agreement may be terminated in writing, at any time, in whole or in part, by the Authority for its convenience or in the event of substantial failure by the WAC to fulfill its obligations, or for violation of any of the covenants and stipulations of this Agreement.

(b) If termination is effected by the Authority an equitable adjustment shall be made providing for payment to the WAC for services rendered and expenses incurred prior to the termination.

(c) No termination hereunder may be effected unless the terminating party gives the other party:

(1) not less than forty-five days' written notice delivered by certified mail, return receipt requested, of intent to terminate; and

(2) an opportunity for consultation with the other party prior to termination, or

(3) by mutual agreement of the parties.

8.2 Assignability.

The WAC shall not assign or transfer this Agreement or delegate its responsibility for the performance of services under this agreement.

8.3 Integration Clause.

This Agreement integrates and supersedes all prior negotiations, representations, or agreements.

8.4 Amendment.

This Agreement may be amended only by a writing executed by each of the parties.

8.5 Severability of Provisions.

If any provision of this Agreement shall, to any extent, be held invalid or unenforceable, the remainder of this Agreement shall not be deemed affected thereby.

8.6 Massachusetts Law to Govern.

All parties to this Agreement agree that this Agreement shall be governed by and enforced in accordance with the laws of the Commonwealth of Massachusetts.

8.7 Duplicate Originals.

This Agreement may be signed in more than one identical counterpart, each of which shall be deemed to be an original hereof.

8.8 Notices.

Communications shall be deemed to have been made when mailed postage prepaid or delivered among:

Executive Director
Wastewater Advisory Committee
c/o MWRA
100 First Avenue
Charlestown Navy Yard
Boston, MA 02129

Executive Director
Massachusetts Water Resources Authority
Charlestown Navy Yard
100 First Avenue
Boston, MA 02129

Director of Public Affairs
Massachusetts Water Resources Authority
Charlestown Navy Yard
100 First Avenue
Boston, MA 02129

IN WITNESS WHEREOF, this Agreement is executed as of this ___th day of
June, 2018.


FOR: WASTEWATER ADVISORY COMMITTEE

By: _____
Craig Allen, Chairman

FOR: MASSACHUSETTS WATER RESOURCES AUTHORITY

By: _____
Frederick A. Laskey, Executive Director

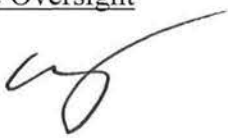
STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: May 30, 2018
SUBJECT: Approval of One New Member of the Wastewater Advisory Committee

COMMITTEE: Wastewater Policy & Oversight

INFORMATION

VOTE

Wendy Leo, Senior Program Manager
Preparer/Title 

Sean Navin
Director, Intergovernmental Affairs 

RECOMMENDATION:

To approve the addition of one new member, Mr. George Atallah, P.E., to the Wastewater Advisory Committee.

DISCUSSION:

In addition to the critical oversight functions of the Advisory Board, many of MWRA's policy decisions are made with advice and support from two standing citizens' advisory committees, the Water Supply Citizens Advisory Committee (WSCAC) and the Wastewater Advisory Committee (WAC).

The Wastewater Advisory Committee was created in 1990 to offer independent recommendations on wastewater programs and policies; it is a successor to the Facilities Planning Citizen Advisory Committee, which was established during the planning of the new Deer Island Treatment Plant. WAC's members include citizen advocates, representatives from the Metropolitan Area Planning Council, watershed associations, the engineering and business communities, environmental law, and the science and education fields. The Advisory Board has historically appointed a member as well.

WAC elects its chairman and employs an Executive Director (selected by WAC's membership with the concurrence and approval of MWRA's Public Affairs Department). WAC's current chairman is Craig Allen and WAC's current Executive Director is Andreae Downs.

The WAC Contract provides that WAC shall have a maximum of twenty members approved by MWRA's Board of Directors; the Contract prohibits alternates or designees.

The proposed new member, Mr. Atallah, is environmental services manager at Triumvirate Environmental in Somerville, MA. He was formerly employed at other industrial waste management/environmental consulting firms in Massachusetts and Pennsylvania. Mr. Atallah's expertise in industrial wastewater treatment and disposal will be helpful to the committee.

The current thirteen members on WAC are: Mary Adelstein, citizen advocate; Craig Allen, Commonwealth Research Group, Inc. (chair); Philip Ashcroft, New England Water Innovation Network; Adriana Cillo, Boston Water and Sewer Commission; Wayne Chouinard, Town of Arlington DPW; Zhanna Davidovitz, Massachusetts Institute of Technology; Karen Golmer, Massachusetts Institute of Technology; Stephen Greene, Howland-Greene Consultants; James Guidod, MWRA Advisory Board; Taber Keally, Neponset River Watershed Association; Karen Lachmayr, Harvard University (vice chair); Martin Pillsbury, Metropolitan Area Planning Council; Dan Winograd, Woodard & Curran.

In accordance with the current Agreement, WAC unanimously nominated Mr. Atallah for membership at its April 2018 meeting.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 30, 2018
SUBJECT: Chelsea Creek Headworks Upgrade
BHD/BEC 2015, A Joint Venture
Contract 7161, Change Order 12



COMMITTEE: Wastewater Policy & Oversight

INFORMATION
 VOTE

A. Navanandan, P.E., Chief Engineer
Corinne M. Barrett, Director, Construction
Martin E. McGowan, Construction Coordinator
Preparer/Title



David W. Coppes, P.E.
Chief Operating Officer

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Change Order 12 to Contract 7161, Chelsea Creek Headworks Upgrade, with BHD/BEC 2015, A Joint Venture, for an amount not to exceed \$1,000,000.00, increasing the contract amount from \$77,653,065.46 to \$78,653,065.46, with no increase in contract term.

Further, to authorize the Executive Director to approve additional change orders as may be needed to Contract 7161 in an amount not to exceed the aggregate of \$250,000, in accordance with the Management Policies and Procedures of the Board of Directors.

DISCUSSION:

The Chelsea Creek Headworks is one of three remote headworks facilities that provides preliminary treatment and flow control of the wastewater from MWRA's Northern Service Area before reaching the Deer Island Treatment Plant. Preliminary treatment at the headworks facilities includes grit and screenings removal, which prevents excessive wear and maintenance of equipment at the North Main Pump Station, and protects the cross harbor tunnels from filling with debris. The Chelsea Creek Headworks was constructed in the 1960s and received its last significant upgrade in 1987.

This project is the first of the complete upgrade to the three headwork facilities and includes automation of the screenings collection and solids conveyance system, allowing the facility to be unstaffed during dry weather flows. The following items are being replaced:

- grit collector systems;
- existing climber screens with catenary screens;
- influent and effluent sluice gates;
- the gates' hydraulic operating system with electric gate actuators;
- HVAC systems will be upgraded;
- a new carbon adsorber odor control system is being installed and redundancy is being added to both systems;
- ancillary systems including the emergency generator, fuel oil tank, and transformer are being replaced;
- instrumentation and control systems are being upgraded;
- the communications tower is being replaced and a communications building is being added;
- abatement of hazardous building materials including paint containing PCBs, flood protection measures to protect the facility to the 100-year flood elevation plus 2.5 feet, and upgrades to meet current code requirements for egress, plumbing, electrical; and
- fire suppression.

This Change Order

Change Order 12 consists of the following item:

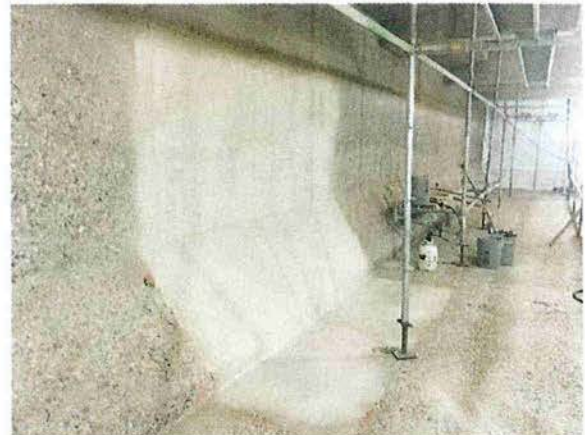
Additional Concrete Repairs and Resurfacing in the Four Process Flow Channels

Not to exceed \$1,000,000

The Contractor is required to prepare and resurface the deteriorated concrete in each of the four process channels and apply a new epoxy lining system to provide long term protection of the concrete surfaces. This epoxy lining system will be applied prior to the installation of the new process equipment, such as sluice gates, catenary bar screens and grit collection equipment. After the first process channel was taken out of service, the Contractor began the preparation of the concrete surfaces and discovered that the actual depth of deteriorated concrete was deeper than anticipated.



Deteriorated concrete in process channel below water line



Mockup of repair mortars to reestablish existing surfaces

The contract documents indicate that the depth of resurfacing would be an average of ¼-inch thick over the entire surface; however, the actual depth of deteriorated material removed was an average of ½-inch to ¾-inch at and below the normal water level of the channel. These areas, to which there was limited access during the design phase, are most affected by the prolonged exposure to corrosion from the wastewater flow. The Contractor must remove the additional deteriorated concrete and reestablish the continuity of the original concrete surface with more resurfacing material.

Following the initial surface preparation, numerous embedded ferrous metal items, such as ladder rungs, pipe connections, rebar, form ties and anchor bolts were found in the concrete throughout the channel. The majority of these items are associated with abandoned equipment from the original construction of the facility. These items were not identified in the contract documents for removal as they were not visible until the first channel was taken out of service. In order to prevent premature failure of the new epoxy lining system, the Contractor must cut back all of these embedments and fill the voids with repair mortar.



Existing anchors embedded in concrete requiring removal



Repair of poor concrete at new catenary screen opening. Note the irregularities in the side wall surfaces

Finally, the existing concrete in the area of the new catenary screen and pneumatic ejection equipment was found to be in poor condition and not uniform. This condition could not be identified until the existing climber screen and pneumatic ejector equipment were demolished. It is critical that the new equipment be mounted square, level and plumb and set on sound concrete. The poor concrete must be chipped back so that the reinforced concrete floor slab can be restored. Additional chipping and saw cutting is required inside the process channel sidewalls and floor for proper setting and alignment of the new catenary screens.

It is anticipated that the condition found in the first process channel will be the same for the other three channels. The Contractor must complete the concrete repairs as described above in all four process channels prior to applying the new epoxy lining system.

These items have been identified by MWRA staff as unforeseen conditions. MWRA staff, the Consultant, and the Contractor have agreed to an amount not to exceed \$1,000,000 for this additional work with no increase in contract term. Staff and the Contractor are currently negotiating the final lump sum cost of these items. The concrete repair and resurfacing work is

currently on-going in the first process channel. The Contractor proceeded with this work at its own risk in order to proceed with the remainder of the contract work.

CONTRACT SUMMARY:

	<u>Amount</u>	<u>Time</u>	<u>Dated</u>
Original Contract:	\$72,859,000.00	1,460 Days	11/22/16
Change Orders:			
Change Order 1	\$252,512.00	0 Days	06/29/17
Change Order 2*	\$208,431.00	0 Days	07/24/17
Change Order 3	\$1,129,740.20	0 Days	07/24/17
Change Order 4*	\$237,870.00	0 Days	10/18/17
Change Order 5	\$304,036.26	0 Days	12/21/17
Change Order 6*	\$207,226.00	0 Days	01/26/18
Change Order 7	\$1,278,783.00	0 Days	02/07/18
Change Order 8	\$937,267.00	0 Days	02/22/18
Change Order 9	\$17,321.00	0 Days	04/03/18
Change Order 10*	\$20,879.00	0 Days	04/11/18
Change Order 11*	\$200,000.00	0 Days	05/18/18
Change Order 12	<u>\$1,000,000.00</u>	<u>0 Days</u>	Pending
Total of Change Orders:	\$5,794,065.46	0 Days	
Adjusted Contract:	\$78,653,065.46	1,460 Days	

*Approved under delegated authority

If Change Order 12 is approved, the cumulative value of all change orders to this contract will be \$5,794,065.46 or 8% of the original contract amount. Work on this contract is approximately 33% complete.

BUDGET/FISCAL IMPACT:

The FY18 Capital Improvement Program budget includes \$76,059,000 for Contract 7161. Including this change order for \$1,000,000.00, the adjusted subphase total is \$78,653,065.46 or \$2,594,065.46 over budget. The draft Final FY19 budget includes \$80,519,865 for this contract.

MBE/WBE PARTICIPATION:

The MBE/WBE participation requirements for this project were established at 3.4% and 3.8%, respectively. The Contractor has been notified that these requirements are still expected to be met.



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

WATER POLICY AND OVERSIGHT COMMITTEE MEETING

to be held on

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

Wednesday, May 30, 2018

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

Time: Immediately following Wastewater Committee

AGENDA

A. Information

1. 2017 Annual Water Quality Report (Consumer Confidence Report)

B. Approvals

1. Water Supply Citizen's Advisory Committee Contract

C. Contract Awards

1. Supply and Delivery of Sodium Hypochlorite for the John J. Carroll Water Treatment Plant and the William A. Brutsch Treatment Facility, Univar USA, Inc., Bid WRA-4523
2. Technical Assistance Consulting Services for John J. Carroll WTP, Hazen and Sawyer P.C., Contract 7543, and Stantec Consulting Services, Inc., Contract 7544
3. Low Service Pressure Reducing Valve Improvements – Boston/Medford, D/ESDC, CDM Smith, Inc., Contract 7575
4. Southern Extra High Pipeline – Section 111 (Dedham South), RJV Construction Corp., Contract 7505

D. Contract Amendments/Change Orders

1. Section 14 Water Pipeline Relocation, Malden: Albanese Brothers, Inc., Contract 6957, Change Order 5
2. Wachusett Aqueduct Pumping Station, BHD/BEC 2015, A Joint Venture, Contract 7157, Change Order 32

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Water Policy and Oversight Committee

April 18, 2018

A meeting of the Water Policy and Oversight Committee was held on April 18 at the Authority headquarters in Charlestown. Chair Blackmon/Vice-Chair Peña presided. Present from the Board were Messrs. Carroll, Flanagan, Pappastergion, Vitale, Walsh and Ms. Wolowicz. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Cori Barrett, David Coppes, John Gregoire, Paul Whelan and Kristin MacDougall. The meeting was called to order at 11:43 a.m.

Information

Update on Fire at DCR-Quabbin Watershed Facility


Staff made a presentation about an April 6, 2018 fire at a Department of Conservation and Recreation Quabbin field office in New Salem, Massachusetts and related response and recovery efforts (ref. item A.1.) (Mr. Pappastergion left the meeting temporarily and returned during the presentation)

Update on Wachusett Aqueduct Pumping Station Construction Progress, Contract 7157

Staff made a presentation with an update on the progress of a project to construct an emergency pumping station to pump water from the Wachusett Aqueduct to the Carroll Water Treatment Plant. This project is part of MWRA's ongoing water system redundancy efforts.

The meeting adjourned at 12:03 p.m.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: May 30, 2018
SUBJECT: 2017 Annual Water Quality Report (Consumer Confidence Report)

COMMITTEE: Water Policy & Oversight

INFORMATION
 VOTE

Joshua Das, Project Manager, Public Health
Ria Convery, Special Asst. to Executive Director
Stephen Estes-Smargiassi, Director, Planning & Sustainability
Preparer/Title


David W. Coppes, P.E.
Chief Operating Officer

RECOMMENDATION:

For information only. The 2017 Annual Water Quality Report will be mailed to every household in MWRA's service area between May 30 and June 27, 2018 to meet EPA's Consumer Confidence Report Rule annual deadline of July 1. This staff summary highlights the report's key findings and features. Copies will be available at the Board meeting.

DISCUSSION:

EPA's Consumer Confidence Report (CCR) program has been an important national initiative that has promoted better information and education for consumers about their publicly supplied drinking water. The CCR has been an integral part of MWRA's drinking water communication program since 1999, along with monthly printed and on-line water quality reports. Also, this year MWRA supplied a wastewater "CCR" to all wastewater customers. Therefore, customers will have received important information on both their drinking water and wastewater.

MWRA staff have again produced three separate versions of the CCR: one for each of the fully-supplied communities in metropolitan Boston and MetroWest, one for each of the partially-supplied communities in metropolitan Boston and MetroWest, and one for the three Chicopee Valley Aqueduct communities. A Spanish translation and a large print version are also produced. All communities in metropolitan Boston and MetroWest that use MWRA's CCR again took the opportunity to provide a community-specific letter to report additional local information. This year for the first time, Peabody used the MWRA report.¹

¹ The partially-supplied communities of Dedham, Stoughton, Wellesley, and Westwood send their own CCR geared toward local source water quality, with additional information on MWRA water provided in their reports by MWRA staff. All other partially-supplied communities use the MWRA report.

As in prior years, the 2017 CCR emphasizes MWRA's excellent source water, state of the art treatment, and all of the test results from the reservoir to the tap. This year's theme is investments in the water system. Both the Executive Director's letter and one page of the report describe past and future infrastructure improvements in the water system including the Wachusett Aqueduct Pump Station project and improvements to water system redundancy. There are, once again, two pages concentrating on lead in drinking water. These pages highlight lead service line information, how to find out if you have a lead service line, and how to get it replaced. These pages also emphasize how to get your water tested for lead, steps customers can take to make sure there is no lead in their tap water, and a brief summary of the school lead testing program and where to find more information.

The report is printed on paper which is recycled and certified by the Forest Stewardship Council and Sustainable Forestry Initiative, with appropriate logos included on the cover.

Consistent with past efforts, MWRA will conduct an outreach effort to increase awareness of the CCR, including e-mailing copies to local officials, health care professionals, and other interested parties, and sending press releases to more than 50 weekly publications and all regional newspapers. It will also be promoted through social media. Information and pictures of the CCR, with links to MWRA's website, will be provided to community web pages, and local public health and environmental organizations.

Mailing of the CCR will begin on May 30, 2018 and the reports should be arriving in customers' mailboxes through the last week of June. Certification of the CCR to DEP is due by July 1, 2018. MWRA provides certification materials to DEP on behalf of each community.

MWRA is using the flexibility offered by EPA under its eCCR guidance to include web links to additional, more comprehensive information on unregulated contaminants. Also, one partial community included a web-link in its printed letter to a longer on-line letter with additional information about local issues

BUDGET/FISCAL IMPACT:

The FY18 Current Expense Budget includes sufficient funds for the estimated \$100,000 for printing and mailhouse services, and the estimated \$145,000 for postage. Production and graphic design are performed in-house by MWRA staff. The cost of printing and mailing almost 900,000 copies of the 2017 CCR is approximately \$0.27 per copy.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 30, 2018
SUBJECT: Water Supply Citizens Advisory Committee Contract



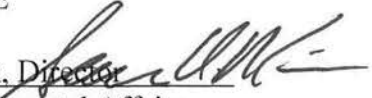
COMMITTEE: Water Policy & Oversight

INFORMATION
 VOTE



Stephen Estes-Smargiassi, Director, Planning and Sustainability
Preparer/Title

Sean Navin, Director
Intergovernmental Affairs



RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to execute a contract, substantially in the form attached hereto, with the Water Supply Citizens Advisory Committee for a one-year period beginning July 1, 2018 to June 30, 2019, with a total contract cost of \$107,299.76.

DISCUSSION:

In addition to the critical oversight functions of the Advisory Board, many of MWRA's policy decisions are made with advice and support from two standing citizens' advisory committees, the Water Supply Citizens Advisory Committee (WSCAC) and the Wastewater Advisory Committee (WAC). A separate staff summary presented at this meeting recommends authorization for the Executive Director to execute a similar contract with WAC for FY19.

WSCAC originated in 1978 when its predecessor committee, the Northfield Citizens Advisory Committee, was formed at the direction of the Secretary of the Executive Office of Environmental Affairs. WSCAC has received direct funding from MWRA since MWRA's formation in 1984.

The proposed FY19 WSCAC contract is 2.8% greater than the FY18 contract. Hourly salaries increased 3% and health insurance increased 3%. All other areas of the budget were level funded. Health insurance is budgeted at 80% reimbursement for the Executive Director only, not to exceed \$9,838, with an optional health insurance buy-out program similar to that offered to MWRA employees who do not use MWRA's health insurance benefit.

Current topics of interest to WSCAC include system redundancy, energy efficiency and carbon footprint, water system expansion issues, changing drinking water regulations, the Water System Master Plan, and watershed management and protection issues. The committee currently has 15 members, all of whom are considered active. WSCAC continues to work to identify additional members in categories which are not well represented on the committee.

WSCAC's office is located at Quabbin Reservoir in a Department of Conservation and Recreation building, and most meetings are held at MWRA's Southborough facility. WSCAC's Executive Director is Lexi Dewey (selected by WSCAC's Executive Committee), and the current chairman is, Michael Baron, elected from among the members.

A separate staff summary is being presented at this meeting recommending authorization for the Executive Director to execute a similar contact with the Wastewater Advisory Committee for FY19.

BUDGET/FISCAL IMPACT:

Sufficient funds for the WSCAC contract is included in the Draft Final FY19 Current Expense Budget.

ATTACHMENT:

Copy of Agreement between Massachusetts Water Resources Authority and Water Supply Citizens Advisory Committee

AGREEMENT
BETWEEN
MASSACHUSETTS WATER RESOURCES AUTHORITY
AND
WATER SUPPLY CITIZENS ADVISORY COMMITTEE

This Agreement ("Agreement") is by and between the Massachusetts Water Resources Authority ("Authority"), a body politic and corporate and a public instrumentality of the commonwealth created by Chapter 372 of the Acts of 1984 with offices at Building 39 First Avenue, Charlestown Navy Yard, Charlestown, Massachusetts 02129 and the Water Supply Citizens Advisory Committee ("WSCAC") an organization initially created under the Massachusetts Environmental Policy Act ("MEPA") to ensure public representation and participation in Authority water supply activities, with offices currently at 485 Ware Road, Belchertown, MA 01007 (collectively "Parties").

WHEREAS, the Authority is required to meet the water needs of its communities;

WHEREAS, the Authority desires WSCAC to continue to advise in water supply planning and programming; and

WHEREAS, WSCAC desires to have a continued role advising the Authority.

NOW, THEREFORE, for the consideration of mutual promises contained herein, the Authority and WSCAC agree as follows:

Article 1. Effective Date.

This Agreement shall be effective from July 1, 2018 through June 30, 2019, inclusive.

Article 2. Compensation, Budget, Payment, and Expenses.

2.1 The Authority shall make funds available as follows:

(a) Salaries and Duties.

Director. An Executive Director shall be chosen by WSCAC members at a salary not to exceed \$70,571.76 for the year commencing on July 1, 2018 through June 30, 2019, inclusive. The hourly salary rate (inclusive of payroll taxes) shall be \$42.36 with annual total hours of 1,666 (average 34 hours per week for 49 weeks). The duties of the Executive Director shall be in accordance with the job description prepared by the Executive Committee of WSCAC and on file with the Authority.

Administrative Assistant. A part-time Administrative Assistant shall be chosen by the WSCAC Executive Director in consultation with the Executive Committee of WSCAC at a salary not to exceed \$14,806.00 for the year commencing on July 1, 2018 through June 30, 2019, inclusive. The hourly salary rate shall be \$22.03 (inclusive of payroll taxes) with annual total hours of 672 (average 14 hours per week for 48 weeks). The duties of the Administrative Assistant shall be in accordance with the job description prepared by the Executive Committee of WSCAC and on file with the Authority.

(b) Reimbursable Expenses.

- (1) The Authority shall reimburse the WSCAC for 80% of the non-employer-sponsored health insurance for the WSCAC Executive Director (not to exceed \$9,838). The percentage rate for reimbursement of health insurance costs shall be changed to that of Authority staff if the Group Insurance Commission changes the rate.
- (2) Health insurance buy-out: The WSCAC Executive Director may elect a monetary allowance in lieu of reimbursement of health insurance costs, provided he or she has health insurance coverage through another employer-sponsored plan that meets Internal Revenue Service "minimum value" criteria, throughout that six-month period. The amount of the allowance will be \$1000 to waive family coverage or \$700 for waiving individual coverage. The WSCAC Executive Director is responsible for any withholding taxes on these payments with WSCAC being responsible for the employer share of payroll taxes.
- (3) Mileage costs, public transportation costs, highway tolls and parking expenses incurred by WSCAC staff and members from attendance at WSCAC meetings, pertinent conferences and seminars, or while performing other functions directly related to its scope of services. Mileage costs will be reimbursed at the prevailing Authority rate per mile.
- (4) Office supplies (such as letterhead, envelopes, pencils, paper clips), postage, office telephone and internet access, meeting expenses, and general administrative and office expenses;
- (5) The purchase or rental by WSCAC staff of books, films, cassettes, tapes, etc., if specifically approved by the Authority in advance, except that single copies of individual publications, books, and other written documents may be purchased for the WSCAC library use without prior approval, provided that the cost per item does not exceed \$200. All materials purchased under this section shall be considered property of the Authority.
- (6) Other miscellaneous expenses of the WSCAC staff approved by the Authority on a case-by-case basis. When possible, approval of the Authority should be received in advance of incurring such expenditures.

The Authority may advance up to \$750 to WSCAC, such advance to be applied to the payment of Reimbursable Expenses as defined herein and as approved and budgeted under the terms of this Agreement. Payments made from an advance shall be accounted for in the same manner as all other Expense payments. Prior to the expiration of this Agreement, any outstanding balance on an advance shall be applied against amounts due WSCAC.

The annual total reimbursement to WSCAC for annual and miscellaneous expenses combined shall not exceed \$21,922.00 from July 1, 2018 through June 30, 2019, inclusive.

(c) Non-reimbursable expenses.

The following expenses are not reimbursable: meals, entertainment, room and board expenses, fines, fees, or costs assessed as a result of improper or illegal actions on the part of the member, such as parking tickets or speeding fines.

ARTICLE 3. RESPONSIBILITIES OF THE AUTHORITY AND WSCAC.

(a) WSCAC shall employ an Executive Director, who is prohibited from being a member of WSCAC while serving his or her term as a paid employee.

(b) WSCAC shall, whenever applicable, take all necessary steps to receive an exemption from the Massachusetts Sales and Use taxes for materials, printing, and equipment purchased by WSCAC on behalf of the Authority.

(c) WSCAC shall submit monthly or periodic statements to the Authority requesting payment for salary, and for annual and miscellaneous expenses listed in Article 2. Such requests shall be supplemented or accompanied by time sheets, travel and expense vouchers, and by such other supporting data as may be required by the Authority.

(d) WSCAC shall maintain accounts, records, documents, and other evidence directly pertinent to performance of work under this Agreement. The Parties and their duly authorized representatives shall have access to such records, documents, and other evidence for the purpose of inspection, audit, and copying.

(e) The Authority or its duly authorized agent shall have the right at any and all reasonable times, to examine and audit WSCAC's records, documents and other evidence.

(f) This Agreement is subject to the laws dealing with the expenditures of public funds, including Chapter 12A of the Massachusetts General Laws.

(g) The Parties agree to consent to any reasonable modifications or changes in this contract that may be required by the Commonwealth of Massachusetts or any of its agencies.

(h) WSCAC acknowledges that the Authority is a state agency for purpose of Chapter 268A of the General Laws (the Massachusetts Conflict of Interest Law) and understands that for the purposes of that law, WSCAC staff and members are special state employees.

- (i) WSCAC shall be responsible for compliance with all applicable provisions and requirements of the Massachusetts Open Meeting Law.

ARTICLE 4. RESPONSIBILITIES OF THE WSCAC STAFF.

4.1 The WSCAC staff shall be responsible for the following tasks:

- (a) aiding WSCAC in its tasks under Article 6, managing the WSCAC office, educating the public, and acting as liaison with the Authority and its staff;
- (b) preparing monthly progress reports for submission to the WSCAC Executive Committee, the WSCAC members, and the Authority;
- (c) maintaining financial records, minutes of the WSCAC meetings, and other WSCAC records;
- (d) assuring that at least every other meeting be held in Eastern Massachusetts at a location to be jointly agreed upon by WSCAC and the Authority where Authority attendance is expected;
- (e) providing to the Authority copies of the notices for and minutes of all meetings of WSCAC and of all the WSCAC correspondence as soon as such materials are available; and
- (f) administering and maintaining compliance by all its members and staff with the provisions of the Massachusetts Conflict of Interest Law including, without limitation, those mandatory provisions relating to: (i) annual distribution to members and staff of the State Ethics Commission's (SEC) Summary of Law and maintenance and archiving of acknowledgements of receipt of the Summary of Law from all members and staff, and (ii) compliance by members and staff with the SEC's bi-annual educational training exercises.

ARTICLE 5. MEMBERSHIP

5.1 Membership of WSCAC

- (a) Membership of WSCAC shall maintain parity between those individuals representing the interests of the communities listed in section 8(d) of the Authority's Enabling Act, c. 372 of the Acts of 1984, ("User Representatives") and those individuals representing the interests of the watershed communities ("Donor Representatives") and those individuals representing the interests of statewide or other appropriate interests as mutually agreed upon by WSCAC and the MWRA ("Other Representatives").
- (b) In order to maintain WSCAC membership status, members must be active participants, as defined in the WSCAC by-laws.

5.2 The appointment of WSCAC members shall be by joint designation by WSCAC and the MWRA and shall have a goal of achieving at least 10% minority representation on WSCAC.

ARTICLE 6. WSCAC TASKS.

WSCAC shall undertake the following tasks:

6.1 Water Supply Programs Review.

Advise the Authority staff and Board in the performance of their duties relating to water supply planning and policies. Participate in the design, review and evaluation of research, reports and new ideas for programs. Provide comments, information, advice, recommendations and guidance as to the direction, intent and execution of water planning and policy development.

6.2 Outreach and Education.

Assure informed public input by providing assistance in outreach to various groups regarding the Authority's water supply programs and policies, and state water resources legislation and policies. Review programs with and explain plans and policies to organizations and citizens, including the scheduling of workshops, meetings and conferences. Provide comments and assistance on legislation of importance to the Authority.

6.3 Working Group Representation.

When requested, provide a representative on Authority working groups, comprising Authority staff and consultants, related to water supply planning and policy development, including the Advisory Board and its subcommittees and the Wastewater Advisory Committee.

6.4 Recommendations on Long Term Public Involvement.

Provide to the Authority staff and Board, proposals for continued effective and efficient long-term public involvement in water programs.

6.5 Recommendations and Discussion Documents.

The WSCAC staff shall be responsible for providing to the Authority's staff, Board, and others, recommendation and discussion documents on the subjects of the above tasks. Documents may be in the form of minutes of WSCAC meetings, memoranda, letters, reports, presentations and discussions as appropriate.

ARTICLE 7. MISCELLANEOUS REQUIREMENTS.

7.1 Nondiscrimination and Equal Employment Opportunity.

(a) WSCAC agrees to comply with all Federal and State laws pertaining to Civil Rights and Equal Opportunity, including executive orders and rules and regulations regarding employment,

demotion, transfers, recruitment, layoffs or termination, rates of pay or other compensation and training, including apprenticeships. With regard to WSCAC membership, WSCAC agrees to affirmatively solicit minority representation.

(b) WSCAC agrees to comply with the Authority's policy regarding non-discrimination and affirmative action.

ARTICLE 8. GENERAL PROVISIONS.

8.1 Termination of Contract.

(a) This Agreement may be terminated in writing, at any time, in whole or in part, by the Authority for its convenience or in the event of substantial failure by WSCAC to fulfill their obligations, or for violation of any of the covenants and stipulations of this Agreement.

(b) If termination is effected by the Authority an equitable adjustment shall be made providing for payment to WSCAC for services rendered and expenses incurred prior to the termination. In addition, termination settlement costs reasonably incurred by WSCAC relating to commitments, which had become firm prior to the termination, shall be paid.

(c) This agreement may be terminated at any time, in whole or in part, in writing by WSCAC in the event of substantial failure by the Authority to fulfill its obligations or for violation by the Authority to fulfill its obligations or for violation by the Authority of any of the covenants and stipulations of this agreement.

(d) No termination hereunder may be effected unless the terminating party gives the other party: (1) not less than forty-five days' written notice delivered by certified mail, return receipt requested of intent to terminate; and (2) an opportunity for consultation with the other party prior to termination, or (3) by mutual agreement of the parties.

8.2 Ownership of Property.

Upon termination of this Agreement for any reason, WSCAC shall turn over to the Authority all materials, equipment, including computer equipment currently on loan from the Authority and owned by the Authority, unused office supplies, books, pamphlets, publications and all other properties for which Authority or MDC reimbursements were made in whole or in part, directly or indirectly.

8.3 Assignability.

WSCAC shall not assign or transfer this Agreement or delegate its responsibility for the performance of services under this contract.

8.4 Integration Clause.

This Agreement may be amended only by a writing executed by each of the Parties.

8.5 Severability of Provisions.

If any provision of this Agreement shall, to any extent, be held invalid or unenforceable, the remainder of this Agreement shall not be deemed affected thereby.

8.6 Massachusetts Law to Govern.

All parties to this Agreement agree that this Agreement shall be governed by and enforced in accordance with the laws of the Commonwealth of Massachusetts.

8.7 Duplicate Originals.

This Agreement may be signed in more than one identical counterpart, each of which shall be deemed to be an original hereof.

8.8 Notices.

Communications shall be deemed to have been made when mailed postage prepaid or delivered to among:

Chair and
Executive Director
Water Supply Citizens Advisory Committee
485 Ware Road
Belchertown, MA 01007

Director of Public Affairs
Massachusetts Water Resources Authority
Charlestown Navy Yard
Building 39, First Avenue
Boston, Massachusetts 02129

Executive Director
Massachusetts Water Resources Authority
Charlestown Navy Yard
Building 39, First Avenue
Boston, Massachusetts 02129

IN WITNESS WHEREOF, this Agreement is executed as of this day of , 2018.

FOR: WATER SUPPLY CITIZENS ADVISORY COMMITTEE

By: _____
Title: Chair, Water Supply Citizens
Advisory Committee


Dated:

FOR: MASSACHUSETTS WATER RESOURCES AUTHORITY

By: _____
Title: Executive Director

Dated:

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: May 30, 2018
SUBJECT: Supply and Delivery of Sodium Hypochlorite for the John J. Carroll Water Treatment Plant and the William A. Brutsch Treatment Facility
Univar USA, Inc.
Bid WRA-4523

COMMITTEE: Water Policy & Oversight

Guy M. Foss, Director, Western Operations
Carolyn Francisco Murphy, Director, Procurement
Preparer/Title

 INFORMATION

 X VOTE


Michele S. Gillen

Director of Administration


David W. Coppes, P.E.

Chief Operating Officer

RECOMMENDATION:

To approve the award of Purchase Order Contract WRA-4523, a one-year contract for the supply and delivery of sodium hypochlorite to the lowest responsive bidder, Univar USA, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said purchase order contract in an amount not-to-exceed \$1,612,080.00 for a period of one year, from July 17, 2018 through July 16, 2019.

DISCUSSION:

MWRA uses sodium hypochlorite at 15% solution at the Carroll Plant in combination with aqua ammonia, to form monochloramines for secondary disinfection. Monochloramines provide a stable and persistent disinfectant residual throughout MWRA's entire water distribution system. Staff estimate that approximately 1,968,000 gallons will be required during this one-year contract period.

MWRA also uses sodium hypochlorite for primary disinfection at the William A. Brutsch Water Treatment Facility. At Brutsch, MWRA uses sodium hypochlorite at 11% solution because it is less prone to degradation over long periods of storage. The product of degradation is gas bubbles which can block the supply of chemical by the positive displacement pumps, which in turn reduces process reliability. Since this facility is unstaffed for 16 hours each day, the lower concentration hypochlorite is used to reduce the risk of an interruption in water treatment while unstaffed. Based upon reasonable assumptions and historic usage, staff estimate that Brutsch will use approximately 48,000 gallons of sodium hypochlorite during the one-year contract term. The anticipated usage is an estimate only. MWRA will only pay for chemical that is received.

Procurement Process

Bid WRA-4523 was advertised in the following publications: Boston Herald, Goods and Services Bulletin, El Mundo, and Banner Publications. In addition, bids were made available for public downloading on MWRA's e-procurement system (Event 3396) and four vendors were solicited through the e-Portal.

On April 24, 2018, Event 3396 closed with the following results:

Bidder	Facility	Estimated Gallons	Percent Solution	Unit Price Per Gallon	Extended Bid Price
Univar USA, Inc.	Brutsch Facility	48,000	11% Solution	\$1.482	\$71,136.00
	Carroll Plant	1,968,000	15% Solution	\$0.783	\$1,540,944.00
				Total Bid	\$1,612,080.00
H. Krevit Co., Inc.	Brutsch Facility	48,000	11% Solution	\$1.57	\$75,360.00
	Carroll Plant	1,968,000	15% Solution	\$0.82450	\$1,622,616.00
				Total Bid	\$1,697,976.00
Borden & Remington Corporation	Brutsch Facility	48,000	11% Solution	NO BID	NO BID
	Carroll Plant	1,968,000	15% Solution	\$0.87000	\$1,712,160.00
				Total Bid	\$1,712,160.00

Under the current contracts, which will expire on July 16, 2018, MWRA is paying a fixed price of \$0.588 per gallon with Univar USA, Inc. for the Carroll Plant and \$1.51 with H. Krevit Company, Inc. for the Brutsch Facility. The new bid prices represent a \$0.195-per-gallon increase at Carroll Plant and a \$0.028-per-gallon decrease at Brutsch.

Sodium hypochlorite is manufactured from two different products in approximately equal parts, chlorine and caustic soda. The caustic soda market has historically been very volatile. During the past year, the global market demand for caustic soda has dramatically increased. According to Univar and market publications, the past year's increases are a direct result of several factors. Globally, the largest end user of caustic soda is the alumina industry. In 2017, the Asian alumina industry grew, driving up the global demand of caustic soda. Domestically, the largest producers of caustic soda in the United States are located in the Gulf Coast. As the global demand of caustic soda has increased, domestic producers have increased exports, driving up prices. This upward

trend was accelerated after Hurricane Harvey hit the Gulf Coast in August 2017 and temporary stalled production.

Staff have reviewed Univar USA, Inc.'s bid and have determined that it meets all of the requirements of the bid specifications. Univar's performance on prior contracts has been good, with one exception. In 2016, an error in delivery of chemical by Univar to the Clinton Plant caused MWRA direct damages of \$61,937.45, which Univar paid MWRA in full. There remains pending with DEP a potential penalty arising out of the incident, for which staff would seek contribution from Univar. Given Univar's overall performance on Authority contracts, and satisfaction of the Authority's direct damages on the Clinton Plant claim, staff recommend the award of this purchase order to Univar USA, Inc., as the lowest responsive bidder.

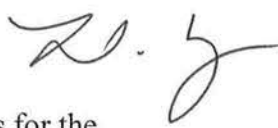
BUDGET/FISCAL IMPACT:

There are sufficient funds available for the contract in the FY18 Current Expense Budget. Appropriate funding will be included in subsequent Proposed CEB Requests for the remaining term of the contract.

MBE/WBE PARTICIPATION:

Univar USA, Inc. is not a certified Minority- or Women-owned business.

STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: May 30, 2018
SUBJECT: Technical Assistance Consulting Services for the
John J. Carroll Water Treatment Plant
Hazen and Sawyer P.C., Contract 7543
Stantec Consulting Services Inc., Contract 7544


COMMITTEE: Water Policy & Oversight

John P. Vetere, Deputy Chief Operating Officer
A. Navanandan, P.E., Chief Engineer
William G. Sullivan, P.E., Sr. Program Manager
Preparer/Title

 INFORMATION

 X VOTE


Michele S. Gillen
Director of Administration


David W. Coppes, P.E.
Chief Operating Officer

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to award two separate contracts to provide Technical Assistance Consulting Services for the John J. Carroll Water Treatment Plant, and to authorize the Executive Director, on behalf of the Authority, to execute Contract 7543 with Hazen and Sawyer and Contract 7544 with Stantec Consulting Services, Inc. each in an amount not to exceed \$1,000,000, with a contract term of twenty-four months from the Notice to Proceed.

DISCUSSION:

The purpose of these technical assistance contracts is to make available, on a continuing, as-needed basis, the services of qualified, professional engineering firms to assist MWRA staff with engineering and/or design initiatives primarily for the John J. Carroll Water Treatment Plant. These contracts include several engineering disciplines such as civil, structural, environmental and sanitary, mechanical and process engineering, and related disciplines including architecture, geotechnical, surveying, fire protection, electrical, control systems, chemical, permitting, resident inspection and security. These technical assistance contracts are used to supplement in-house staff on high-priority/unanticipated projects, or projects which are not large enough to warrant engineering consultants' efforts to develop qualifications and cost proposals. These contracts also provide expertise on short-term assignments requiring specialized disciplines that are not cost effective for MWRA to maintain with in-house staff resources. The contracts are written to ensure that adequate resources are available to quickly and comprehensively respond to MWRA's needs, particularly when emergency or unanticipated situations arise.

Staff require sign-off from the Chief Engineer for all task orders up to and including \$25,000; from the Deputy Chief Operating Officer for task orders greater than \$25,000 and up to and including \$50,000; and from the Chief Operating Officer on any task order greater than \$50,000 and up to and including \$100,000. In the event that a Task Order greater than \$100,000 is needed, the Chief Operating Officer will confer with the Executive Director prior to approval.

Under previous technical assistance contracts at the plant, MWRA has issued task orders for a wide variety of work including design of:

- Modifications to the ammonia and sodium hypochlorite chemical feed system;
- Valves to allow a more rapid reactivation of the Wachusett Aqueduct;
- A second oxygen pipe to supply the ozone generators;
- A closed-loop cooling system for the ozone generators;
- Replacement of a flow control valve for the Weston Aqueduct;
- Replacement of the traveling screens in the Winsor Dam Intake;
- Upgrade of the Carroll Plant fire alarm system; and
- A canopy over the liquid oxygen fill station.



Carroll Treatment Plant ammonia system piping improvements



Second oxygen feed pipe to the ozone generators for redundancy



Heat exchangers for ozone generators closed-loop cooling system

Potential future technical assistance projects include the design of the following Asset Protection projects:

- Replacement of existing control room sprinkler fire suppression system with a clean agent type;
- Liquid oxygen yard piping and equipment redundancy improvements;
- Ware River valve replacement;
- Upgrades to the Post Treatment Building's soda ash system controls; and
- Southborough electrical switchgear upgrade.

Procurement Process

On February 17, 2018, MWRA issued a one-step Request for Qualifications Statements/Proposals (RFQ/P) that was publicly advertised in the Central Register, Boston Herald, Banner Publication and El Mundo. In addition, notice of the RFQ/P was sent directly to 31 firms. On March 23, 2018, the Authority received proposals from the following two firms: Hazen and Sawyer, P.C. and Stantec Consulting Services Inc. The RFQ/P included the following evaluation criteria and points: Cost - 25 points; Qualifications/Key Personnel - 25 points; Experience/Past Performance - 25 points; Capacity, Organization, Management and Technical Approach - 22 points; and MBE/WBE Participation - 3 points.

Twelve firms requested the RFQ/P, but only two submitted a proposal. Staff called the other firms to determine their reasons for not responding. Responses include: other MWRA projects the firm is more interested in; does not have all the resources in-house and had difficulty putting a team together; could not meet the required qualifications; does more pipeline work; and is a subcontractor to one of the proposers. Others did not respond to phone messages.

Since the exact scope and estimated labor hours that will ultimately be required under the contract is unknown, staff developed a sample cost exercise designed to compare the costs of the proposers. MWRA provided an approximate total number of hours that may be expended based on the average annual distribution of hours from prior technical assistance contracts, and required the proposers to provide average chargeable hourly rates per labor category, including multipliers incorporating indirect costs and profit. Proposers' submitted rates were inserted into the formula and the results are as follows:

PROPOSER	SAMPLE COST EXERCISE ESTIMATE
Hazen and Sawyer, P.C.	\$1,181,891.23
Stantec Consulting Services Inc.	\$1,149,639.57

The five voting members on the Selection Committee reviewed, scored and ranked the proposals as follows:

PROPOSER	TOTAL POINTS	ORDER OF PREFERENCE* TOTAL SCORE	FINAL RANKING
Hazen and Sawyer, P.C.	398	5	1
Stantec Consulting Services Inc.	365	10	2

*Order of Preference represents the sum of individual Selection Committee members' rankings where the firm receiving the highest number of points is assigned a "1", the firm receiving the next highest number of points is assigned a "2", and so on.

Hazen and Sawyer was ranked first by all Selection Committee members. The Selection Committee was in agreement that the personnel listed for Hazen and Sawyer are highly qualified for this type of work. Hazen and Sawyer also demonstrated a wide variety of experience including extensive experience with water treatment plants. Hazen and Sawyer is the consultant for one of the current Agency-Wide Technical Assistance contracts that was awarded in April. Authority

staff reported that Hazen and Sawyer's performance on the existing and past Technical Assistance contracts has been very good to excellent.

Stantec was ranked second by all Selection Committee members. The Selection Committee was in agreement that Stantec's proposed personnel are well qualified for this type of work. Stantec also demonstrated a wide variety of experience including good experience with water treatment plants. Stantec received below average to good references on some recent internal technical assistance contracts. However, Stantec (and previously as Fay, Spofford & Thorndike) received very good internal references for its work under previous Technical Assistance contracts at the Carroll Treatment Plant dating back to December 2005. As the incumbent Carroll Plant Technical Assistance consultant, Stantec is very familiar with the plant and its team members for this contract are the same as for previous contracts.

Based on the qualifications of the firms and the sample cost exercises submitted, the Selection Committee recommends the award of Contract 7543 to Hazen and Sawyer, P.C. and Contract 7544 to Stantec Consulting Services, Inc., each for a not-to-exceed amount of \$1,000,000 and a contract term of two years from the Notice to Proceed. To ensure adequate resources and responsiveness, MWRA awards similar technical assistance contracts for the Deer Island Plant and agency wide.

BUDGET/FISCAL IMPACT:

The FY18 Capital Improvement Program contains \$750,000 each for Contracts 7543 and 7544. The Proposed FY19 CIP was updated to include \$1,000,000 each for these contracts.

MBE/WBE PARTICIPATION:

Due to the specialized and uncertain nature of this work, no minimum MBE or WBE participation were established for these contracts. However, Hazen and Sawyer's proposal identified its commitment to 4.5% WBE participation.

Although not committing to a specific percentage of MBE/WBE participation, Stantec's proposal included its intent to utilize the MBE firm of Bryant Associates and WBE firms of Soil Exploration Corporation and AMRO Environmental Lab if the services of those firms are required.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 30, 2018
SUBJECT: Low Service Pressure Reducing Valve Improvements – Boston/Medford
Design and Engineering Services During Construction
CDM Smith, Inc.
Contract 7575



COMMITTEE: Water Policy & Oversight

 INFORMATION

 X VOTE


Michele S. Gillen

Director of Administration

John P. Vetere, Deputy Chief Operating Officer

A. Navanandan, P.E., Chief Engineer

Renie A. Jesanis, E.I.T., Project Manager

Preparer/Title

David W. Coppes, P.E.

Chief Operating Officer

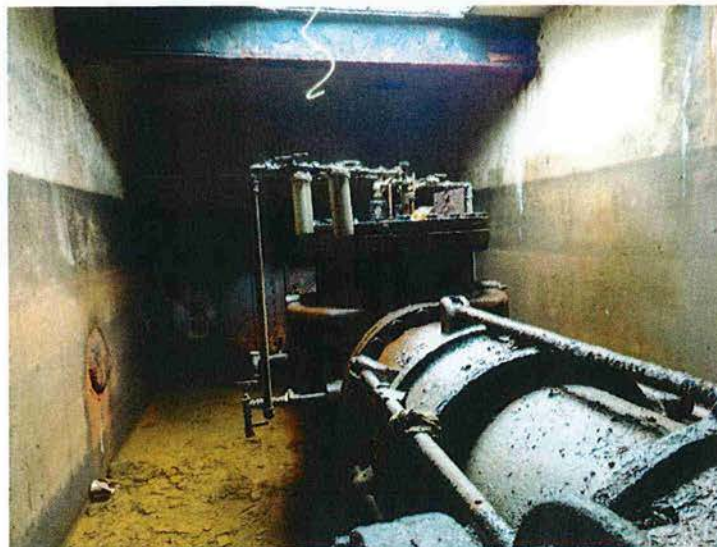


RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to award Contract 7575, Low Service Pressure Reducing Valve Improvements - Boston/Medford, Design and Engineering Services During Construction, to CDM Smith, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in an amount not to exceed \$2,849,332 for a contract term of 57 months from the Notice to Proceed.

BACKGROUND:

Contract 7575 will provide Design and Engineering Services During Construction for the replacement of pressure reducing valves to increase the flow of water to MWRA's Northern Low Service area. The Project was developed as an interim improvement to enhance MWRA's emergency response to a failure of the Metropolitan Tunnel system until a redundant tunnel is constructed. The Project is to replace pressure reducing valves on the Weston Aqueduct Supply Main number 4 (WASM 4) at Nonantum Road in Boston, and WASM 3 at Mystic Valley Parkway in Medford. This will allow the Northern Low Service System to supply the Gillis and Spot Pond Pump Stations in Stoneham and reduce the need to pump non-potable water



*Mystic Valley Parkway
Pressure Reducing Valve Chamber*

out of the Spot Pond Reservoir in an emergency. The new, larger pressure reducing valves at Nonantum Road and Mystic Valley Parkway will be designed to be controlled remotely through SCADA. The Northern Low Service pipelines would operate at increased grade lines to supply additional flow to the Spot Pond Pump Station and Storage Facility, and to the Gillis Pump Station in an emergency condition with the tunnel system out of service. Additionally, a new master meter will be constructed at the Mystic Valley Parkway pressure reducing valves and the existing master meter located near the Nonantum Road pressure reducing valves will be upgraded to accommodate the increased flow. Also, up to five Northern Low Service revenue meters (one in Boston, four in Somerville) will be evaluated to determine if pressure reducing valves will be required to protect the local water systems from higher pressures from the MWRA system.

DISCUSSION:

The scope of this professional services contract includes reviewing previous assessments and project documentation, performing geotechnical and hazardous materials analyses, evaluating chamber locations and pressure reducing valve types and sizes, obtaining all required permits, preparing construction contract documents, including drawings and specifications, and providing engineering services during construction.

Given the critical and unique nature of this project, staff required that the Consultant’s key personnel have specialized experience in design of large pressure reducing valves and design of SCADA systems.

Procurement Process

On March 14, 2018, MWRA issued a one-step Request for Qualifications Statements/Proposals which was publically advertised in the Central Register, Boston Herald, Banner Publications and El Mundo. In addition, notice of the RFQ/P was sent directly to 23 firms. The RFQ/P included the following evaluation criteria: Cost- 25 points; Qualifications and Key Personnel- 25 Points; Relevant Experience/Past Performance- 25 points; Technical Approach/Capacity, Organization and Management Approach- 20 points; and MBE/WBE Participation- 5 points.

On April 18, 2018, the MWRA received one proposal from CDM Smith, Inc. Multiple firms were contacted to determine the reason why firms did not propose. One firm was included as a subconsultant to CDM Smith. Six other firms reported that while there was initial interest in the project, it was ultimately determined that the specialized nature of the work was not a good match for the firm’s qualifications and a business decision was made to not propose. CDM Smith’s proposed cost and level of effort are presented below.

PROPOSER	PROPOSED CONTRACT COST	LEVEL OF EFFORT
CDM Smith, Inc.	\$2,849,332	15,721 hours
<i>Engineers Estimate</i>	\$3,353,375	16,303 hours

The Selection Committee reviewed the proposal to confirm the firm is qualified to perform the work, with an appropriate cost and level of effort. The Selection Committee determined that CDM Smith met the requirements of the RFQ/P and that its proposed cost and level of effort for the specified work is reasonable. CDM Smith’s proposed cost is 15% (\$504,043) below the Engineer’s Estimate and its proposed level of effort is 4% (582 hours) below the Engineer’s Estimate, both of

which were determined by the Committee to be adequate to perform the work. CDM Smith's proposed fee for design services is discounted from the 12% maximum allowed to 8%. The Committee also concluded that CDM Smith's cost assumptions are reasonable.

CDM Smith met the qualifications requirements and has extensive water engineering experience with the Authority. The proposed team is based out of CDM Smith's Boston and Manchester, New Hampshire offices. The proposed Project Manager was directly involved with the development of the original and updated MWRA hydraulic model, and the current operational plan for the Nonantum Road pressure reducing valve, which supplies the new Spot Pond Storage Facility, and is thus very familiar with the hydraulics of the Authority's water transmission system.

The proposed project team has similar experience in the design of large pressure reducing valves for the Springfield Water and Sewer Commission and the Colorado Springs Utilities, as well as over twenty projects including pressure reducing valves world-wide. The project team also has extensive experience in the design of SCADA systems including several projects for the MWRA.

CDM Smith's technical approach demonstrated an excellent understanding of the project and the proposal provides potential alternatives for design and operation of the pressure reducing valves. The Authority contacted four external references provided, all with overall ratings of good to excellent. The Committee additionally reviewed the internal references provided, which included the Spot Pond Water Storage Facility and the Sudbury Aqueduct Pressurization and Connections project, as well as several ongoing water and wastewater projects. All internal reviews received overall ratings of good to excellent as well.

Staff met with representatives of CDM Smith to confirm the scope of work, costs, and level of effort. Based on those discussions, staff are of the opinion that CDM Smith can successfully complete the specified work for the proposed cost.

For the reasons set forth above, the Selection Committee recommends that Contract 7575 be awarded to CDM Smith in an amount not to exceed \$2,849,332. Staff considered re-advertising this contract but determined, based upon a survey of the other firms solicited and the specialized nature of the work, that re-procurement would not likely produce additional competition.

BUDGET/FISCAL IMPACT:

For Contract 7575, the FY18 CIP includes a budget of \$2,100,000 and the draft Final FY19 CIP includes a budget of \$4,200,000.

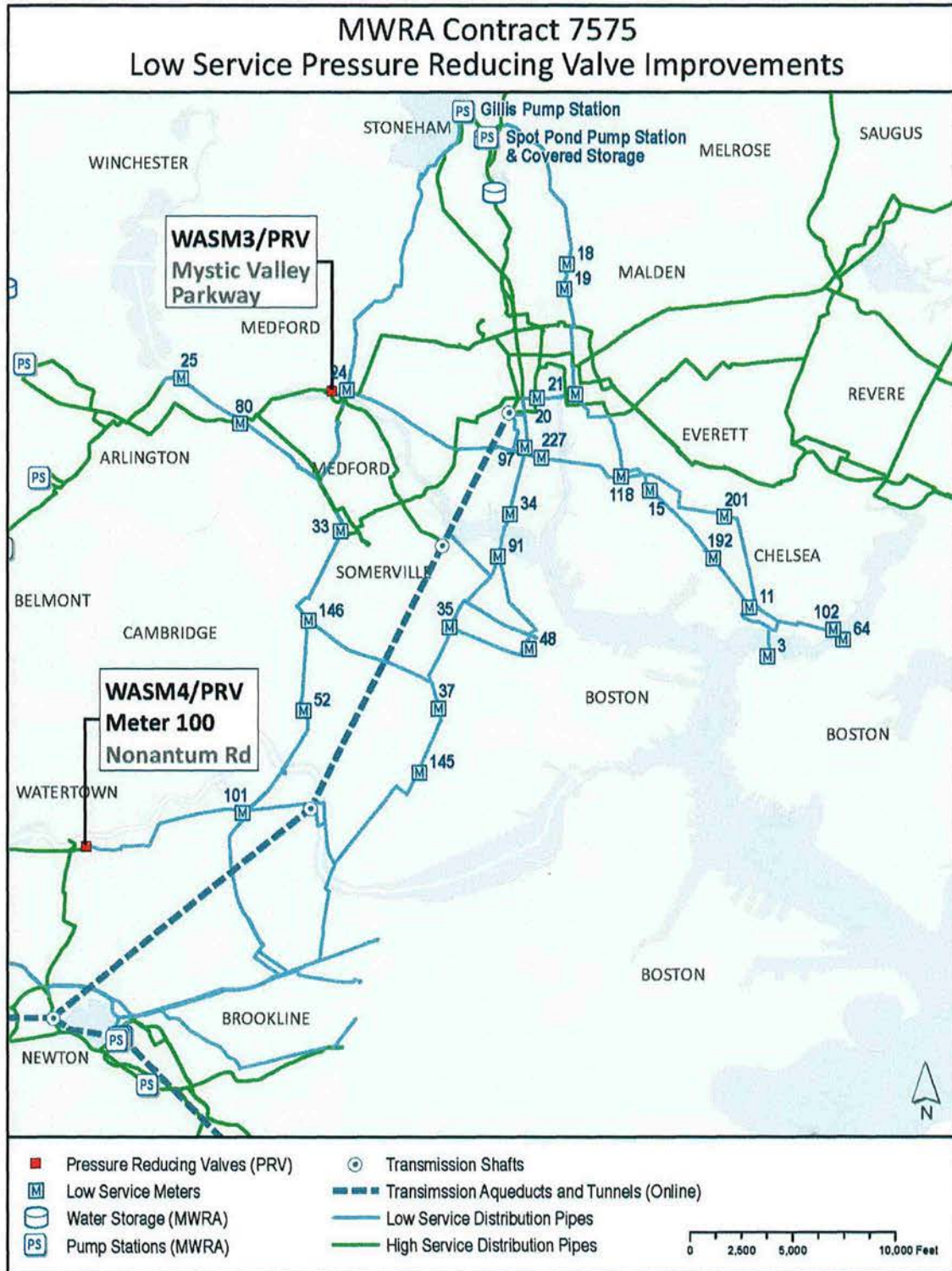
MBE/WBE PARTICIPATION:

The minimum MBE and WBE participation requirements for this project were established at 7.18% and 5.77% respectively. CDM Smith has committed to 15.79% MBE and 7.61% WBE participation.


ATTACHMENT:

Figure 1 – Pressure Reducing Valve Improvements Location Map

Figure 1 - Pressure Reducing Valve Improvements Location Map



STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: May 30, 2018
SUBJECT: Southern Extra High Pipeline - Section 111 - Dedham South
RJV Construction Corp.
Contract 7505

COMMITTEE: Water Policy & Oversight

 INFORMATION
 X VOTE

John P. Vetere, Deputy Chief Operating Officer
A. Navanandan P.E., Chief Engineer
Paul T. Rullo P.E., Program Manager
Preparer/Title


Michele S. Gillen
Director of Administration


David W. Coppes, P.E.
Chief Operating Officer

RECOMMENDATION:

To approve the award of Contract 7505, Southern Extra High Pipeline Section 111 - Dedham South, to the lowest responsible and eligible bidder, RJV Construction Corp., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the amount of \$19,375,000 for a contract term of 820 calendar days from the Notice to Proceed.

DISCUSSION:

MWRA's Southern Extra High service area includes Canton, Dedham, Norwood, Stoughton, Westwood, portions of Brookline and Milton, and the Roslindale and West Roxbury sections of Boston. The five communities in the southern portion of the service area (Canton, Norwood, Dedham, Westwood, and Stoughton) are served by a single 36-inch diameter transmission main (Section 77), which is five miles long. Canton and Stoughton are served by a branch (Section 88) off of Section 77. Although several of these communities are partially supplied by MWRA, the loss of Section 77 would result in a rapid loss of service in Norwood and Canton, and potential water restrictions for Stoughton and the Dedham/Westwood Water District. Correction of this deficiency was assigned a Priority One in MWRA's Water Master Plan due to the potential critical impact to public health that could result from a failure in this single transmission main.

On November 14, 2012, staff presented to the Board an evaluation of alternatives and a recommendation to proceed with a 5.4-mile redundant pipeline alternative from the Bellevue Water Storage Tanks in West Roxbury through Dedham to Westwood where the proposed pipeline

would interconnect with existing pipeline Section 77 near the Route 95 East Street Rotary. The route is shown on the attached Figure 1. In June 2013, MWRA filed an Environment Notification Form for the project and in July 2013 MWRA received a Certificate from the Secretary of Energy and Environmental Affairs stating that the project does not require the preparation of an Environmental Impact Report. Upon completion of the Massachusetts Environmental Policy Act process, staff procured a consultant for design, construction administration, and resident inspection services. On January 5, 2014 the Board approved the award of the consultant contract to Fay, Spofford & Thorndike, LLC (now Stantec).

Contract Components and Schedule

The entire Southern Extra High Redundancy project is separated into three construction contracts as follows:

- Contract 6454, Section 111 – Boston, consists of 11,000 linear feet of 36-inch water main, which is primarily located within the Department of Conservation and Recreation’s Stony Brook Reservation in Boston. This contract was awarded in May 2016 and is scheduled for substantial completion in September 2018;
- Contract 7504, Section 111 - Dedham North, consists of 10,000 linear feet of 36-inch water main of which 3,000 linear feet is within DCR’s Stony Brook Reservation in Dedham with the remaining 7,000 linear feet within residential neighborhoods of Dedham. This contract includes a new pipe bridge across Mother Brook on Sawmill Lane. This contract was awarded in October 2017 and is scheduled for substantial completion in November 2019; and
- Contract 7505, Section 111 - Dedham South, which is the subject of this staff summary, consists of 6,800 linear feet of 36-inch water main in Dedham and in Westwood, and includes pipe jacking at the Dedham Corporate MBTA Station and at the MassDOT Route 95 East Street Rotary. This contract also includes activation of the pipeline of all three contracts, which is scheduled for late 2019. Substantial Completion is scheduled for October 2020. A staff summary to approve a Memorandum of Agreement with the Dedham/Westwood Water District to reimburse MWRA for construction of 560 linear feet of local water mains was presented to the Board in March 2018. Authorization to acquire an easement from the MBTA at Dedham Corporate Station will be presented at a future Board Meeting.

Procurement Process

Contract 7505 was advertised in the Central Register, Boston Herald, Banner Publication, El Mundo, and COMMBUYS and bid utilizing MWRA’s e-procurement system (Event 3169) in accordance with Massachusetts General Laws, Chapter 30. Four bids were received and opened on April 26, 2018. The bid results were as follows:

<u>Bidders</u>	<u>Bid Amount</u>
<i>Engineers Estimate</i>	<i>\$18,970,000</i>
RJV Construction Corp.	\$19,375,000
Baltazar Contractors Inc.	\$19,505,000
P. Gioioso and Sons, Inc.	\$20,345,000
Revoli Construction Co., Inc.	\$21,964,000

RJV Construction Corp. submitted a bid price that is \$405,000 (2.1%) higher than the Engineer's Estimate, and 0.7% less than the next lowest bidder, which demonstrates reasonableness of price.

Staff met with RJV Construction Corp. and confirmed that the bid price reflects all work described in the contract documents. References for the firm were checked and found to be favorable. RJV Construction Corp. has completed large, complex projects for MWRA, including Phase 2 of the Southern Spine Distribution Mains (MWRA Contract 7099, \$14.6 million), Phase VII Valve Replacement (MWRA Contract 6436, \$2.4 million) and the Construction of Section 36 Water Mains (MWRA Contract 7448, \$11.2 million). The firm has also successfully completed many water, sewer, and drain projects for BWSC totaling \$85 million, and numerous other municipal pipeline projects. References for RJV Construction Corp.'s key subcontractors for pipe jacking and excavation support were favorable and confirmed that they have successfully performed similar work.

Staff and Stantec have concluded that RJV Construction Corp. possesses the skill, ability, and integrity necessary to perform the work under this contract, and is qualified to do so. Staff have determined that the bid price is reasonable, complete and includes the payment of prevailing wage rates, as required. Therefore, staff recommend that Contract 7505 be awarded to RJV Construction Corp. as the lowest responsible and eligible bidder.

BUDGET/FISCAL IMPACT:

The FY18 CIP includes a budget of \$10,000,000 for Contract 7505. This budget was updated in the draft Final FY19 CIP to \$19,000,000.

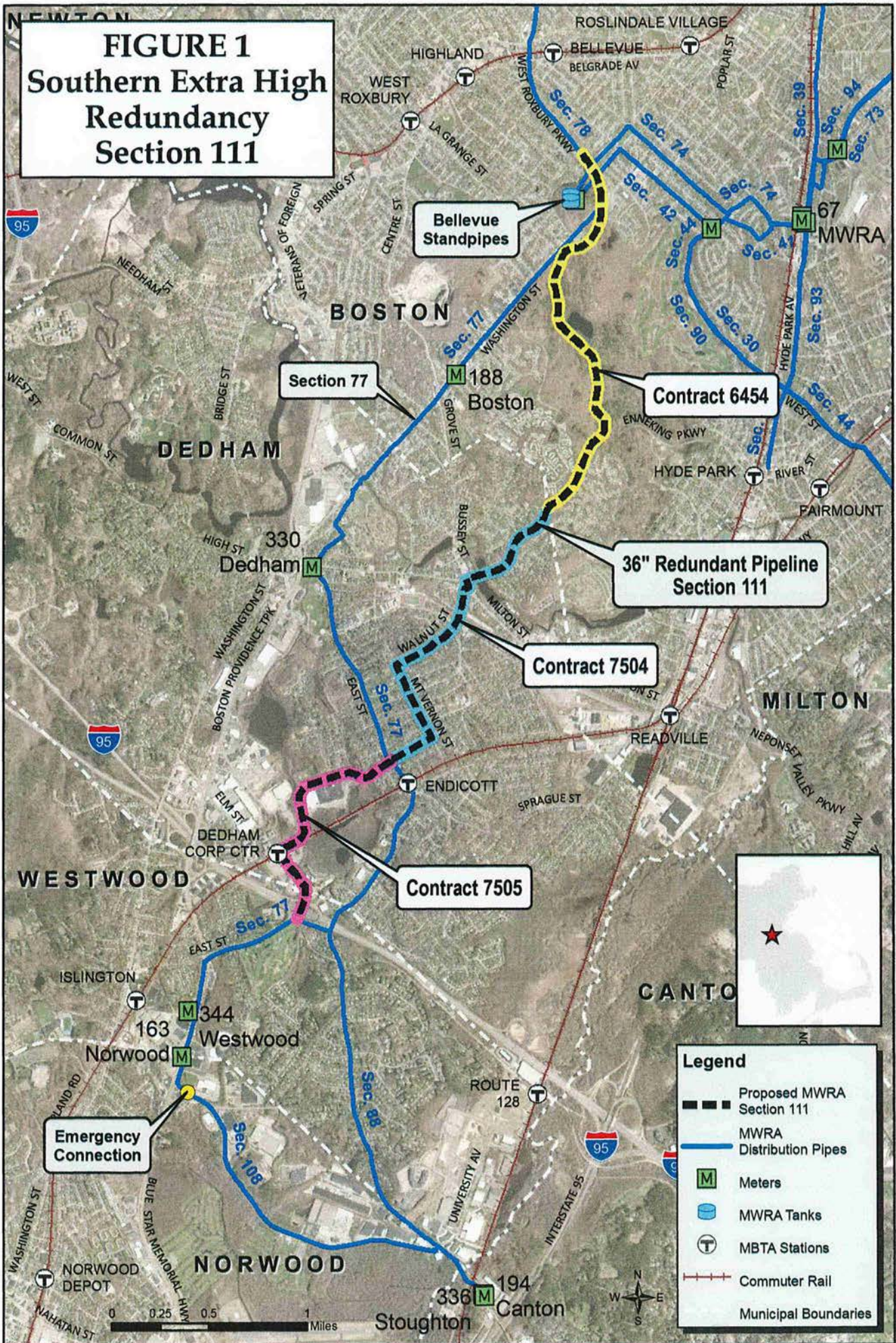
MBE/WBE PARTICIPATION:

The D/MBE and WBE participation requirements for this project were established at 4.2% and 4.5%, respectively. The Affirmative Action and Compliance Unit has reviewed the bids and has determined that the bid from RJV Construction Corp. is responsive to these requirements.


ATTACHMENT:

Figure 1: Section 111- Southern Extra High Redundancy.

FIGURE 1
Southern Extra High
Redundancy
Section 111



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: May 30, 2018
SUBJECT: Section 14 Water Pipeline Relocation - Malden
Albanese Brothers, Inc.
Contract 6957, Change Order 5

COMMITTEE: Water Policy & Oversight

INFORMATION
 VOTE

A. Navanandan, P.E. Chief Engineer
Corinne M. Barrett, Director, Construction
Jeffrey Bina, P.E. Construction Coordinator
Preparer/Title


David W. Coppes, P.E.
Chief Operating Officer

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Change Order 5 to Contract 6957, Section 14 Water Pipeline Relocation - Malden, with Albanese Brothers, Inc., for an amount not to exceed \$152,777.72, increasing the contract amount from \$1,524,243.79 to \$1,677,021.51, and no extension of contract term.

Further, to authorize the Executive Director to approve additional change orders as may be needed to Contract 6957 in an amount not to exceed the aggregate of \$75,000, in accordance with the Management Policies and Procedures of the Board of Directors.

DISCUSSION:

Contract 6957 includes replacement and relocation of a portion of the existing Section 14 water main with a larger diameter pipe in order to avoid potential construction and long-term maintenance impacts associated with the demolition of Malden City Hall and construction of three new buildings. The project involves: installing approximately 400 feet of new 30-inch and 36-inch ductile iron water pipe, a 36-inch gate valve, and a blow-off setup to replace MWRA's 45-year old existing main.

The developer's contractor has demolished the existing City Hall building, police station and historic church at the site. MWRA's contractor was tasked with coordinating the installation of the new MWRA 36-inch water main and appurtenances with the developer's contractor on the site following demolition of the City Hall building, and re-grading the site to its future street elevation. The contract includes some night work due to the level of vehicular and pedestrian traffic in the vicinity of the work at Commercial and Pleasant Streets adjacent to the Malden Center MBTA

This Change Order

Change Order 5 consists of the following two items:

Furnish and Install 30-inch Ductile Iron Pipe in a Revised Alignment Along with Support of Trench and Utility Duct Banks

Not to Exceed \$120,000.00

The contract includes installing a new 36-inch water pipeline on Commercial Street, below the existing utility conduit duct banks. Three utility duct banks, discovered through exploratory test pits after construction commenced, are in direct conflict with the proposed location of the new water pipeline. Two of the duct banks were not shown on the contract drawings, and the third duct bank is deeper than shown on the drawings. As a result of the direct conflict, the pipeline has been redesigned with an alternative layout. This route is approximately four feet deeper than the initial design depth and uses 30-inch ductile iron pipe in lieu of the specified 36-inch ductile iron pipe to provide additional vertical clearance between duct banks. The 36-inch pipe had been delivered to the site prior to the test pits being performed, and will be turned over to the Authority for spare parts.



Installing 30-inch Ductile Iron Pipe in a Revised Alignment

The change order for this additional work includes furnishing the pipe, installing trench support deeper than originally designed and providing support and protection of three additional utility duct banks.

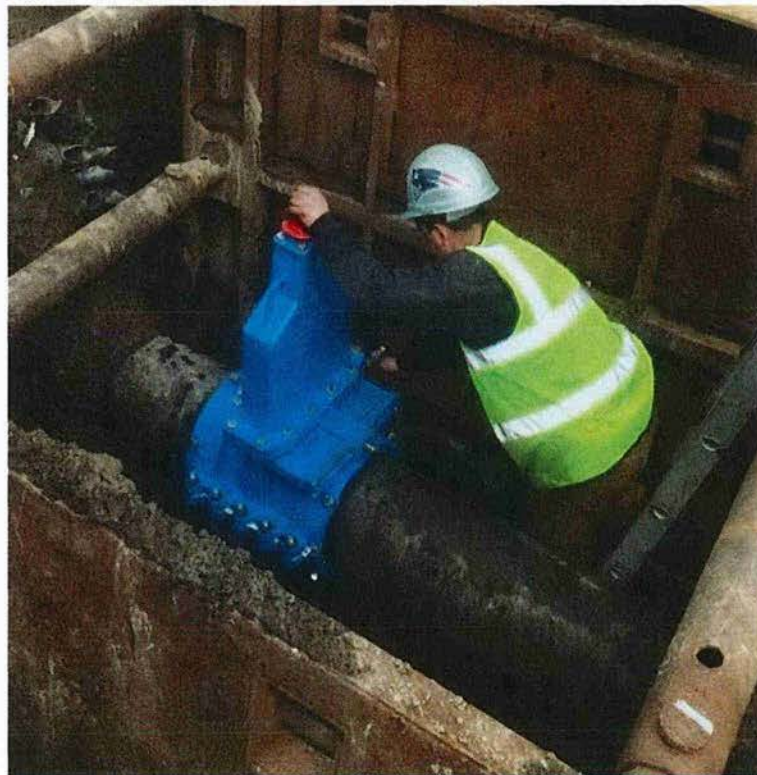
This has been identified by MWRA staff as an unforeseen condition. MWRA staff and the Contractor have agreed to an amount not to exceed \$120,000 for this additional work with no increase in contract term. Staff and the Contractor are currently negotiating the final cost of this item. The Contractor proceeded with this work at its own risk in order to continue with the remainder of the contract work.

Excavate and Furnish and Install Two Insertion Valves in a City of Malden Water Pipe

\$32,777.72

The contract includes installation of new ductile iron pipe under an existing City of Malden water pipe on Pleasant Street. After commencement of the contract, the Malden water pipe was cut short and a fire hydrant installed as part of the Malden City Hall redevelopment project. The location of the hydrant is within and over the trench limits of the proposed MWRA contract work. Excavation of the trench would have exposed the live hydrant creating a potentially dangerous condition if any of the hydrant fittings or lateral valve restraints were disturbed. To shutdown the hydrant would require isolating service to many businesses and residents including senior housing, retail stores and restaurants. To minimize service disruption, two insertion valves were installed on the existing 12-inch Malden water main. This allowed the isolation of a very limited section of Malden's water main in the vicinity of the contract work without affecting residents or businesses.

This has been identified by MWRA staff as an unforeseen condition. MWRA staff and the Contractor agreed to a lump sum amount of \$32,777.72 for this additional work with no increase in contract term. The Contractor proceeded with this work at its own risk in order to continue with the remainder of the contract work.



Installation of 12-inch Insertion Valve

CONTRACT SUMMARY:

	AMOUNT	TIME	DATED
Original Contract:	\$1,404,500.00	161 Days	06/21/17

CHANGE ORDERS

Change Order 1*	\$4,563.27	0 Days	02/05/18
Change Order 2*	\$84,399.65	180 Days	03/15/18
Change Order 3*	\$22,133.79	0 Days	04/30/18
Change Order 4*	\$8,647.08	0 Days	05/02/18
Change Order 5	<u>\$152,777.72</u>	<u>0 Days</u>	Pending
Total Change Orders:	\$272,521.51	180 Days	

Adjusted Contract:	\$1,677,021.51	341 Days	
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*Approved under delegated authority

If Change Order 5 is approved, the cumulative total value of all change orders to this contract will be \$272,521.51 or 19.4% of the original contract amount. Work on this contract is 95% complete.

BUDGET/FISCAL IMPACT:

The FY18 CIP includes a budget of \$1,270,000 for Contract 6957. Including this change order for \$152,777.72, the adjusted subphase total will be \$1,677,021.51 or \$407,021.51 over budget. The draft Final FY19 CIP includes a budget of \$1,552,963.

MBE/WBE PARTICIPATION:

There were no MBE or WBE participation requirements established for this contract due to limited opportunities for subcontracting.

STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 30, 2018
SUBJECT: Wachusett Aqueduct Pumping Station
BHD/BEC JV 2015, A Joint Venture
Contract 7157, Change Order 32



COMMITTEE: Water Policy and Oversight

 INFORMATION
 X VOTE

A. Navanandan, P.E. Chief Engineer
Corinne M. Barrett, Director, Construction
Vincent Spada, Construction Coordinator
Preparer/Title



David W. Coppes, P.E.
Chief Operating Officer

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Change Order 32 to Contract 7157, Wachusett Aqueduct Pumping Station, with BHD/BEC JV 2015, A Joint Venture, for a lump sum amount of \$292,910.00, increasing the contract amount from \$48,966,286.29 to \$49,259,196.29, with no increase in contract term.

Further, to authorize the Executive Director to approve additional change orders as may be needed to Contract 7157 in an amount not to exceed the aggregate of \$250,000, in accordance with the Management Policies and Procedures of the Board of Directors.

DISCUSSION:

The water transmission system between the Wachusett Reservoir and the John J. Carroll Water Treatment Plant consists of the Cosgrove Tunnel and the Wachusett Aqueduct. The Cosgrove Tunnel provides the primary raw water supply to the Carroll Plant and the Wachusett Aqueduct is an emergency back-up. Although rehabilitation of the Wachusett Aqueduct in 2003 allowed its use during a short winter duration so that the Cosgrove Tunnel could be connected to the Carroll Plant, it is limited in its flow capacity (approximately 240 MGD) and it cannot meet the grade line requirements of the Carroll Plant in the event of an emergency. Since the Wachusett Aqueduct operates at a lower hydraulic grade line than the Cosgrove Tunnel, water cannot flow from it into the Carroll Plant's ozone contactors without pumping. If the Wachusett Aqueduct were needed in an emergency, the Carroll Plant would have to be shut down and temporary chlorination facilities would have to be installed at the upstream-end of the aqueduct, at the base of the Wachusett dam, to provide disinfection. Demand management would be required during periods of summer high water use if demand exceeded the aqueduct's capacity.

Once completed, this new pumping station will allow the Wachusett Aqueduct to provide up to 240 MGD of redundant capacity for the Cosgrove Tunnel. Completion of the Hultman Aqueduct rehabilitation and interconnections project provided redundancy for the MetroWest Water Supply Tunnel. Together, these projects will provide water transmission redundancy from Wachusett Reservoir to the metropolitan tunnel system.

This Change Order

Change Order 32 consists of the following three items:

Cast in Place Concrete Bond Beam \$140,920

The concrete masonry unit (CMU) bond beams are designed to extend around the full 400 linear foot perimeter of the CMU wall every four feet vertically, to secure the wall to the structural steel frame. The bond beams consist of CMU U-shaped blocks filled with grout and reinforcing steel. The top of the masonry wall is approximately 20 feet above surface grade. The uppermost bond beams are located underneath, and secured to, the top horizontal steel beams that span between the columns. There was insufficient space between the bottom of the horizontal steel beams and the top of the masonry wall to install the CMU U-shaped bond beam, therefore the top bond beams could not be constructed as designed. In lieu of the specified CMU bond beam, cast-in-place concrete was pumped into wooden forms with reinforcing steel extending from the base of the last layer of CMU wall to the bottom of the steel beams.



Installed bond beam



Construction of the bond beams, concrete forms and reinforcement steel

This item has been identified by MWRA staff as a design error. MWRA staff, the Consultant, and the Contractor have agreed to a lump sum amount of \$140,920 for this additional work with no increase in contract term. The Contractor proceeded with this work at its own risk in order to continue with the remainder of the contract work.

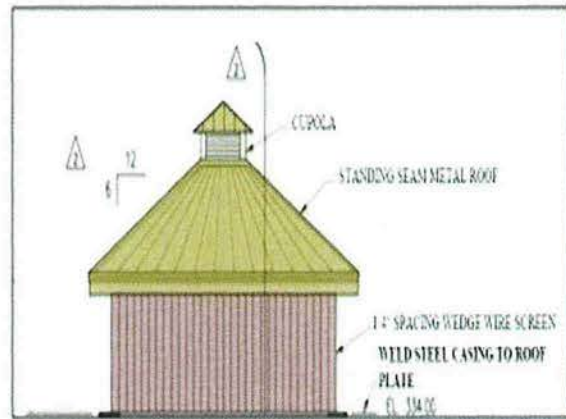
Surge Tank Roof and Surge Tank Cupola

\$123,527

The surge tank is located adjacent to the Wachusett Aqueduct Pumping Station. The structure extends 50 feet above the ground surface and has a diameter of 14 feet. The surge tank was designed with a circular roof to enclose the top of the tank. The contract documents included a standing seam metal roof, cupola and louvers. Omitted from the contract documents were: the plywood sub-base, metal roof decking, ice/water shield located under the standing seam roof, framing for the four louvers in the cupola, roof flashing and soffit, eave and fascia requirements. Because the required roofing components were missing from the contract documents the roofing subcontractor did not include the costs of this additional work in its price.



Surge Tank Construction



Surge Tank Welding

This item has been identified by MWRA staff as a design omission. MWRA staff, the Consultant, and the Contractor have agreed to a lump sum amount of \$123,527 for this additional work with no increase in contract term. The work at the surge tank roof has not begun.

Front Entrance Canopy and Pump Station Roof Drains and Leaders

\$28,463



Rain Leader at the Guard House

Furnishing and installing the cast iron piping roof drains and leaders is plumbing work. The roof drains and leaders are only shown on the Architectural Drawings. This work was omitted from the Plumbing Drawings assigned to the plumbing subcontractor, and therefore not included in the plumbing subcontractor's price. These items needed to be furnished and installed to properly complete the roof drainage system.

This item has been identified by MWRA staff as a design omission. MWRA staff, the Consultant, and the Contractor have agreed to a lump sum amount of \$28,463 for this additional work with no increase in contract term. The Contractor proceeded with this work at its own risk in order

to continue with the remainder of the contract work.

CONTRACT SUMMARY:

	<u>Amount</u>	<u>Time</u>	<u>Dated</u>
Original Contract:	\$47,011,000.00	1,260 Days	03/01/16
Change Orders:			
Change Order 1*	(\$1,500,000.00)	(180) Days	07/25/16
Change Order 2*	\$14,766.00	0 Days	10/26/16
Change Order 3*	\$24,822.00	0 Days	11/16/16
Change Order 4*	\$199,629.92	0 Days	12/12/16
Change Order 5	\$328,039.00	0 Days	12/23/16
Change Order 6*	\$23,202.00	0 Days	01/18/17
Change Order 7*	\$24,533.12	0 Days	02/06/17
Change Order 8*	\$189,495.00	0 Days	03/06/17
Change Order 9	\$100,079.80	0 Days	03/23/17
Change Order 10*	\$24,521.45	0 Days	04/03/17
Change Order 11*	\$24,455.00	0 Days	04/12/17
Change Order 12*	\$24,659.00	0 Days	04/19/17
Change Order 13*	\$22,491.00	0 Days	05/03/17
Change Order 14*	\$19,515.00	0 Days	05/22/17
Change Order 15	\$306,664.00	0 Days	06/12/17
Change Order 16*	\$200,000.00	0 Days	07/24/17
Change Order 17*	\$23,350.00	0 Days	07/27/17
Change Order 18	\$608,007.00	0 Days	07/27/17
Change Order 19*	\$19,866.00	0 Days	08/14/17
Change Order 20*	\$222,828.00	0 Days	10/04/17
Change Order 21	\$285,385.00	0 Days	10/04/17
Change Order 22*	\$19,436.00	0 Days	10/24/17
Change Order 23*	\$24,888.00	0 Days	10/30/17
Change Order 24*	\$183,838.00	0 Days	11/28/17
Change Order 25	\$290,963.00	0 Days	11/29/17
Change Order 26*	\$22,404.00	0 Days	12/12/17
Change Order 27*	\$21,710.00	0 Days	01/03/18
Change Order 28*	\$23,825.00	0 Days	02/22/18
Change Order 29*	\$24,931.00	0 Days	02/22/18
Change Order 30*	\$15,297.00	0 Days	03/20/18
Change Order 31*	\$141,686.00	0 Days	05/14/18
Change Order 32	<u>\$292,910.00</u>	<u>0 Days</u>	Pending
Total of Change Orders:	\$2,248,196.29	(180) Days	
Adjusted Contract:	\$49,259,196.29	1,080 Days	

*Approved under delegated authority

If Change Order 32 is approved, the cumulative total value of all change orders to this contract will be \$2,248,196.29 or 4.8% of the original contract amount. Work on this contract is 85% complete.

BUDGET/FISCAL IMPACT:

The FY18 CIP includes a budget of \$47,159,267 for Contract 7157. Including this change order for a lump sum amount of \$292,910, the adjusted sub phase total will be \$49,259,196.29 or \$2,099,929.29 over budget. The draft FY19 CIP was updated to include a budget of \$49,876,796.

MBE/WBE PARTICIPATION:

The MBE/WBE participation requirements for this project were established at 3.4% and 3.8%, respectively.



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

to be held on

Chair: J. Wolowicz
Vice-Chair: K. Cotter
Committee Members:
J. Carroll
P. Flanagan
J. Foti
A. Pappastergion
H. Vitale
J. Walsh

Wednesday, May 30, 2018

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

Time: Immediately following Water Committee

AGENDA

A. Information

1. Update on Retirements
2. Proposed Organizational Changes in the Operations Division

B. Approvals

1. PCR Amendments
2. Appointment of Superintendent, Clinton Wastewater Treatment Plant
3. FY2019 Non-Union Compensation

C. Annual Meeting of the Personnel and Compensation Committee Independent of Management

1. Authority Accountability and Transparency Act Compliance

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Personnel and Compensation Committee

April 18, 2018

A meeting of the Personnel and Compensation Committee was held on April 18, 2018 at the Authority headquarters in Charlestown. Chair Wolowicz presided. Present from the Board were Messrs. Blackmon, Carroll, Flanagan, Pappastergion, Peña, Vitale and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Ria Convery, Stephen Estes-Smargiassi, Karen Gay-Valente, Michele Gillen, Andrea Murphy, John Vetere and Kristin MacDougall. The meeting was called to order at 10:15 a.m.

Approvals

* PCR Amendments – April 2018

Staff described the need to change three positions in the Position Control Register to reflect organizational changes in the Operations and Administration Divisions. Mr. Laskey noted that a goal of the Operations PCR amendments was to centralize data management functions. The Committee recommended approval of the amendments (ref. agenda item A.1.)

* Appointment of Senior Staff Counsel

The Committee recommended the appointment of Ms. Donna McMahon (ref. agenda item A.2.)

* Appointment of Program Manager, SCADA Engineering

The Committee recommended the appointment of Mr. Norman Green (ref. agenda item A.3.)

* Appointment of Director, Tunnel Redundancy Program

There was general discussion and questions and answers about the appointment. The Committee recommended the appointment of Ms. Kathleen M. Murtagh (ref. item A.4.)

* Approved as recommended at April 18, 2018 Board of Directors meeting.

Mr. Carroll requested that Ms. Murtagh be introduced to the Board of Directors during the Board Meeting session. Mr. Peña requested an example of an MWRA employee contract.

* Appointment of Warehouse Manager

The Committee recommended the appointment of Ms. Mary Lisa Freeman (ref. item A.5.)

* Appointment of Deputy Director, Management Information Systems, Administration

The Committee recommended the appointment of Ms. Paula Weadick (ref. item A.6.)

* Appointment of Manager, Compensation, Human Resources, Administration Division

The Committee recommended the appointment of Ms. Natalie Wadzinski (ref. item A.7.)

Contract Awards

* Occupational and Medical Services: AllOne Health Resources, Inc., Contract A615

Staff provided a brief overview of this contract to provide medical services and consultation for occupational health programs. This was followed by general discussion and questions and answers. The Committee recommended the approval of the contract award (ref. item B.1.)

Ms. Wolowicz requested that staff provide the Board of Directors with a list of MWRA employees who retired and how those vacancies were dealt with.

The meeting adjourned at 10:40 a.m.

* Approved as recommended at [date] Board of Directors meeting.

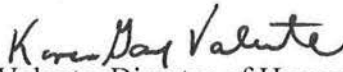
STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 30, 2018
SUBJECT: Update on Retirements



COMMITTEE: Personnel and Compensation

X INFORMATION
___ VOTE


Karen Gay-Valente, Director of Human Resources
Andrea Murphy, Employment Manager
Preparer/Title


Michele S. Gillen
Director Administration

MWRA continues to see an increase in the number of employees leaving the Agency due to retirement. The Board has requested an overview of the staff retirements over the past year and information on how the MWRA has handled those retirements. This staff summary provides that information.

RECOMMENDATION:

For information only.

DISCUSSION:

MWRA continues to see an increase in staff turnover, mostly due to a higher number of employees reaching an age with enough years of service to retire. The steady increase in retirements started in FY13. In FY12, 23 employees left the agency due to retirement. By FY15 that number had almost doubled, with 40 employees retiring that year.

During the one-year period between May 1, 2017 and April 30, 2018, the pattern of increasing retirements has continued. During this twelve-month period, 56 employees have retired including six senior level managers, including the long-time Chief Operating Officer. Other managers who have retired this year include an Associate General Counsel, the Director of TRAC, the Manager of Policy and Planning, the Manager of Metering and Monitoring, and the Compensation Manager.

MWRA continues to implement succession planning measures to address the increase in retirements and to ensure positions are filled quickly and with minimal operational impact. Senior managers meet regularly to discuss upcoming and anticipated retirements to plan accordingly. When possible, positions are advertised in advance of the incumbent's retirement to provide an overlap period to allow the retiring employee to share knowledge with their replacement. MWRA also continues to invest heavily in training, developing and offering programs to ensure that employees are provided with the skills and experience to advance in the organization so that vacancies can be quickly filled with competent qualified staff.

One half of the 56 positions vacated through retirements were filled internally through promotion or reassignment; 14% were filled through new hires; and 21% are in the process of being filled with the majority of positions anticipated to be filled internally. That leaves eight positions which as of this date have not been backfilled. When positions are vacated through retirements or other means, senior management looks critically at the agency-wide staffing needs to determine if a backfill is necessary in that position or if a more critical need exists elsewhere. This has resulted in several new positions being created where needed. In making these decisions, staff are mindful of the staffing cap of 1150 full-time equivalents. Newly created positions this year include a new Director of Environmental and Regulatory Affairs Manager to develop and oversee environmental policy, and a new Manager of Energy to develop and implement a comprehensive Energy Management Plan and oversee MWRA's renewal energy portfolio.

Although the 56 retirements represent a small percentage of the workforce (about 5%), the impact on staff time devoted to filling the positions is still significant. 94% of the retirees were long-time, higher level employees. Because staff, through succession planning, have built a strong "bench," there have been many internal promotions into the vacated positions. It can then take several hiring processes over many months before the overall head count recovers from one retirement.

The chart below provides a summary of the disposition of the positions impacted by retirements. Attachment A lists each retirement with the corresponding action taken to replace the individual.

Retirements		
May 1, 2017 – April 30, 2018		
Backfills	Number	Percentage
New Hires	8	14%
Promotions	20	36%
Trans/Reassign	8	14%
In Process	12	22%
Vacant	8	14%
Total	56	100%

ATTACHMENT:


List of all retirements for the period May 1, 2017 through April 30, 2018.

Retirements
May 1, 2017-April 30, 2018

Last Name	First Name	Position	Union	Grade	Term Date	Disposition
Andon	James	WDS General Foreman	U2	21	18-Apr-18	In Process
Boyajian	Edward	Project Manager, Facilities	U9	25	02-Mar-18	In Process
Chang	Funmei	Data Management Supervisor	U6	9	12-Jan-18	In Process
Delano	Stephen	Facilities Specialist	U3	15	06-Oct-17	In Process
Fallon	Robert	OMC Laborer	U2	13	30-Jan-18	In Process
Hanscombe	Alan	Operator	U3	16	19-Jan-18	In Process
Keating	William	Principal Civil Engineer	U9	25	24-Nov-17	In Process
Lemanski	Bernard	Project Manager	U9	25	16-Feb-18	In Process
Puopolo	Doris	Statistical Super, Meter Data	U6	10	19-Jan-18	In Process
Renda	Eric	Industrial Coordinator	U9	23	24-Mar-18	In Process
Rota	David	Transmission & Treatment Oper	U3	16	20-Apr-18	In Process
Smokler	Donald	Sr Field Service Technician	U1	17	27-Oct-17	In Process
Bishop	John	Associate General Counsel	NU	15	05-May-17	New Hire
Carpenter	Mark	OMC Laborer	U2	13	18-Jan-18	New Hire
Carroll	Joan	Manager, Compensation	NU	14	06-Apr-18	New Hire
Doherty	John	Skilled Laborer	U2	11	29-Dec-17	New Hire
Haywood	Leon	Plumber/Pipefitter	U3	16	30-Oct-17	New Hire
Heidell	Pamela	Manager, Policy & Planning	NU	13	27-Jan-18	New Hire
Riccio	John	Director, TRAC	NU	15	12-Jan-18	New Hire
Todros	Eugene	Second Class Engineer	U3	20	01-Dec-17	New Hire
Bain	Joel	Technical Support Analyst	U6	9	12-Jan-18	Promo
Brady	Janice	Materials Manager	U6	14	14-Jul-17	Promo
Burke	Nancy	Deputy Payroll Manager	U6	11	09-Dec-17	Promo
Calapa	Charles	Manager, Metering & Monitoring	NU	14	07-Jul-17	Promo
Clark	Thomas	Operator	U3	16	27-Oct-17	Promo
Cronin	Daniel	Technical Support Analyst	U6	9	19-Jan-18	Promo
Dantowitz	Howard	Project Engineer, Pilot Plant	U9	21	14-Jul-17	Promo
Donohue	Cheryl	Sr Staff Counsel	C6	13	04-Jan-18	Promo
Haglund	Roger	Sr Monitoring & Control Eng	U9	23	22-Sep-17	Promo
Harnois	Robert	Trades Foreman	U3	19	15-Dec-17	Promo
Hornbrook	Michael	Chief Operating Officer	NU	18	02-Mar-18	Promo
Machado	Gil	Supervisor, T&T Operations	U1	26	13-Jul-17	Promo
Manoloulis	Evangelos	Program Manager, PICS Control	U9	29	05-Jan-18	Promo
McDonough	John	Area Supervisor	U3	19	18-Mar-18	Promo
McGhee	Beth	Operator	U3	16	10-Jul-17	Promo
McSweeney	Nancy	Laboratory Supervisor III	U9	25	21-Aug-17	Promo
O'Shea	Cornelius	M & O Specialist	U2	16	25-Aug-17	Promo
Paradice	Lori	Project Manager, PIMS	U9	25	01-Dec-17	Promo
Steele	Elizabeth	Librarian/Records Manager	U6	11	29-Sep-17	Promo
Warot	Ryszarda	Chemist III	U9	22	22-Sep-17	Promo
Bacon	Gordon	Valve Maintenance Foreman	U2	16	19-Jun-17	Transfer

Beasley	Alphonse	Instrumentation Specialist	U2	16	01-Sep-17	Transfer
Edgett	Frederick	Operator	U3	16	03-Aug-17	Transfer
Hale	Bonnie	Asst To The Board Of Directors	C1	20	30-Mar-18	Transfer
Leary	Daniel	Operator	U3	16	07-Sep-17	Transfer
Shackford	Michael	OMC Laborer	U2	13	06-Oct-17	Transfer
Veilleux	Robert	Inventory Control Specialist	U2	15	31-Aug-17	Transfer
Venuti	Stephen	Program Manager, Environmental	U9	29	18-Jul-17	Transfer
Billington	Martha	File Clerk	U1	8	03-Jun-17	Vacant
Cawley	Leonard	Community Relations Manager	U6	13	14-Apr-18	Vacant
Connolly	Marianne	Sr Program Manager, E R & C	U9	30	20-Feb-18	Vacant
Holmes	Robert	Computer Operator II	U1	20	18-May-17	Vacant
McLaughlin	John	Project Manager	U9	25	05-Jan-18	Vacant
Renrick	Alfred	Data Tracking Assistant	U1	15	31-Jan-18	Vacant
Robinson	Charlie	Electrician	U3	16	08-Sep-17	Vacant
Roussel	Robert	Database Analyst/Programmer	U6	11	06-Oct-17	Vacant


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: May 30, 2018
SUBJECT: Proposed Organizational Changes in the Operations Division

COMMITTEE: Personnel & Compensation

 X INFORMATION
 VOTE

Karen Gay-Valente, Director, Human Resources
 Preparer/Title


David W. Coppes, P.E.
 Chief Operating Officer

In light of the anticipated retirement of John Vetere, the Deputy Chief Operating Officer, Operations, Engineering & Construction, staff have evaluated the organizational structure of the Operations Division. This staff summary provides an overview of the plan that staff will recommend to the Board for approval in the PCR amendments presented at this meeting.

RECOMMENDATION:

For information only.

DISCUSSION:

MWRA continues to experience a number of retirements at every level of the agency, which has motivated MWRA to focus on succession planning, hiring enthusiastic new employees for junior and entry level positions, and continued staff development and training for existing employees. Fortunately, MWRA has developed a very strong staff “bench” from which to field competent, knowledgeable and experienced replacements.

The impending departure of John Vetere, the Deputy Chief Operating Officer for Operations, Engineering & Construction, provides an opportunity to reassess the current organizational structure within the Operations Division as MWRA moves forward. The scope and breadth of Mr. Vetere’s responsibilities and his success in managing operations and maintenance of the water and wastewater systems, and the engineering and construction functions at MWRA are a testament to his unique capabilities and management skills. In this role, Mr. Vetere wears many hats and has assumed responsibility for a number of critical functions. His knowledge of the wastewater collection system and of the construction and operation of the Deer Island treatment plant is invaluable. In some ways, the current organization was structured to accommodate his capabilities and his departure highlights the “big shoes to fill” if the organizational structure remains the same, despite the strong staff that remain.

A strategic decision was made to separate some of the functions currently managed by the Deputy Chief Operating Officer for Operations, Engineering & Construction position, and to distribute their management through a change in position description and reporting structure, pending Board approval. Additionally under this plan, Ms. Carolyn Fiore would become the sole Deputy Chief Operating Officer and assume additional administrative and support staff. Ms. Fiore would act in the role of the Chief Operating Officer, Mr. Coppes, in his absence.

A new Director of Wastewater position (Non-union, Grade 16), reporting to the Chief Operating Officer, would be created to mirror the Director of Waterworks position that was created in 2014. The Director, Deer Island Wastewater Treatment Facility and the Director, Wastewater Operations and Maintenance would report directly to this new position. The Director of Wastewater would be responsible for oversight of the entire wastewater system and compliance with regulations governing all discharges and applicable water quality standards. In addition, the Director of Wastewater would be the primary manager in charge of the Chelsea facility and its upkeep and maintenance. This newly created position would be advertised internally and the replacement candidate would be appointed after Board approval. The Deputy Chief Operating Officer, Operations, Engineering & Construction position would not be backfilled.

In addition, the Chief Engineer, overseeing the Engineering and Construction Department, and the Director of Waterworks (currently advertised and anticipated to be filled at the next Board of Director's meeting) would now report directly to the Chief Operating Officer.

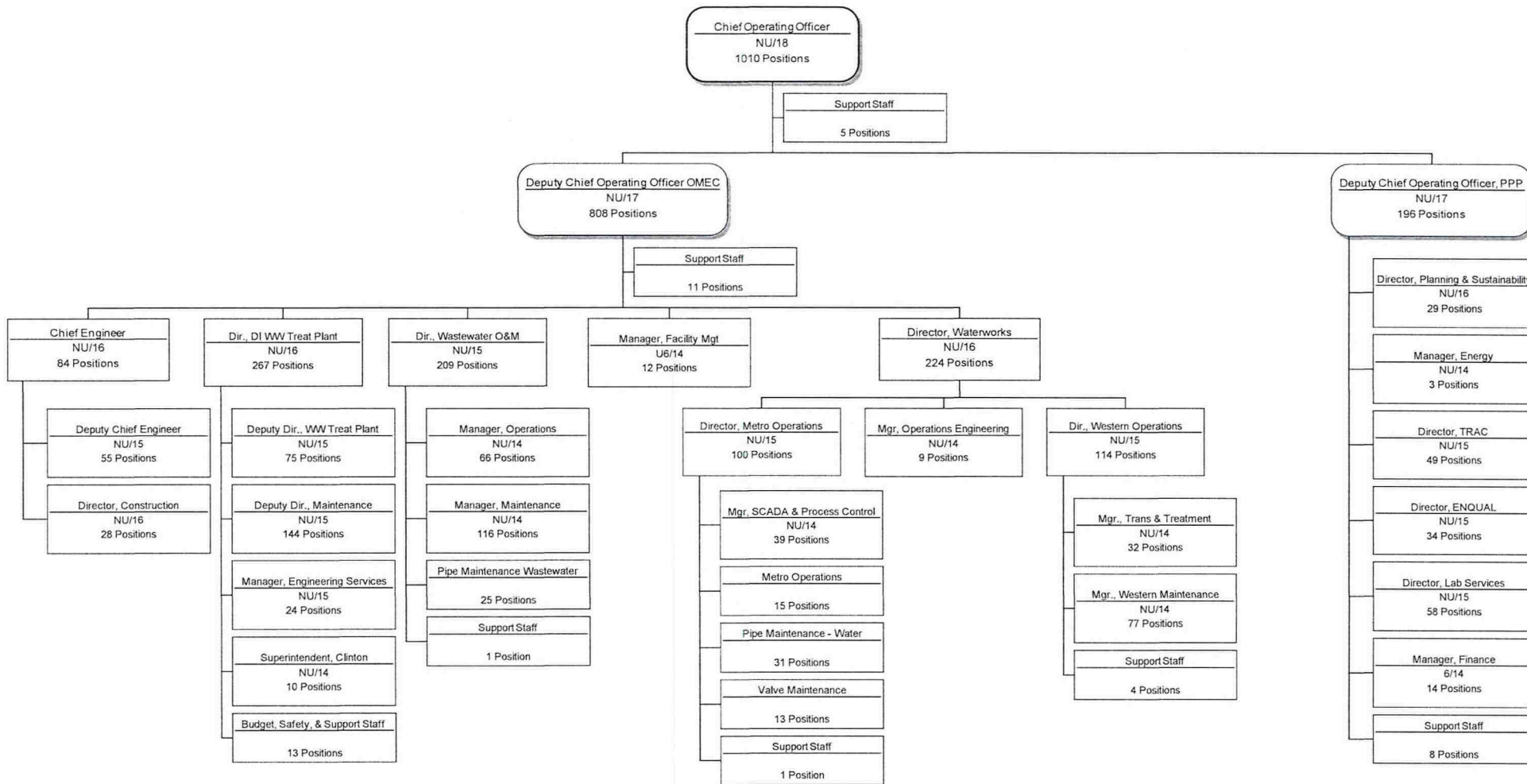
BUDGET/FISCAL IMPACTS:

The recommended organizational plan results in creation of a Non-union Grade 16 position and eventual elimination of a Non-union Grade 17 position. The new position will be filled internally through promotion. The final budgetary impact cannot be determined until after future decisions are made regarding backfills and subsequent promotions. However, it is likely that a net reduction in operating expenses will be realized.

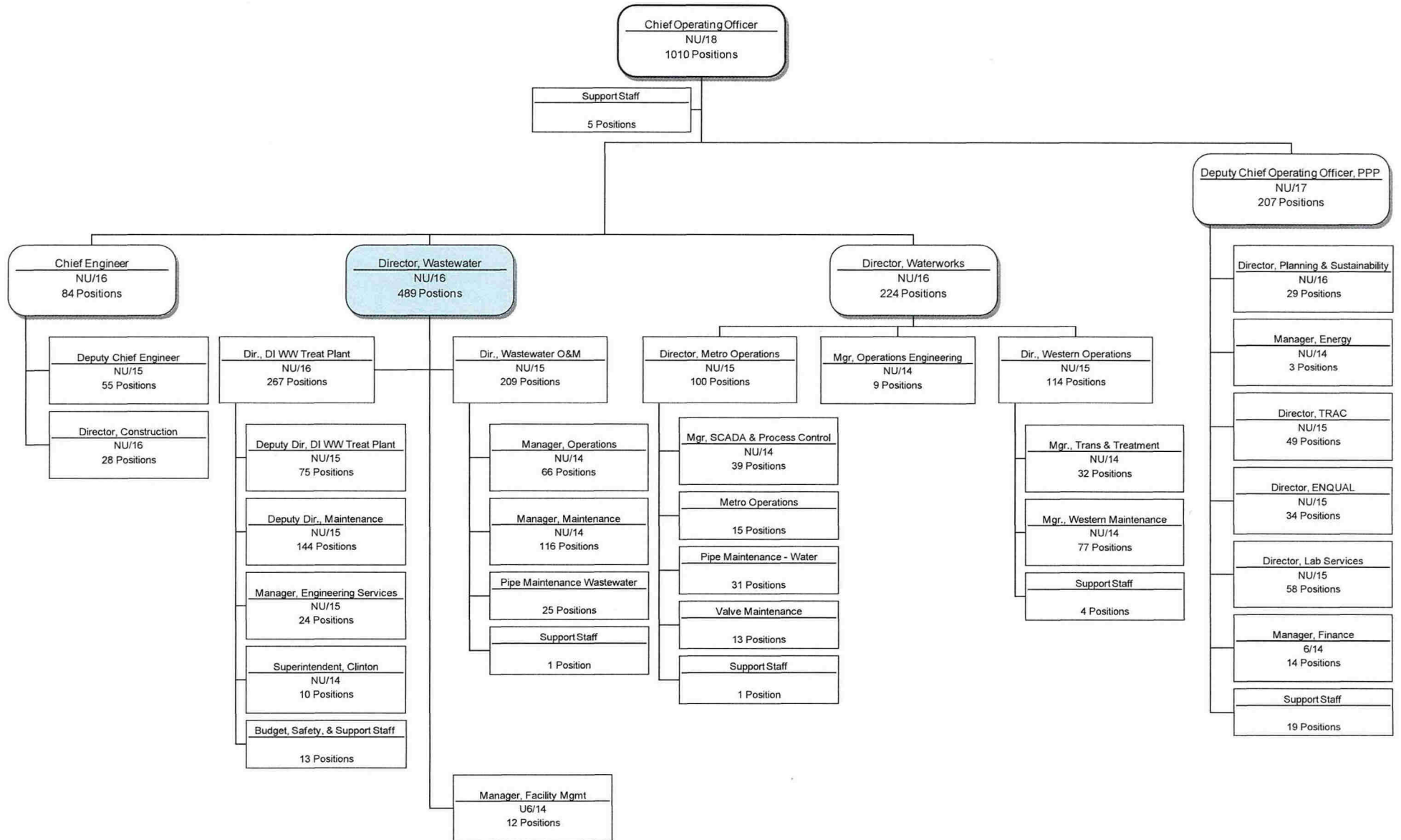
ATTACHMENT:

Current Organization Chart
Proposed Organization Chart

**Operations Division
Current Organization Chart
May 2018**

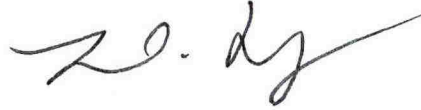


**Operations Division
Proposed Organization Chart
May 2018**



STAFF SUMMARY

TO: Board of Director
FROM: Frederick A Laskey, Executive Director
DATE: May 30, 2018
SUBJECT: May PCR Amendments



COMMITTEE: Personnel and Compensation


Karen Gay-Valente, Director of Human Resources
Preparer/Title

 INFORMATION

 X VOTE


Michele S. Gillen
Director, Administration

RECOMMENDATION:

To approve amendments to the Position Control Register (PCR) included in the attached chart.

DISCUSSION:

The Position Control Register lists all positions of the Authority, filled and vacant. It is updated as changes occur and it is published at the end of each month. Any changes to positions during the year are proposed as amendments to the PCR. All amendments to the PCR must be approved by the Personnel Committee of the Board of Directors. All amendments resulting in an upgrade of a position by more than one grade level, and/or an amendment which creates a position increasing annual cost by \$10,000 or more, must be approved by the Board of Directors after review by the Personnel Committee.

May PCR Amendments

There are four PCR amendments to reflect organizational changes in the Operations Division. The amendments reflect creating a new Director, Wastewater position and changing three existing laboratory supervisor positions as a result of a union settlement. There is a separate staff summary being presented at this Board meeting which reflects the reasons for creating the Director, Waterworks position.

Operations Organizational Changes

The amendments are:

1. To create a new position of Director, Wastewater, Non-Union, Grade 16 position.
2. Title and grade change to a vacant position in the Laboratory, Operations Division, Laboratory Supervisor, WQCHM, Unit 9, Grade 21, to Laboratory Supervisor II, Unit 9 Grade 23, as part of a union settlement.
3. Title and grade change to a filled position in the Laboratory, Operations Division, Laboratory Supervisor, Unit 9, Grade 21, to Laboratory Supervisor II, Unit 9 Grade 23, as part of a union settlement.

4. Title and grade change to a filled position in the Laboratory, Operations Division, Laboratory Supervisor II, Unit 9, Grade 23, to Laboratory Supervisor III, Unit 9 Grade 25, as part of a union settlement.

The four amendments require Board approval after review by the Personnel and Compensation Committee.

BUDGET/FISCAL IMPACT:

The annualized budget impact of this PCR amendment will range in cost of \$115,070 to a cost of \$193,831. The actual cost will depend on the salary rate for the new incumbents. Staff will ensure that the cost increase associated with these PCR amendments will not result in spending over the approved FY18 Wages and Salaries budget.

ATTACHMENTS:

Old Job Descriptions
New Job Descriptions

**MASSACHUSETTS WATER RESOURCES AUTHORITY
POSITION CONTROL REGISTER AMENDMENTS
FISCAL YEAR 2018**

PCR AMENDMENTS REQUIRING PERSONNEL & COMPENSATION COMMITTEE APPROVAL - May 30, 2018

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	
PERSONNEL & COMP COMMITTEE TOTAL=					0					SUBTOTAL:			\$0 - \$0	

PCR AMENDMENTS REQUIRING BOARD APPROVAL - May 2018

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	
B8	Operations	N/A	N/A	N/A	N/A	N/A	Director, Wastewater	NU	16	\$0	\$114,653 - \$168,114	\$114,653 - \$168,114	To create a new position due to upcoming retirement of the Deputy COO.	
B9	Operations ENQUAL 3370002	V	T, G	Laboratory Supervisor	9	21	Laboratory Supervisor II	9	23	86967	70129 - 95428.86	-\$16,838 - \$8,462	Union Settlement	
B10	Operations Laboratory Services 5710062	F	T, G	Laboratory Supervisor	9	21	Laboratory Supervisor II	9	23	\$86,967	\$95,429 - \$95,429	\$8,462 - \$8,462	Union Settlement	
B11	Operations Laboratory Services 5710011	F	T, G	Laboratory Supervisor II	9	23	Laboratory Supervisor III	9	25	\$95,429	\$104,222 - \$104,222	\$8,793 - \$8,793	Union Settlement	
BOARD TOTAL =					4					SUBTOTAL:			\$115,070 - \$193,831	
GRAND TOTAL =					4					TOTAL ESTIMATED COSTS:			\$115,070 - \$193,831	

**MWRA
POSITION DESCRIPTION**



POSITION: Director of Wastewater

DIVISION: Operations

DEPARTMENT: Wastewater

BASIC PURPOSE:

Directs, supervises, and manages staff responsible for the operation of the authority's wastewater infrastructure. Responsible for all local, state and federal regulations governing all discharges and water quality standards.

SUPERVISION RECEIVED:

Reports to the Chief Operating Officer.

SUPERVISION EXERCISED:

Exercises close supervision of the Director of Deer Island, the Director of Wastewater Operations and facility support staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Directs and manages the operation and maintenance of all wastewater collections, headworks, CSO, and pumping facilities; the Deer Island and Clinton Treatment Plants; the Fore River pellet plant; and support facilities to ensure compliance with all federal and state laws and regulations.
- Oversees maintenance of MWRA physical and plant wastewater and metropolitan assets. Develops and implements systems and programs that properly maintain the Authority's wastewater operating facilities and metropolitan facilities. Promotes a positive working environment of the workforce by maintaining an active "field" presence.
- Provides input and direction for the long-term planning, engineering and construction of modernizing, rehabilitating and upgrading of the Authority's wastewater facilities.

- Confers with consultants, local officials from member communities and state and federal officials on matters relating to operations and maintenance of the wastewater system.
- Reviews and evaluates managers' performance according to MWRA procedures.
- Participates with senior managers and Labor Relations staff in the development of collective bargaining strategies. Supports as needed the implementation of collective bargaining agreements. Fosters productive labor/management relationships.
- Works collegially with other MWRA divisions and departments to ensure the goals, objectives, and strategies of the MWRA business plan are achieved.
- Directs safety programs, strategic planning and policy development, employee involvement programs and supports MWRA-wide safety programs.
- Provides opportunities for technical, supervisory and managerial training and education for all department employees.
- Represents the Operations Division as required with the Authority's Division Directors, Executive Director and the Board of Directors.
- Acts as interagency liaison with regard to operations of Wastewater Facilities.

SECONDARY DUTIES:

- Performs other related duties as required

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) Bachelor's degree in sanitary, civil, environmental or mechanical engineering, business, management, or associated field; and
- (B) Detailed understanding of wastewater operations, plants and programs, operating and maintenance systems, and construction and engineering as acquired through twelve (12) to fifteen (15) years demonstrated success in progressively responsible management positions in operations, maintenance, engineering design, or technical planning relating to wastewater service delivery and major wastewater facilities; or

(C) Any equivalent combination of education and/or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Knowledge of principles and practices of engineering.
- (B) Expert familiarity and management competence in the planning, regulation, operation and maintenance of large wastewater collection and treatment facilities and associated systems and equipment.
- (C) Demonstrated analytical, writing and organization skills.
- (D) Ability to work with personnel at various organizational levels, to balance competing priorities and to manage personnel and resources as required.
- (E) Ability to provide technical leadership to subordinate employees, as well as the proven ability to inspire confidence customers and the general public.

SPECIAL REQUIREMENTS:

A valid Class D Massachusetts Motor Vehicle Operators License

Massachusetts Registered Professional Engineer or eligibility for acceptance by reciprocity desirable.

Massachusetts Wastewater Treatment Plant Operators license, Grade VII, or equivalent from another jurisdiction 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 fax machine.

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to sit, talk or hear. The employee is regularly required to use hands to finger, handle, feel or operate objects, including office equipment, or controls and reach with hands and arms. The employee frequently is required to stand and walk.

There are no requirements that weight be lifted or force be exerted in the performance of this job. Specific vision abilities required by this job include close vision, and the ability to adjust focus.

WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee regularly works in an office environment.

The noise level in the work environment is usually a moderately quiet office setting.

May 2018



**MWRA
POSITION DESCRIPTION**

POSITION: Laboratory Supervisor

DIVISION: Operations

DEPARTMENT: ENQUAL

BASIC PURPOSE:

Provides daily supervision for the Quality Assurance (QA) Section, Southboro Laboratory Facility and Field Sampling Program in the monitoring of water quality and water treatment.

SUPERVISION RECEIVED:

Works under the general supervision of the Program Manager, Quality Assurance.

SUPERVISION EXERCISED:

Exercises close supervision of six (6) laboratory/sampling staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Coordinates testing with Division of Laboratory Services as necessary. Coordinates sampling with other groups as may be required (communities, other MWRA departments).
- Supervises personnel assigned to laboratory/sampling duties.
- Trains personnel in proper laboratory/sampling procedures.
- Ensures field and laboratory data in WQ database. Validates data.
- Reviews lab results and reports.
- Ensures samples are collected per DEP compliance schedules, EPA monitoring programs and other programs.

- Maintains laboratory records, inventories and sampling/analysis schedules.

- Develops and updates appropriate Standard Operating Procedures.
- Recommends purchase of reagent chemicals and sampling/laboratory apparatus for QA programs.
- Evaluates new testing procedures and maintains a laboratory/sampling quality control program.
- Supervises and/or performs research projects related to water quality.
- Provides technical support to the QA Program Managers.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A four (4) year college program in chemistry, biology or related science; and
- (B) Four (4) to six (6) years experience in laboratory and/or field procedures for water and wastewater treatment analyses; or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Demonstrated analytical skills.
- (B) Ability to supervise assigned personnel.
- (C) Skills in the use of operation of the listed tools and equipment.

SPECIAL REQUIREMENTS:

A valid Massachusetts Class D Motor Vehicles Operators License.

TOOLS AND EQUIPMENT USED:

Laboratory equipment and instruments, 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 stand and walk. The employee is frequently required to sit; stoop, kneel, crouch, or crawl; taste or smell.

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, distance, color vision, peripheral vision, depth perception, and the ability to adjust focus.

WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee occasionally works in outside weather conditions. The employee occasionally works near moving mechanical parts and is occasionally exposed to the risk of radiation and vibration. The employee 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 moderately quiet in a laboratory environment.

May, 2001



MWRA
POSITION DESCRIPTION

POSITION: Laboratory Supervisor II

DIVISION: Operations

DEPARTMENT: Laboratory Services

BASIC PURPOSE:

Supervises the high quality, cost effective and timely performance of a range of moderately complex laboratory tasks in a manner that results in data of the highest integrity. Supervises special laboratory projects and studies as required.

SUPERVISION RECEIVED:

Works under the general supervision of the Laboratory Section Manager.

SUPERVISION EXERCISED:

Supervises from approximately four (4) to eight (8) chemists (up to level III), biologists, microbiologists (up to level II) and support staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Supervises personnel in the performance of a range of moderately complex laboratory analyses.
- Assures that all operations adhere to applicable Standard Operating Procedures (SOPs) and support established quality control programs. Approves new SOPs to reflect changes in work procedures and recommends Quality Assurance/Quality Control (QA/QC) standards for high data reliability.
- Plans and schedules analytical/test activities and special project requests, to meet commitments to client group.
- Evaluates, recommends, acquires and implements new procedures and equipment to support continuous efforts at reducing the cost of laboratory operations, and increasing service and analytical capability.
- Evaluates and recommends the need for contract laboratories to provide analyses in assigned areas, and may assist in managing contracts.

- Provides assistance to the Laboratory Section Manager for consultation to client groups, to assist in defining environmental problems; determine appropriate methodology and resources, and assess the significance of results and suggest possible solutions.
- Maintains equipment maintenance and calibration programs, including records, to assure proper operation and minimize downtime.
- Assures that assigned personnel maintain a current knowledge of environmental regulations in order to forecast MWRA research needs.
- Assures the validation of analytical data in accordance with QA/QC procedures.
- Assures the efficient maintenance of laboratory records in accordance with SOPs.
- Supervises the selection and utilization of statistical and graphical techniques, including computer modeling, appropriate to render data meaningful to users.
- Assures that all activities support the production of data of the highest integrity. Evaluates and recommends computer software, applications packages, and hardware for the efficient handling of analytical data.
- Assures that adequate laboratory equipment and supplies are available and recommends the purchase of equipment and supplies; prepares capital and operating budget recommendation.
- Assures the training of employees in laboratory, quality control, administrative, and safety procedures, and provides instruction as appropriate.
- Assures clean and safe working conditions in conjunction with the Safety Officer, and implements safety programs.
- Conducts employee performance reviews in accordance with MWRA procedures, and recommends hires, merit raises and promotions.
- Assists in maintaining harmonious labor management relations through application of collective bargaining agreement provisions and established personnel policies.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A bachelor's degree in Chemistry, Biology, or a related field is required; and

- (B) Five (5) to seven (7) years of related laboratory experience, including two (2) years in a supervisory capacity; or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) A comprehensive understanding of laboratory procedures and operations, research methodology and quality control procedures.
- (B) Specialized computer software, modeling, statistical techniques, and LIMS and project management techniques.
- (C) Requires excellent communications, interpersonal and management skills and the completion of the MWRA supervisory training program, or equivalent supervisory training.
- (D) Ability to follow oral and written instructions.
- (E) Ability to communicate and work well with others.

SPECIAL REQUIREMENTS:

A valid Class D Massachusetts Motor Vehicle Operators license or equivalent.

TOOLS AND EQUIPMENT USED:

Laboratory equipment and instruments, 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 duties.

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 and to talk and hear. The employee is occasionally required to walk, sit, climb, balance, stoop, kneel, crouch or crawl.

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move more than 25 pounds. Specific vision abilities required by this job include close vision, and the ability to adjust focus.

WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly works in a field/office environment. 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 the risk of electric shock.

The job is hearing protection required and the noise level in the work environment is very loud in field settings and moderately loud at treatment facilities.

May 2018



**MWRA
POSITION DESCRIPTION**

POSITION: Laboratory Supervisor

DIVISION: Operations

DEPARTMENT: Laboratory Services

BASIC PURPOSE:

Provides daily supervision for laboratory facilities to ensure maintenance of water quality and monitoring of water treatment.

SUPERVISION RECEIVED:

Works under the general supervision of the Laboratory Section Manager.

SUPERVISION EXERCISED:

Exercise supervision over a team that includes two (2) microbiologists I, a laboratory technician and a senior laboratory technician.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Supervises and performs a wide range of physical, chemical, bacterial and microbiological analyses in accordance with accepted methods.
- Recommends the purchase of laboratory supplies and equipment.
- Maintains laboratory records, inventories and analysis schedules.
- Evaluates testing procedures and maintains a quality control program.
- Supervises and/or performs research projects related to water quality.
- Communicates with and assists local water utility personnel in member communities.
- Participates in preparing for collective bargaining and hears Step-I grievances.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) Laboratory analytical skills as normally attained through a four (4) year college program in chemistry, biology or a related field is required; and
- (B) Knowledge of laboratory procedures and apparatus for water and wastewater treatment analysis as acquired through a six (6) to eight (8) years of experience with at least two (2) years in a supervisory capacity; or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Ability to follow oral and written instructions.
- (B) Ability to communicate and work well with others.

SPECIAL REQUIREMENTS:

A valid Massachusetts Motor Vehicle Operator's license.

TOOLS AND EQUIPMENT USED:

Office machines such as the telephone, personal computer 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 the essential duties.

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 and to talk and hear. The employee is occasionally required to walk, sit, climb, balance, stoop, kneel, crouch or crawl.

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move more than 25 pounds. Specific vision abilities required by this job include close, distance, color, 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 occasionally works in outside weather conditions. The employee occasionally works near moving mechanical parts and is occasionally exposed to the risk of radiation and vibration. The employee is occasionally exposed to fumes or airborne particles, toxic or caustic chemicals and risk of electric shock.

The noise level in the work area is usually loud in field settings and moderately quiet in a laboratory environment.

August, 1999



**MWRA
POSITION DESCRIPTION**

POSITION: Laboratory Supervisor II

DIVISION: Operations

DEPARTMENT: Laboratory Services

BASIC PURPOSE:

Supervises the high quality, cost effective and timely performance of a range of moderately complex laboratory tasks in a manner that results in data of the highest integrity. Supervises special laboratory projects and studies as required.

SUPERVISION RECEIVED:

Works under the general supervision of the Laboratory Section Manager.

SUPERVISION EXERCISED:

Supervises from approximately four (4) to eight (8) chemists (up to level III), biologists, microbiologists (up to level II) and support staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Supervises personnel in the performance of a range of moderately complex laboratory analyses.
- Assures that all operations adhere to applicable Standard Operating Procedures (SOPs) and support established quality control programs. Approves new SOPs to reflect changes in work procedures and recommends Quality Assurance/Quality Control (QA/QC) standards for high data reliability.
- Plans and schedules analytical/test activities and special project requests, to meet commitments to client group.
- Evaluates, recommends, acquires and implements new procedures and equipment to support continuous efforts at reducing the cost of laboratory operations, and increasing service and analytical capability.
- Evaluates and recommends the need for contract laboratories to provide analyses in assigned areas, and may assist in managing contracts.

- Provides assistance to the Laboratory Section Manager for consultation to client groups, to assist in defining environmental problems; determine appropriate methodology and resources, and assess the significance of results and suggest possible solutions.
- Maintains equipment maintenance and calibration programs, including records, to assure proper operation and minimize downtime.
- Assures that assigned personnel maintain a current knowledge of environmental regulations in order to forecast MWRA research needs.
- Assures the validation of analytical data in accordance with QA/QC procedures.
- Assures the efficient maintenance of laboratory records in accordance with SOPs.
- Supervises the selection and utilization of statistical and graphical techniques, including computer modeling, appropriate to render data meaningful to users.
- Assures that all activities support the production of data of the highest integrity. Evaluates and recommends computer software, applications packages, and hardware for the efficient handling of analytical data.
- Assures that adequate laboratory equipment and supplies are available and recommends the purchase of equipment and supplies; prepares capital and operating budget recommendation.
- Assures the training of employees in laboratory, quality control, administrative, and safety procedures, and provides instruction as appropriate.
- Assures clean and safe working conditions in conjunction with the Safety Officer, and implements safety programs.
- Conducts employee performance reviews in accordance with MWRA procedures, and recommends hires, merit raises and promotions.
- Assists in maintaining harmonious labor management relations through application of collective bargaining agreement provisions and established personnel policies.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A bachelor's degree in Chemistry, Biology, or a related field is required; and

- (B) Five (5) to seven (7) years of related laboratory experience, including two (2) years in a supervisory capacity; or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) A comprehensive understanding of laboratory procedures and operations, research methodology and quality control procedures.
- (B) Specialized computer software, modeling, statistical techniques, and LIMS and project management techniques.
- (C) Requires excellent communications, interpersonal and management skills and the completion of the MWRA supervisory training program, or equivalent supervisory training.
- (D) Ability to follow oral and written instructions.
- (E) Ability to communicate and work well with others.

SPECIAL REQUIREMENTS:

A valid Class D Massachusetts Motor Vehicle Operators license or equivalent.

TOOLS AND EQUIPMENT USED:

Laboratory equipment and instruments, 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 duties.

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 and to talk and hear. The employee is occasionally required to walk, sit, climb, balance, stoop, kneel, crouch or crawl.

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move more than 25 pounds. Specific vision abilities required by this job include close vision, and the ability to adjust focus.

WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly works in a field/office environment. 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 the risk of electric shock.

The job is hearing protection required and the noise level in the work environment is very loud in field settings and moderately loud at treatment facilities.

May 2018



**MWRA
POSITION DESCRIPTION**

POSITION: Laboratory Supervisor II

DIVISION: Operations

DEPARTMENT: Laboratory Services

BASIC PURPOSE:

Supervises the high quality, cost effective and timely performance of a range of moderately complex laboratory tasks in a manner that results in data of the highest integrity. Supervises special laboratory projects and studies as required.

SUPERVISION RECEIVED:

Works under the general supervision of the Laboratory Section Manager.

SUPERVISION EXERCISED:

Supervises from approximately four (4) to eight (8) chemists (up to level III), biologists, microbiologists (up to level II) and support staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Supervises personnel in the performance of a range of moderately complex laboratory analyses.
- Assures that all operations adhere to applicable Standard Operating Procedures (SOPs) and support established quality control programs. Approves new SOPs to reflect changes in work procedures and recommends Quality Assurance/Quality Control (QA/QC) standards for high data reliability.
- Plans and schedules analytical/test activities and special project requests, to meet commitments to client group.
- Evaluates, recommends, acquires and implements new procedures and equipment to support continuous efforts at reducing the cost of laboratory operations, and increasing service and analytical capability.
- Evaluates and recommends the need for contract laboratories to provide analyses in assigned areas, and may assist in managing contracts.

- Provides assistance to the Laboratory Section Manager for consultation to client groups, to assist in defining environmental problems; determine appropriate methodology and resources, and assess the significance of results and suggest possible solutions.
- Maintains equipment maintenance and calibration programs, including records, to assure proper operation and minimize downtime.
- Assures that assigned personnel maintain a current knowledge of environmental regulations in order to forecast MWRA research needs.
- Assures the validation of analytical data in accordance with QA/QC procedures.
- Assures the efficient maintenance of laboratory records in accordance with SOPs.
- Supervises the selection and utilization of statistical and graphical techniques, including computer modeling, appropriate to render data meaningful to users.
- Assures that all activities support the production of data of the highest integrity. Evaluates and recommends computer software, applications packages, and hardware for the efficient handling of analytical data.
- Assures that adequate laboratory equipment and supplies are available and recommends the purchase of equipment and supplies; prepares capital and operating budget recommendation.
- Assures the training of employees in laboratory, quality control, administrative, and safety procedures, and provides instruction as appropriate.
- Assures clean and safe working conditions in conjunction with the Safety Officer, and implements safety programs.
- Conducts employee performance reviews in accordance with MWRA procedures, and recommends hires, merit raises and promotions.
- Assists in maintaining harmonious labor management relations through application of collective bargaining agreement provisions and established personnel policies.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A bachelor's degree in Chemistry, Biology, or a related field is required; and

- (B) Five (5) to seven (7) years of related laboratory experience, including two (2) years in a supervisory capacity; or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) A comprehensive understanding of laboratory procedures and operations, research methodology and quality control procedures.
- (B) Specialized computer software, modeling, statistical techniques, and LIMS and project management techniques.
- (C) Requires excellent communications, interpersonal and management skills and the completion of the MWRA supervisory training program, or equivalent supervisory training.
- (D) Ability to follow oral and written instructions.
- (E) Ability to communicate and work well with others.

SPECIAL REQUIREMENTS:

A valid Class D Massachusetts Motor Vehicle Operators license or equivalent.

TOOLS AND EQUIPMENT USED:

Laboratory equipment and instruments, 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 duties.

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 and to talk and hear. The employee is occasionally required to walk, sit, climb, balance, stoop, kneel, crouch or crawl.

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move more than 25 pounds. Specific vision abilities required by this job include close vision, and the ability to adjust focus.

WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly works in a field/office environment. 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 the risk of electric shock.

The job is hearing protection required and the noise level in the work environment is very loud in field settings and moderately loud at treatment facilities.

March 2007

MWRA
POSITION DESCRIPTION

NEW

POSITION: Laboratory Supervisor III

DIVISION: Operations

DEPARTMENT: Laboratory Services

BASIC PURPOSE:

Supervises the high quality, cost-effective and timely performance of a broad range of the most complex laboratory tasks in a manner that results in data of the highest integrity. Supervises special laboratory projects and studies as required. Staff supervised may be in more than one laboratory location.

SUPERVISION RECEIVED:

Works under the general supervision of the Laboratory Section Manager.

SUPERVISION EXERCISED:

Supervises from approximately five (5) to fifteen (15) chemists (up to level III), biologists, microbiologists (up to level II) and support staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Supervises personnel in the performance of a broad range of the most complex laboratory analyses.
- Assures that all operations adhere to applicable Standing Operating Procedures (SOPs) and support established quality control programs. Approves new SOPs to reflect changes in work procedures and recommends Quality Assurance/Quality Control (QA/QC) standards for high data reliability.
- Plans and schedules analytical/ test activities and special requests to meet commitments to client groups.
- Evaluates, recommends, acquires and implements new procedures and equipment to support continuous efforts at reducing the cost of laboratory operations, and increasing service and analytical capability.
- Evaluates and recommends the need for contract laboratories to provide analyses in assigned areas and may assist in managing contracts.

- Provides assistance to the Laboratory Section Manager for consultation to client groups, to assist in defining environmental problems, determine appropriate methodology and resources, and assess the significance of results and suggest possible solutions.
- Maintains equipment maintenance and calibration programs, including records to assure proper operation and minimize downtime.
- Assures that assigned personnel maintain a current knowledge of environmental regulations in order to forecast MWRA research needs.
- Assures the validation of analytical data in accordance with QA/QC procedures.
- Assures the efficient maintenance of laboratory records in accordance with SOPs.
- Supervises the selection and utilization of statistical and graphical techniques, including computer modeling, appropriate to render data meaningful to users.
- Assures that all activities support the production of data of the highest integrity. Evaluates and recommends computer software, applications packages, and hardware for the efficient handling of analytical data.
- Assures that adequate laboratory equipment and supplies are available and recommends the purchase of equipment and supplies; prepares capital and operating budget recommendation.
- Assures the training of employees in laboratory, quality control, administrative, and safety procedures, and provides instruction as appropriate.
- Assures clean and safe working conditions in conjunction with the Safety Officer, and implements safety programs.
- Conducts employee performance reviews in accordance with MWRA procedures, and recommends hires, merit raises and promotions.
- Assists in maintaining harmonious labor management relations through application of collective bargaining agreement provisions and established personnel policies.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A bachelor's degree in Chemistry, Biology or a related field is required. A masters degree is preferred; and
- (B) Six (6) to eight (8) years of related Laboratory experience including two (2) years in a supervisory capacity; or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) A comprehensive understanding of laboratory procedures and operations, research methodology and quality control procedures.
- (B) Specialized computer software, modeling, statistical techniques, and LIMS and project management techniques.
- (C) Requires excellent communications, interpersonal and management skills and the completion of the MWRA supervisory training program, or equivalent supervisory training.
- (D) Ability to follow oral and written instructions.
- (E) Ability to communicate and work well with others.

SPECIAL REQUIREMENTS:

A valid Massachusetts Class D Motor Vehicle Operators License.

TOOLS AND EQUIPMENT USED:

Laboratory equipment and instruments, 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 duties.

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 and to talk and hear. The employee is occasionally required to walk, sit, climb, 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 more than 25 pounds. Specific vision abilities required by this job include close vision, and the ability to adjust focus.

WORK ENVIRONMENT:


The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly works in a field/office environment. 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 the risk of electric shock.

The job is hearing protection required and the noise level in the work environment is very loud in field settings and moderately loud at treatment facilities.

May 2018

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: May 30, 2018
SUBJECT: Appointment of Superintendent, Clinton Advanced Wastewater Treatment Plant Operations Division

COMMITTEE: Personnel & Compensation

INFORMATION
 VOTE

Karen Gay-Valente, Director, Human Resources
John P. Vetere, Deputy Chief Operating Officer
David F. Duest, Director, DIWWTP
Preparer/Title


David W Coppes, P.E.
Chief Operating Officer

RECOMMENDATION:

To approve the appointment of Mr. Larry Thomas to the position of Superintendent at the Clinton Advanced Wastewater Treatment Plant (Non-Union, Grade 14), at an annual salary of \$120,000, commencing on a date to be determined by the Executive Director.

DISCUSSION:

The impending retirement of the incumbent will result in a vacancy in the Superintendent's position. This position is responsible for all operations and maintenance of the Clinton plant and landfill operation, permit compliance, staffing, plant staff training and safety program, and the plant's \$2.3 million operating budget. The position also is currently overseeing the completion of construction of a \$7.6 million phosphorus reduction facility. In the near future, the position will be responsible for optimization of the completed phosphorus reduction facility which will be used to comply with new stricter total phosphorus limits, which become effective in April 2019. The Superintendent of the Clinton plant reports to the Director of Deer Island.

Selection Process:

The position of Superintendent, Clinton Advanced Wastewater Treatment Plant was posted internally and externally. Eight candidates, six internal and two external, met the minimum qualifications of the job description and were referred for interviews. The Deputy Chief Operating Officer, the Director of Deer Island, and the Special Assistant for Affirmative Action conducted the interviews. Two rounds of interviews were conducted, and three candidates were chosen for second interviews. Mr. Larry Thomas was selected as the most qualified candidate for the Superintendent's position based on his knowledge and experience.

Mr. Thomas started at MWRA at the Deer Island Treatment Plant as a Diesel Power Plant Operator, then as an Operator, acting Area Supervisor and finally as a Field Training Specialist where he developed job aids and Standard Operating Procedures (“SOP”) for the operational staff. Mr. Thomas was a trained facilitator in the maintenance program on Reliability Centered Maintenance and helped streamline a number of maintenance procedures on many critical systems on Deer Island. Mr. Thomas extended his SOP writing to Clinton, helping to document procedures at the plant. Mr. Thomas was able to demonstrate significant maintenance knowledge as a result.

Mr. Larry Thomas has 29 years of experience in wastewater treatment. He is currently an Area Supervisor at the Clinton plant and possesses extensive knowledge of the plant’s operation, equipment and processes. He has been at the Clinton plant for over 15 years. He demonstrated significant institutional knowledge about the plant and advanced wastewater treatment (nitrogen and phosphorus removal) as utilized at the Clinton plant during both interviews. Mr. Thomas has been instrumental in the successful operation of the plant and has helped the department achieve several Gold and Silver NACWA awards for peak plant performance. He has also been involved in the successful startup of the new phosphorus treatment facility at Clinton.

Mr. Thomas holds a Grade 7 Wastewater Operator’s License from the Commonwealth of Massachusetts’ Department of Environmental Protection. In addition, he maintains a commercial driver’s license and has successfully completed over two years of coursework at Fitchburg State College. He is an instructor at the Peterson School where he trains future wastewater treatment plant operators.

BUDGET/FISCAL IMPACT:

There are sufficient funds for this position in the FY18 Current Expense Budget.

ATTACHMENTS:

Resume of Mr. Larry Thomas
Position Description
Organization Chart

Larry D. Thomas

Professional Profile:

I am an industrious, efficient, and effective team player, accustomed to flexible work environments. The ideal position will require use of communication, interpersonal and mechanical skills as well as problem solving ability. Performance will be measured with clear objectives. Success will be rewarded with increased responsibilities and compensation.

Work Experience:

Massachusetts Water Resources Authority 1989–Present

The Wastewater Operations Group is responsible for the twenty-four hour, seven day a week operations of two treatment plants. The Deer Island Treatment Plant has a primary treatment peak capacity of 1.27 Billion Gallons per day (BGD) and a secondary treatment set point of 700 Million Gallons per day (MGD) The Clinton Advanced Waste Water Treatment Plant is a 3.01 MGD facility providing secondary treatment using an activated sludge process in combination with advanced nutrient removal and dechlorination. The major facilities include headworks, primary settling tanks, digesters, sludge processing, trickling filters, aeration tanks, secondary clarifier tanks, a chemical addition building and a Phosphorus Reduction Facility offering tertiary treatment .

Area Supervisor, Clinton Advanced Wastewater Treatment Plant (16- Present. Acting Area Supervisor 10-11, 13-14)

- Monitors and inspects operating conditions, records observations and data in Excel spreadsheets.
- Samples various processes, performs analysis according to schedule, recording results, and implementing changes as necessary.
- Provides oversight for chemical and fuel oil unloading to tank farm. As necessary, makes revisions to Standard Operating Procedures to ensure safe transfer of chemicals.
- Takes initial action to correct malfunctions of equipment. Inspects and troubleshoots mechanical, electromechanical, pneumatic or hydraulic equipment using tools and gauges of the trade.
- Operation of the Clinton facility on weekends and holidays.
- Covers operation of the Clinton facility in the event of emergency and high flow/ storm conditions.
- Maintains process data and prepares monthly reports for Solids Retention Time in the Aeration Tanks, Digester Performance reports, and Belt Filter Press performance data for optimization using Excel spreadsheets. Updates Yellow and Orange Notebooks.
- Performs microscopic examination of secondary treatment processes and, combined with analysis of operating data, makes process control recommendations to the Plant Superintendent.

Operator, Deer Island Treatment Plant, Clinton AWWTP (03- 16)

- Operated equipment manually and through instrument panel and programmable logic control units, system flows and levels in assigned process area. Equipment may include, but will not be limited to the following; pumps, valves, gates, meters, gauges, controllers, motor control centers, level controls devices, mixers, oxygen generation, chemical feed, odor control and hydroelectric equipment.
- Monitored and inspected operating conditions; recorded observations and data in area shift log.
- Provided oversight for chemical and fuel oil unloading to tank farm.
- Took initial action to correct malfunctions of equipment and reported malfunctions and variances to the Area Supervisor.
- Sampled various process fluids and gases (odor control), analyzes, records, and labels according to schedule

Field Training Specialist, DITP

(97-03)

- Assisted Deer Island Training Manager to improve the skill levels and productivity of the MWRA workforce and to improve the MWRA work environment.

- Developed Technical and Professional Training Programs to develop DITP Staff on professional and job-specific skills as well as important MWRA policies and procedures
- Wrote and published four Work Station Pocket Guides (Cryogenic Plant, North Main Pumping Station, Centrifuge Facility and Gas Handling Facility) using PageMaker and Photoshop.
- Developed and taught DITP Cryogenic Air Separation Plant Operator Training.
- Developed and taught Wastewater License Training for basic, intermediate and advance level operators and maintenance personnel.
- Developed pilot manual for MWRA On the Job Training (OJT) programs for Operations and Maintenance Department staffs.
- Verified established Standard Operating procedures throughout DITP.

Pilot Plant Operator, DITP

(95-97)

- Operated DITP 2 MGD Pure Oxygen Activated Sludge Pilot Plant.
- Performed laboratory analysis and process control tests, such as Chemical Oxygen demand (COD), Total Suspended Solids (TSS), Dissolved Oxygen (DO) and Oxygen Uptake.
- Assisted in research and development of practices and procedures for the full buildup of the advanced activated sludge process at DITP.
- Trained over 50 supervisors, operators, maintenance, and other support staff in the principles of secondary wastewater treatment.

Power and Pumping Plant Operating engineer (PPPOE) DITP

(92 -95)

- Supervised four Diesel Power Plant Operators.
- Monitored 32 MW diesel electric power generating plant, related switchgear, low pressure steam plant, and related auxiliary equipment.
- Created work orders and other documentation to support system maintenance on assigned equipment.

Diesel Power Plant Operator DITP

(89 -92)

- Operated and monitored Nordburg Radial Diesel driven wastewater pumps, electric driven wastewater pumps, 6,000 KW diesel driven generators, low pressure boilers, as well as a variety of pumps, compressors, valves, and piping systems. Assisted PPPOE as required.

Instructor

(98-present)

Industrial Wastewater Treatment. Peterson School, Woburn & Westbrook Campus

Education and Licenses:

Fitchburg State College 1996 -2003 Occupational Education
 MA Grade 7C Wastewater Treatment Plant Operator's License
 NEWEA Collections Systems Operator Grade II

**MWRA
POSITION DESCRIPTION**

POSITION: Superintendent, Clinton
PCR#: 2910001
DIVISION: Operations
DEPARTMENT: Clinton Advanced Wastewater Treatment Plant

BASIC PURPOSE:

Plans and directs all administrative and operating aspects of a major metropolitan sewage treatment plant. Has responsibilities for an operating budget over \$1 million.

SUPERVISION RECEIVED:

Works under the supervision of the Director, DIWWTP.

SUPERVISION EXERCISED:

Exercise close supervision a staff of professional with managerial, administrative and operating responsibilities. Supervises through subordinates a staff of approximately eight (8) employees, who perform technical, manual and clerical duties.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Establishes operating policies and procedures for the operation and maintenance of the treatment plant.
- Analyzes and directs plant operations through view of logs, laboratory reports and personal observation.
- Prepares plans, specifications and cost estimates of maintenance, repair, construction and alteration projects.
- Directs through subordinates the training of plant personnel in operating, maintenance, health and safety program.
- Prepares budgets, reports, plans and specifications for changes in structures or equipment related to the treatment plant.
- Approves requisitions for material and equipment.

- Confers with local, state and federal officials and visiting professionals on matters relating to treatment plant operations.
- Implements training for start-up of any new treatment facilities at Clinton.
- Assesses construction impacts on a day-to-day operation and various construction schedules for compliance with court orders goals.
- Participates in preparing for collective bargaining and hears Step One grievances.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) Knowledge of engineering and analytical principles and practices as normally attained through a four (4) year college program in civil engineering or related field; and
- (B) Understanding of the principles of construction, operation and maintenance of sewage treatment plants as acquired by eight (8) to ten (10) years with at least four (4) years in a supervisory capacity in a Grade 7 type wastewater treatment facility; or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Knowledge of Federal and State laws and regulations relative to wastewater treatment required.
- (B) Excellent administrative, interpersonal, management and written and oral communication skills required.

SPECIAL REQUIREMENTS:

A valid Massachusetts Class D Motor Vehicle Operators license required.

A Grade VII Wastewater Treatment Facilities Operators license is 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 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 duties.

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 regularly required to stand and walk. The employee is frequently required to sit and talk or hear.

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move more than 50 pounds. Specific vision abilities required by this job include close, distance, color and peripheral vision, depth perception, and the ability to adjust focus.

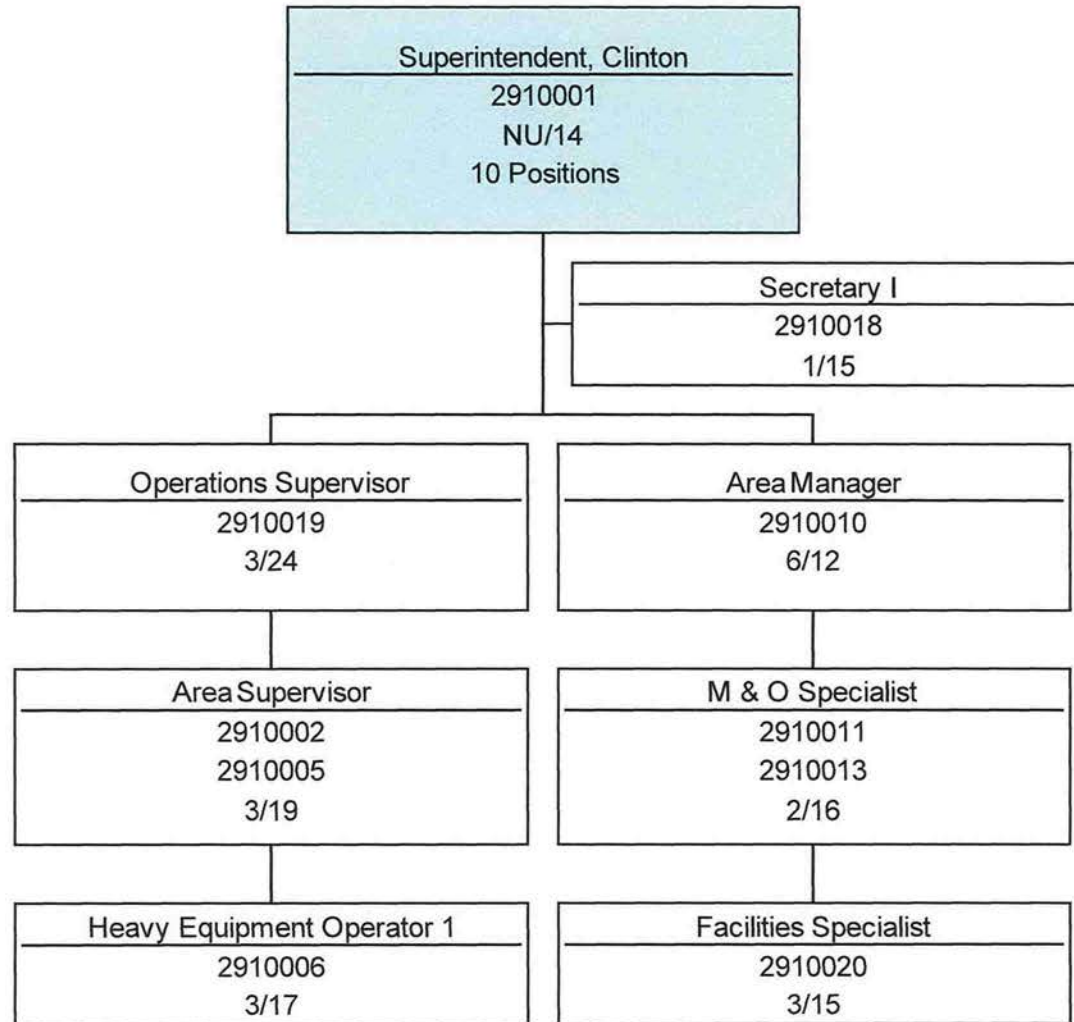
WORK ENVIRONMENT:

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 an office environment.

The noise level in the work environment is a moderately quiet office setting.

September 2014

Operations- Wastewater Treatment
Clinton Wastewater Treatment Plant
May 2018



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: May 30, 2018
SUBJECT: FY19 Non-Union Compensation



COMMITTEE: Personnel and Compensation

 INFORMATION
 X VOTE

RECOMMENDATION:

That the Board of Directors take the following actions for MWRA's FY19 non-union compensation review:

Authorize the Executive Director to implement a 3% across-the-board compensation adjustment for non-union managers effective with the first FY19 payroll; and

Approve a revision to the non-union salary ranges for FY19 presented in Attachment A and filed with the records of the meeting.

DISCUSSION:

Under this proposal, there are 62 non-union managers who will be eligible for a compensation adjustment. This adjustment is intended to provide appropriate compensation to non-union managers who receive fewer benefits than union employees including annual step increases, longevity payments, sick leave buy back and subsidized parking (CNY only). Additionally, additional compensation was added to the top step of the union classification structures in the recently negotiated Collective Bargaining Agreements.

The salary adjustments will be provided to all non-union managers on the payroll as of June 30, 2018. These adjustments do not include the Executive Director, or the Director Tunnel Redundancy Program (start date June 4, 2018) who have individual employment contracts.

BUDGET/FISCAL IMPACTS:

These adjustments for non-union managers result in a total annual cost of approximately \$258,855 for FY19.

ATTACHMENTS:


FY19 Proposed Non-Union Salary Ranges

ATTACHMENT A

FY19 Proposed Non-Union Salary Ranges effective July 1, 2018

Grade	Minimum	Maximum
13	\$82,869	\$128,883
14	\$93,254	\$141,723
15	\$104,980	\$156,879
16	\$118,093	\$173,157
17	\$132,909	\$186,399
18	\$133,843	\$254,935



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: May 30, 2018
SUBJECT: Authority Accountability and Transparency Act Compliance

COMMITTEE: Personnel and Compensation

X INFORMATION
 VOTE


Karen Gay-Valente, Director, Human Resources
Preparer/Title


Michele S. Gillen
Director, Administration

Steven A. Remsburg
General Counsel

As required by the 2011 Authority Accountability and Transparency Act, the Personnel and Compensation Committee must meet independently of management at least once a year to establish and evaluate executive compensation, and analyze and assess comparable compensation for positions with similar functions and responsibilities at state agencies and authorities, and for-profit and non-profit private sector employers. This meeting will occur at the end of the May 30, 2018 Personnel and Compensation meeting. Analyses of comparable salaries are attached to facilitate the Committee's review.

RECOMMENDATION:

For information only.

DISCUSSION:

The Authority Accountability and Transparency Act (G.L. c. 29, §29K) became law in July 2011 and required the Executive Office for Administration and Finance (A&F) to adopt regulations governing accountability and transparency for state authorities. As applicable to MWRA, the statute requires the Board to review executive compensation based on an analysis of comparable public and private-sector compensation; and to prepare an annual report of all Authority expenditures including disclosure of salaries of highly compensated employees who earn more than the Governor's salary. It also prohibits the Commonwealth from subsidizing the health insurance, pension, and other post-employment benefits of employees and retirees of authorities that participate in the state retirement system or the Group Insurance Commission. A&F filed interim emergency regulations in July 2011, and in 2013, A&F promulgated the permanent regulation.

The final regulation:

- Defines the statutory term “executive” as the authority's chief executive officer, chief financial officer, general counsel and others as determined by the authority's compensation committee.
- Defines “highly compensated employees,” whose compensation is reported in the annual financial report, as those whose salary exceeds that of the Governor.
- Defines “meet independently of management” to exclude authority managers from statutorily required meetings of the authority's audit and compensation committees.
- Implements the benefits anti-subsidy statute, by requiring each state authority that participate in the state retirement system or the Group Insurance Commission to:
 - contribute the employer share of the cost attributable to that authority of the state retirement system (as determined by the PERAC actuary), and of the state group insurance system (as determined by the GIC);
 - be responsible for the full actuarial value of its liabilities as determined no less often than every 3 years by PERAC and the GIC after consulting A&F, the state Treasurer, and the State Board of Retirement.

At the April 2012 meeting, the Board took several steps in order to comply with the Transparency Act and the emergency regulations: the Board created the Administration, Finance and Audit Committee, as well as the Personnel and Compensation Committee; made adjustments to the sick leave buy back for executives; and made certain minor adjustments to existing employment contracts. At the April 2012, May 2013, May 2014, May 2015, May 2016, and May 2017 meetings, the Personnel and Compensation Committee met independently of management as required by the regulations. As a result of these actions, MWRA is in compliance with the permanent regulations and Transparency Act. Neither MWRA Board members nor the Administration, Finance and Audit Committee are required to meet independently with respect to the audited financials of the Authority because the statute carves out an exception for state authorities that are otherwise required to retain an outside independent audit firm.

In order to remain in compliance with the statute's requirements, staff recommend that the Personnel and Compensation Committee meet independently of management at the May 30, 2018 meeting. In order to facilitate the committee's review, analyses of comparable salaries are included with this staff summary.

BUDGET/FISCAL IMPACT:

The passage and implementation of section 29K of chapter 29 of the General Laws will not have any impact upon either the FY18 CEB or CIP.

ATTACHMENTS:

- Attachment A: Summary of Compensation Data for State Agencies, Authorities, Non-Profit Organizations and Private Companies
- Attachment B: Survey of Comparable National Water/Wastewater Utilities
- Attachment C: American Water Works Association – 2017 Water Utility Survey

Attachment A

Summary of Compensation Data for State Agencies, Authorities, Non-Profit and Private Companies

May 2018

MWRA Position:		Executive Director		
Organization	Sector	Title	Reporting Period	Annual Salary
Eversource Energy	Private Utility	President and CEO	2018	\$1,230,694
Citizens Energy, Inc.	Non-Profit	President and CEO	2016	\$681,937
Boston Foundation, Inc.	Non-Profit	President and CEO	2016	\$618,904
Greater Boston Food Bank, Inc.	Non-Profit	President and CEO	2018	\$353,673
City Year, Inc.	Non-Profit	President	2016	\$327,363
MBTA	State	General Manager	2018	\$320,000
Mass Port Authority	Quasi Public	Chief Executive Officer	2018	\$289,171
Mass Convention Center Authority	Quasi Public	Executive Director	2018	\$240,011
Mass Housing Partnership	Quasi Public	Executive Director	2018	\$238,900
Commonwealth Health Insurance Connector Authority	Quasi Public	Executive Director	2018	\$224,896
MWRA	Quasi Public	Executive Director	2018	\$189,222
Commonwealth of Massachusetts	State	State Auditor	2018	\$165,000
Mass Department of Revenue	State	Commissioner of Revenue	2018	\$158,000
Save the Harbor/Save the Bay	Non-Profit	President	2016	\$152,395
Commonwealth of Massachusetts	State	Governor	2018	\$151,800
Commonwealth of Massachusetts	State	Secretary of State	2018	\$150,400
Commonwealth of Massachusetts	State	Attorney General	2018	\$136,054
Commonwealth of Massachusetts	State	Treasurer	2018	\$133,277
Boston Harbor Now (formerly Boston Harbor Association)	Non-Profit	President	2016	\$132,464
Conservation Law Foundation	Non-Profit	President	2015	\$129,154

Attachment A

Summary of Compensation Data for State Agencies, Authorities, Non-Profit and Private Companies

May 2018

MWRA Position:		Chief Operating Officer		
Organization	Sector	Title	Reporting Period	Annual Salary
Eversource Energy	Private Utility	Executive Vice President/COO	2018	\$634,078
Citizens Energy, Inc.	Non-Profit	Chief Executive Officer	2016	\$587,662
Mass Port Authority	Quasi Public	Director, Capitol Programs & Environmental Affairs	2018	\$267,803
City Year, Inc.	Non-Profit	Chief Operating Officer	2016	\$257,385
Greater Boston Food Bank, Inc.	Non-Profit	Chief Operating Officer and VP of Food Distribution	2018	\$249,018
Mass Housing Partnership	Quasi Public	Managing Director	2018	\$200,000
Commonwealth Health Insurance Connector Authority	Quasi Public	Deputy Executive Director and COO	2018	\$199,745
MBTA	State	Acting Chief Operating Officer	2018	\$185,000
MWRA	Quasi Public	Chief Operating Officer	2018	\$180,622

MWRA Position:		Director, Finance		
Organization	Sector	Title	Reporting Period	Annual Salary
Eversource Energy	Private Utility	Executive Vice President & CFO	2018	\$613,847
Citizens Energy, Inc.	Non-Profit	CFO	2016	\$388,992
Boston Foundation, Inc.	Non-Profit	Chief Financial Officer/Treasurer	2016	\$315,776
Mass Port Authority	Quasi Public	Director, Admin & Finance/Sec-Treasurer	2018	\$282,834
City Year, Inc.	Non-Profit	Chief Financial Officer	2016	\$258,569
Greater Boston Food Bank, Inc.	Non-Profit	Chief Financial Officer	2018	\$217,857
MBTA	State	Deputy General Manager/CFO	2018	\$210,000
Mass Housing Partnership	Quasi Public	Chief Finance & Admin Officer	2018	\$181,500
Mass Convention Center Authority	Quasi Public	Chief Financial Officer	2018	\$170,019
Commonwealth Health Insurance Connector Authority	Quasi Public	Chief Financial Officer	2018	\$163,199
MWRA	Quasi Public	Director, Finance	2018	\$161,592
Conservation Law Foundation	Non-Profit	Vice President, Finance and Admin	2016	\$89,308

Attachment A

Summary of Compensation Data for State Agencies, Authorities, Non-Profit and Private Companies

May 2018

MWRA Position:		General Counsel		
Organization	Sector	Title	Reporting Period	Annual Salary
Eversource Energy	Private Utility	General Counsel	2018	\$597,886
Mass Housing Partnership	Quasi Public	Deputy Director & General Counsel	2018	\$200,200
Mass Port Authority	Quasi Public	Chief Legal Counsel	2018	\$200,000
Commonwealth Health Insurance Connector Authority	Quasi Public	General Counsel	2018	\$190,011
Mass Convention Center Authority	Quasi Public	General Counsel	2018	\$170,019
Conservation Law Foundation	Non-Profit	Sr Counsel	2016	\$169,699
MBTA	State	General Counsel	2018	\$160,472
MWRA	Quasi Public	General Counsel	2018	\$159,775
Mass Department of Revenue	State	General Counsel	2018	\$155,193

Executive Director										
Organization	Location	Operating Budget	# Employees	Population Served	Title	Base Salary	Car Allowance	Deferred Comp	2017 Bonus	Employment Contract
Fairfax Water	Fairfax, VA	170 Million	445	2.5 million	General Manager	\$283,000	\$5,048		12,500	No
Metropolitan Water District of Southern California	Los Angeles, CA	1.6 Billion	1,725	19 million	General Manager	\$390,499	car provided			Yes
Washington Suburban Sanitary Commission	Laurel, MD	741.2 Million	1,639	1.8 million	General Manager/CEO	\$261,414	\$12,000	\$24,000		Yes
Seattle Public Utilities	Seattle, WA	873.6 Million	1,279	1.3 million	General Manager/CEO	\$287,701				No
East Bay Municipal Utility District	Oakland, CA	547 Million	2,011	1.4 Million	General Manager	\$299,304	\$6,000	\$24,000		Yes
					Average Salary	\$304,384				
MWRA					MWRA Executive Director	\$189,200	\$8,400			Yes

Chief Operating Officer										
Organization	Location	Operating Budget	# Employees	Population Served	Title	Base Salary	Car Allowance	Deferred Comp	2017 Bonus	Employment Contract
Fairfax Water	Fairfax, VA	170 Million	445	2.5 million	Deputy General Manager	\$246,000	\$5,494		12,500	No
Metropolitan Water District of Southern California	Los Angeles, CA	1.6 Billion	1,725	19 million	Assistant GM/ Chief Operating Officer	\$285,002	\$8,400			No
Washington Suburban Sanitary Commission	Laurel, MD	741.2 Million	1,639	1.8 million	Deputy GM for Operations	\$220,000	\$5,000			Yes
Seattle Public Utilities	Seattle, WA	873.6 Million	1,279	1.3 million	Deputy Director, Field Operations	\$199,592				No
East Bay Municipal Utility District	Oakland, CA	547 Million	2,011	1.4 Million	Director, Ops & Maint	\$245,184			\$13,485	No
					Average Salary	\$239,156				
MWRA					MWRA Chief Operating Officer	\$180,600	\$8,400			No

Director Finance										
Organization	Location	Operating Budget	# Employees	Population Served	Title	Base Salary	Car Allowance	Deferred Comp	2017 Bonus	Employment Contract
Fairfax Water	Fairfax, VA	170 Million	445	2.5 million	Director, Finance	\$205,573				No
Metropolitan Water District of Southern California	Los Angeles, CA	1.6 Billion	1,725	19 million	Assistant GM/Chief Financial Officer	\$301,558	\$700			No
Washington Suburban Sanitary Commission	Laurel, MD	741.2 Million	1,639	1.8 million	Chief Financial Officer	\$202,107	\$2,990			Yes
Seattle Public Utilities	Seattle, WA	873.6 Million	1,279	1.3 million	Deputy Director, Finance & Admin	\$154,836				No
East Bay Municipal Utility District	Oakland, CA	547 Million	2,011	1.4 Million	Director, Finance	\$203,064				No
					Average Salary	\$213,427				
MWRA					MWRA Director, Finance	\$162,000				No

General Counsel										
Organization	Location	Operating Budget	# Employees	Population Served	Title	Base Salary	Car Allowance	Deferred Comp	2017 Bonus	Employment Contract
Fairfax Water	Fairfax, Virginia	170 Million	445	2.5 million	No Match					
Metropolitan Water District of Southern California	Los Angeles, Ca	1.6 Billion	1725	19 million	General Counsel	\$287,498	\$700			No
Washington Suburban Sanitary Commission	Laurel, MD	741.2 Million	1639	1.8 million	General Counsel	\$167,475	\$2,990			Yes
Seattle Public Utilities	Seattle, WA	873.6 Million	1279	1.3 million	No Match (uses city legal services)					
East Bay Municipal Utility District	Oakland, Ca	547 Million	2011	1.4 Million	General Counsel	\$252,312				Yes
					Average Salary	\$235,762				
MWRA					MWRA General Counsel	\$159,775				No

Survey Position:	Top Executive			
MWRA Position:	Executive Director			
Survey Scope:	ALL utilities serving a population in excess of 1,000,000			
	# of Utilities	# of Employees	50th Percentile Salary	Average Salary
	25	26	\$192,617	\$232,859
	MWRA Salary			
	\$189,200			
Survey Scope:	All <u>water</u> utilities serving a population in excess of 1,000,000			
	# of Utilities	# of Employees	50th Percentile Salary	Average Salary
	9	12	\$161,900	\$183,571
	MWRA Salary			
	\$189,200			
Survey Scope:	All <u>water/wastewater</u> utilities serving a population in excess of 1,000,000			
	# of Utilities	# of Employees	50th Percentile Salary	Average Salary
	16	14	\$226,000	\$264,543
	MWRA Salary			
	\$189,200			

Survey Position:	Top Operations and Maintenance Executive			
MWRA Position:	Chief Operating Officer			
Survey Scope:	ALL utilities serving a population in excess of 1,000,000			
	# of Utilities	# of Employees	50th Percentile Salary	Average Salary
	24	26	\$167,799	\$178,800
	MWRA Salary			
	\$180,600			
Survey Scope:	All <u>water</u> utilities serving a population in excess of 1,000,000			
	# of Utilities	# of Employees	50th Percentile Salary	Average Salary
	8	8	\$162,000	\$167,820
	MWRA Salary			
	\$180,600			
Survey Scope:	All <u>water/wastewater</u> utilities serving a population in excess of 1,000,000			
	# of Utilities	# of Employees	50th Percentile Salary	Average Salary
	16	18	\$177,943	\$183,824
	MWRA Salary			
	\$180,600			

Survey Position:	Top Finance Executive				
MWRA Position:	Director, Finance				
Survey Scope:	ALL utilities serving a population in excess of 1,000,000				
	# of Utilities	# of Employees	50th Percentile Salary	Average Salary	MWRA Salary
	20	17	\$170,855	\$187,067	\$162,000
Survey Scope:	All <u>water</u> utilities serving a population in excess of 1,000,000				
	# of Utilities	# of Employees	50th Percentile Salary	Average Salary	MWRA Salary
	8	6	\$148,963	\$154,617	\$162,000
Survey Scope:	All <u>water/wastewater</u> utilities serving a population in excess of 1,000,000				
	# of Utilities	# of Employees	50th Percentile Salary	Average Salary	MWRA Salary
	12	11	\$186,625	\$204,786	\$162,000

Survey Position:	Top Legal Executive				
MWRA Position:	General Counsel				
Survey Scope:	ALL utilities serving a population in excess of 1,000,000				
	# of Utilities	# of Employees	50th Percentile Salary	Average Salary	MWRA Salary
	14	14	\$195,129	\$201,403	\$159,775
Survey Scope:	All <u>water</u> utilities serving a population in excess of 1,000,000				
	# of Utilities	# of Employees	50th Percentile Salary	Average Salary	MWRA Salary
	5	4	No Data Reported	No Data Reported	\$159,775
Survey Scope:	All <u>water/wastewater</u> utilities serving a population in excess of 1,000,000				
	# of Utilities	# of Employees	50th Percentile Salary	Average Salary	MWRA Salary
	9	10	\$185,000	\$197,481	\$159,775



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

BOARD OF DIRECTORS' MEETING

to be held on

Wednesday, May 30, 2018

Chair: M. Beaton
Vice-Chair: J. Carroll
Secretary: A. Pappastergion
Board Members:
A. Blackmon
K. Cotter
P. Flanagan
J. Foti
B. Peña
H. Vitale
J. Walsh
J. Wolowicz

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. **OTHER BUSINESS**
 - A. Review and Extension of Contract for Executive Director
- V. **BOARD ACTIONS**
 - A. **Approvals**
 1. Lease Extension Springfield Water and Sewer Committee (ref. AF&F B.1)
 2. Bond Defeasance of Future Debt Service (ref. AF&F B.2)
 3. MWRA FY19 Insurance Program Renewal (ref. AF&F B.3)
 4. Delegation of Authority to Executive Director to Execute Contract for the Purchase and Supply of Electric Power for the Deer Island Treatment Plant (ref. AF&F B.4)
 5. Wastewater Advisory Committee Contract (ref. WW A.1)
 6. Approval of One New Member of the Wastewater Advisory Committee (ref. WW A.2)
 7. Water Supply Citizen's Advisory Committee Contract (ref. W.B.1)
 8. PCR Amendments (ref. P&C B.1)

9. Appointment of Superintendent, Clinton Wastewater Treatment Plant (ref. P&C B.2)
10. FY2019 Non-Union Compensation (ref. P&C B.3)

8. Contract Awards

1. Award of Main Line Adjustment Project, Fore River Railroad (ref. AF&F C.1)
2. Supply and Delivery of Sodium Hypochlorite for the John J. Carroll Water Treatment Plant and the William A. Brutsch Treatment Facility, Univar USA, Inc., Bid WRA-4523 (ref. W C.1)
3. Technical Assistance Consulting Services for John J. Carroll WTP, Hazen and Sawyer P.C., Contract 7543, and Stantec Consulting Services, Inc., Contract 7544 (ref. W C.2)
4. Low Service Pressure Reducing Valve Improvements – Boston/Medford, D/ESDC, CDM Smith, Inc., Contract 7575 (ref. W C.3)
5. Southern Extra High Pipeline – Section 111 (Dedham South), RJV Construction Corp., Contract 7505 (ref. W C.4)

C. Contract Amendments/Change Orders

1. Chelsea Creek Headworks Upgrade, BHD/BEC 2015, A Joint Venture, Contract 7161, Change Order 12 (ref. WW B.1)
2. Section 14 Pipeline Relocation, Malden: Albanese Brothers, Inc., Contract 6957, Change Order 5 (ref. W D.1)
3. Wachusett Aqueduct Pumping Station, BHD/BEC 2015, A Joint Venture, Contract 7157, Change Order 32 (ref. W D.2)

VI. CORRESPONDENCE TO THE BOARD

VII. EXECUTIVE SESSION

A. Collective Bargaining

1. Collective Bargaining Approval

B. Litigation

1. Litigation Settlement

VIII. ADJOURNMENT

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Board of Directors

April 18, 2018

A meeting of the Board of Directors of the Massachusetts Water Resources Authority was held on April 18, 2018 at the Authority headquarters in Charlestown. Vice-Chair Carroll presided. Present from the Board were Messrs. Blackmon, Flanagan, Pappastergion, Peña, Vitale, Walsh and Ms. Wolowicz. Chair Beaton and Messrs. Cotter and Foti were absent. Among those present from the Authority staff were Frederick Laskey, Executive Director, Steven Remsberg, General Counsel, David Coppes, Chief Operating Officer, Thomas Durkin, Director of Finance, Michele Gillen, Director of Administration, Ria Convery, Assistant Secretary and Kristin MacDougall, Assistant to the Board of Directors. The meeting was called to order at 1:00 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 March 21, 2018, as presented and filed with the records of the meeting.

REPORT OF THE EXECUTIVE DIRECTOR

Mr. Laskey offered congratulations to Secretary Beaton for completing the Boston Marathon and reported the following: MWRA will be receiving a DEP Drinking Water Award for our school lead testing program; the brochure "How Clean is Boston Harbor?" was at the printer and mailing to households in the sewer service area would begin soon; MWRA IT staff have been installing patches to address a recent report of hacking into routers. Mr. Laskey reminded Board members that the May Board meeting will include the annual Budget meetings in the morning and that the Personnel and Compensation Committee must have a meeting to evaluate executive compensation in accordance with the 2011 Authority Accountability and Transparency Act.

Mr. Laskey gave a brief presentation about a proposed Boston College walking trail at MWRA's Shaft 7 site near the Chestnut Hill Reservoir.

BOARD ACTIONS

APPROVALS

PCR Amendments

Upon a motion duly made and seconded, it was
Voted to approve amendments to the Position Control Register, as presented and filed with the records of the meeting.

Appointment of Senior Staff Counsel

Upon a motion duly made and seconded, it was
Voted to approve the appointment of Ms. Donna McMahon as Senior Staff Counsel for Labor/Employment (Grade 13, Confidential) in the Law Division at an annual salary of \$109,341.22, effective on a date to be determined by the Executive Director.

Appointment of Program Manager SCADA Engineering

Upon a motion duly made and seconded, it was
Voted to approve the appointment of Mr. Norman Green to the position of Program Manager, SCADA Engineering (Unit 9, Grade 29), at an annual salary of \$110,228.55, commencing on a date to be determined by the Executive Director.

Appointment, Director of Tunnel Redundancy Program

Upon a motion duly made and seconded, it was
Voted to approve the appointment of Ms. Kathleen M. Murtagh to the position of Director, Tunnel Redundancy Program, (Non-Union, Grade 17), at the recommended annual salary of \$180,000, and to authorize the Executive Director to enter into an employment contract with Kathleen M. Murtagh to provide her services to the Authority for a three-year period commencing on a date to be determined by the Executive Director. Ms. Murtagh will also be provided with \$700 per month car allowance in lieu of an MWRA vehicle.

Mr. Laskey then introduced Ms. Murtagh who answered several questions from Board members.

Appointment of Warehouse Manager

Upon a motion duly made and seconded, it was
Voted to approve the appointment of Ms. Mary Lisa Freeman to the position of Warehouse Manager, Deer Island (Unit 6, Grade 12) at the recommended salary of \$82,158.69 commencing on a date to be determined by the Executive Director.

Appointment, Deputy Director of MIS

Upon a motion duly made and seconded, it was
Voted to approve the appointment of Ms. Paula Weadick to the position of Deputy Director, Management Information Systems (MIS), Non-Union, Grade 15

at an annual salary of \$143,000.00, commencing on a date to be determined by the Executive Director.

Appointment of Manager, Compensation

Upon a motion duly made and seconded, it was

Voted to approve the appointment of Ms. Natalie Wadzinski to the position of Manager, Compensation, Human Resources (Non-Union, Grade 14) at an annual salary of \$116,000.00, commencing on a date to be determined by the Executive Director.

Approval of Amendment 1 to Memorandum of Understanding with Mass. Game for Public Access Fishing Pier at Deer Island

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to execute Amendment 1 to an existing Memorandum of Understanding with the Massachusetts Department of Fish and Game, and other fisheries offices, substantially in the form filed with the records of the meeting, acknowledging the Department's efforts to undertake and fund the permitting, design and construction of a fishing pier and associated lighting, security improvements, and 20 pier parking spaces within the public access portion of Deer Island and authorizing the Authority to fund lighting and security improvement costs, and authorizing MWRA to provide general oversight and monitoring of the use of the fishing pier and parking areas.

CONTRACT AWARDS

Occupational and Medical Services: AllOne Health Resources, Inc., Contract A615

Upon a motion duly made and seconded, it was

Voted to approve the recommendation of the Consultant Selection Committee to select AllOne Health Resources, Inc. to provide medical services and consultation for occupational health programs and to authorize the Executive Director, on behalf of the Authority, to execute a contract with AllOne Health for an amount not to exceed \$124,825.00 for a contract term of 36 months.

Technical Assistance Consulting Services – Hazardous Materials, Geosphere Environmental Management, Inc., Contract 605TA; and Green Seal Environmental, Inc., Contract 606TA

Upon a motion duly made and seconded, it was

Voted to approve the recommendation of the Consultant Selection Committee to award two separate contracts to provide Technical Assistance Consulting Services for Hazardous Materials, and to authorize the Executive Director, on behalf of the Authority, to execute Contract 605TA with Geosphere Environmental Management, Inc. and Contract 606TA with Green Seal

Environmental, Inc., each for an amount not to exceed \$450,000, with a contract term of three years from the Notice to Proceed.

Renewable and Alternative Energy Portfolio Services, Next Grid Markets, LLC, Contract RPS-68

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to approve Contract RPS-68, Renewable and Alternative Energy Portfolio Services, with Next Grid Markets, LLC in accordance with the pricing established under Massachusetts State Contract FAC109, and to authorize the Executive Director, on behalf of the Authority, to execute said contract in an amount not to exceed \$77,600 and for a term of 713 days from April 18, 2018 through March 31, 2020.

Maintenance and Support of the Integrated Financial, Procurement and Human Resources/Payroll Management System: Infor Global Solutions

Upon a motion duly made and seconded, it was

Voted to approve the award of a sole-source purchase order contract for the annual maintenance and support of the integrated financial, procurement and human resources/payroll management system to Infor Global Solutions (formerly Lawson Associates, Inc.), and to authorize the Executive Director to execute said purchase order contract in an amount not to exceed \$427,162.80 for a period of one year, from June 1, 2018 through May 31, 2019.

Agency-Wide Technical Assistance Consulting Services, Hazen and Sawyer, PC, Contract 7498, and Kleinfelder Northeast, Inc., Contract 7604

Upon a motion duly made and seconded, it was

Voted to approve the recommendation of the Consultant Selection Committee to award two separate contracts to provide agency-wide technical consulting services, and to authorize the Executive Director, on behalf of the Authority, to execute Contract 7498 with Hazen and Sawyer, P.C., and Contract 7604 with Kleinfelder Northeast, Inc., each in an amount not to exceed \$2,500,000 and for a contract term of twenty-four months from the Notice to Proceed.

Repair of Three Digester Mixer Assemblies at the Deer Island Treatment Plant: Flowserve Corporation

Upon a motion duly made and seconded, it was

Voted to approve the award of a three-year sole-source contract for the repair of three digester mixer assemblies at the Deer Island Treatment Plant, with Flowserve Corporation, and authorize the Executive Director, on behalf of the Authority, to execute said contract in the amount of \$293,358 for a contract term of three years, from April 18, 2018 through April 17, 2021.

Gravity Thickener Rehabilitation, Deer Island Treatment Plant, Contractor Walsh Construction Company II, LLC Contract 7428

Upon a motion duly made and seconded, it was

Voted to approve the award of Contract 7428, Gravity Thickener Rehabilitation, Deer Island Treatment Plant, to the lowest eligible and responsible bidder, Walsh Construction Company II, LLC and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$19,633,050, with a contract term of 1,000 calendar days from the Notice to Proceed.

It was moved to enter executive session to discuss litigation.

Upon a motion duly made and seconded, it was, upon a roll call vote in which the members were recorded as follows:

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Blackmon		
Carroll		
Flanagan		
Pappastergion		
Peña		
Vitale		
Walsh		
Wolowicz		

Voted to enter executive session to discuss strategy with respect to litigation, in that such discussion in open session may have a detrimental effect on the litigating position of the Authority.

It was stated that the meeting would return to open session solely for the consideration of adjournment.

* * * *

EXECUTIVE SESSION

* * * *

The meeting returned to open session at 1:50 p.m. and adjourned.