



MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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REVISED

ADMINISTRATION, FINANCE & AUDIT COMMITTEE MEETING

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

to be held on

Wednesday, October 18, 2017

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

Time: 10:00 a.m.

AGENDA

A. Information

1. Delegated Authority Report – September 2017
2. FY2018 Financial Update and Summary as of September 2017
3. Lancaster Sewer District FY18 Assessment

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Administration, Finance and Audit Committee

September 20, 2017

A meeting of the Administration, Finance and Audit Committee was held on September 20, 2017 at the Authority headquarters in Charlestown. Chairman Vitale presided. Present from the Board were Ms. Wolowicz and Messrs. Blackmon, Carroll, Cotter, Flanagan, Pappastergion Peña and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Brian Rozowsky, Michele Gillen, Carolyn Francisco Murphy, Mike Hornbrook, Andrea Murphy, Karen Gay-Valente, Mark Johnson, Carolyn Fiore, Denise Breitenicher, John Vetere, Cori Barrett, Tom Durkin, Matt Horan and Bonnie Hale. The meeting was called to order at 10:15 a.m.

Information

Internal Audit Department Activities Report – FY2017

Staff summarized the highlights of the report. It was noted that the State Auditor had recently spoken very highly of the MWRA and its Internal Audit Department.

Delegated Authority Report – July and August 2017

There was brief question and answer.

FY2017 Fourth Quarter Orange Notebook

Staff gave a presentation highlighting and discussing staffing statistics. Mr. Blackmon requested some additional information regarding energy savings.

FY2016-FY2020 Strategic Business Plan Annual Update for FY2017

Staff summarized the report.

FY2017 Amendment and Change Order Report

Staff highlighted some of the larger amendments and change orders, and there was general discussion and question and answer. Mr. Vitale requested a report on the dollar amounts of change orders and amendments by contractor.

Staff reviewed the remaining two information items:

- FY2017 Year-end Capital Improvement Program Spending Report
- FY2017 Year-end Financial Update and Summary.

Approvals

***Bond Defeasance of Future Debt Service**

Staff summarized the specifics of the bond defeasance, and there was general discussion and question and answer. The Committee recommended approval of the defeasance (ref. agenda item B.1).

The meeting adjourned at 11:00 a.m.

* Approved as recommended at September 20, 2017 Board of Directors meeting.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: October 18, 2017
SUBJECT: Delegated Authority Report – September 2017



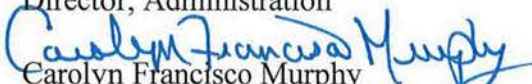
COMMITTEE: Administration, Finance & Audit

INFORMATION
 VOTE

Linda D'Addario, Admin. Systems Coordinator
Preparer/Title


Michele S. Gillen
Director, Administration

Barbara Aylward, Administrator A & F
Preparer/Title


Carolyn Francisco Murphy
Director of Procurement

RECOMMENDATION:

For information only. Attached is a listing of actions taken by the Executive Director under delegated authority for the period September 1 – 30, 2017.

This report is broken down into three sections:

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

BACKGROUND:

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

Construction Contract Awards:

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

Change Orders:

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

Professional Service Contract Awards:

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

Non-Professional Service Contract Awards:

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

Purchase or Lease of Equipment, Materials or Supplies:

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

Amendments:

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

Amendments to the Position Control Register:

Amendments which result only in a change in cost center.

BUDGET/FISCAL IMPACT:

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

CONSTRUCTION/PROFESSIONAL SERVICES DELEGATED AUTHORITY ITEMS SEPTEMBER 1 - 30, 2017

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMEND/CO	COMPANY	FINANCIAL IMPACT
C-1.	09/05/17	RENEWABLE AND ALTERNATIVE ENERGY PORTFOLIO SERVICES AWARD OF A CONTRACT, IN ACCORDANCE WITH THE PRICING ESTABLISHED UNDER STATE CONTRACT, FOR RENEWABLE AND ALTERNATIVE ENERGY PORTFOLIO SERVICES FOR THE TERM OF AUGUST 23, 2017 THROUGH DECEMBER 31, 2017.	RPS-65	AWARD	energyROI, LLC	\$60,160.00
C-2.	09/19/17	WACHUSETT AQUEDUCT PUMPING STATION MODIFY CONSTRUCTION AND BACKFILLING SEQUENCE; RELOCATE SILL PANELS; FURNISH AND INSTALL PRECAST CONCRETE SILL PANELS AND RELATED ITEMS; FURNISH AND INSTALL ADDITIONAL BUTTERFLY VALVES WITH ACTUATORS, FLOW METERS AND TEMPERATURE SENSORS.	7157	20	BHD/BEC, JOINT VENTURE 2015	\$222,828.00
C-3.	09/22/17	BOILER AND WATER HEATER SERVICE AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR BOILER AND WATER HEATER SERVICE AT VARIOUS MWRA FACILITIES FOR A TERM OF 730 CALENDAR DAYS.	OP-355	AWARD	COOLING & HEATING SPECIALISTS, INC.	\$317,602.00
C-4.	09/29/17	FIRE ALARM SYSTEM SERVICE METRO BOSTON FINAL BALANCING CHANGE ORDER TO DECREASE THE FOLLOWING BID ITEMS TO REFLECT ACTUAL QUANTITIES USED: ON-SITE TESTING AND REPAIRS; FIRE ALARM AND FIRE PROTECTION SPRINKLER SYSTEM MONITORING, REPLACEMENT PARTS AND RENTAL EQUIPMENT.	OP-275	4	SULLIVAN & McLAUGHLIN COMPANIES, INC.	(\$38,114.02)
C-5.	09/29/17	CARUSO PUMP STATION IMPROVEMENTS RELOCATE STRUCTURAL SUPPORTS AND MODIFY STRUCTURAL STEEL SUPPORTS FOR GENERATOR EXHAUST STACK; ENLARGE OPENING IN EXISTING EXTERIOR WALL FOR THREE AIR CONDITIONER UNITS IN SECOND FLOOR OFFICES; FURNISH AND INSTALL NEW 18-INCH STEEL MANWAY COVER; FURNISH AND INSTALL A BURNER MODULATION DEVICE ON EXISTING BURNER; PERFORM INSPECTION AND CLEANING OF THE STEEL CHIMNEY AT THE FACILITY.	7362	8	WATERLINE INDUSTRIES CORP.	\$34,646.72

PURCHASING DELEGATED AUTHORITY ITEMS SEPTEMBER 1 - 30, 2017


NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-1.	09/13/17	DISPOSE OF AND/OR RECYCLE MATERIALS APPROVAL OF AMENDMENT #1 FOR ADDITIONAL DISPOSAL OF AND/OR RECYCLING OF MATERIAL EXCAVATED BY MWRA DUE TO AN INCREASE IN PROJECTS PERFORMED BY STAFF.	WRA-4298	1	NORTHGATE RECYCLING, INC.	\$26,250.00
P-2.	09/13/17	PURCHASE ONE RADIAL DRILL PRESS AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR ONE RADIAL DRILL PRESS FOR THE CHELSEA FACILITY, REPLACING A 30 + YEAR-OLD UNRELIABLE MACHINE.	WRA-4409Q		BLUE RIDGE MACHINERY AND TOOLS, INC.	\$28,895.00
P-3.	09/13/17	SUPPLY AND DELIVERY OF HYDROFLUOROSILICIC ACID AWARD OF A ONE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR SUPPLY AND DELIVERY OF HYDROFLUOROSILICIC ACID FOR THE JOHN J. CARROLL WATER TREATMENT PLANT.	WRA-4411		PENCCO, INC.	\$259,564.80
P-4.	09/22/17	PURCHASE OF VIBRATION ANALYSIS AND SUPPORT SERVICES AWARD OF A TWO-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR VIBRATION ANALYSIS AND SUPPORT SERVICES FOR WESTERN OPERATIONS.	WRA-4413Q		M&B ENGINEERED SOLUTIONS, INC.	\$31,690.00
P-5.	09/22/17	PURCHASE OF PRETREATMENT INFORMATION MANAGEMENT SYSTEM MAINTENANCE AND SUPPORT AWARD OF SOLE SOURCE PURCHASE ORDER FOR ANNUAL MAINTENANCE AND SUPPORT FOR PRETREATMENT INFORMATION MANAGEMENT SYSTEM SOFTWARE FOR THE TIME PERIOD NOVEMBER 1, 2017 THROUGH OCTOBER 31, 2018.			INFLECTION POINT SOLUTIONS, LLC	\$115,000.00
P-6.	09/29/17	PURCHASE OF LABORATORY SERVICES AWARD OF A THREE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR LABORATORY TESTING OF UCMR4 CYANOTOXINS FOR THE DEPARTMENT OF LABORATORY SERVICES, AS REQUIRED BY THE SAFE DRINKING WATER ACT.	WRA-4416		NORTHEAST OHIO REGIONAL SEWER DISTRICT	\$146,500.00

POSITION CONTROL REGISTER (PCR) LOCATION CHANGES OCTOBER, 2017 BOARD

<u>DATE OF CHANGE</u>	<u>POSITION TITLE</u>	<u>CURRENT PCR#</u>	<u>CURRENT COST CENTER</u>	<u>NEW PCR #</u>	<u>NEW COST CENTER</u>	<u>REASON FOR CHANGE</u>
9/30/2017	Sr. Instrument Technician	29880177	Trade Labor Maintenance	5480023	Meter Maint - WW	Union Settlement

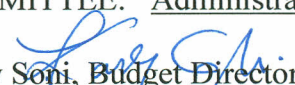

STAFF SUMMARY

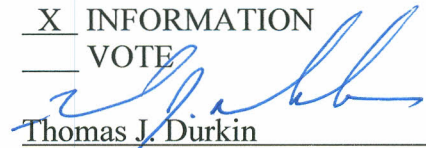
TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: October 18, 2017
SUBJECT: FY18 Financial Update and Summary through September



COMMITTEE: Administration, Finance & Audit

INFORMATION
 VOTE


Kathy Soni, Budget Director

Louise L. Miller, Budget Manager
Preparer/Title


Thomas J. Durkin
Director, Finance

RECOMMENDATION:

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

DISCUSSION:

Total year-to date variance for FY18 is \$7.8 million due to lower direct expenses of \$600,000, lower debt service of \$2.0 million, lower indirect expenses of \$420,000, and higher revenues of \$4.8 million.

FY18 Current Expense Budget

The expense variances for the first quarter of Fiscal Year 2018 by major budget category were:

- Net Lower Direct Expenses of \$600,000, or 1.2%. Spending was lower for Chemicals, Worker's Compensation, Other Services, Fringe Benefits, Professional Services, Maintenance, Utilities and Training & Meetings. This is offset by higher spending on Wages and Salaries, Overtime and Other Materials.
- Lower Debt Service of \$2.0 million, or 1.8%, for favorable short-term interest rates.
- Lower Indirect Expenses of \$420,000, or 3.9%, for lower Watershed reimbursements and Insurance costs.

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

	FY18 Budget YTD	FY18 Actual YTD	\$ Variance	% Variance
Direct Expenses	\$50.8	\$50.2	-\$0.6	-1.2%
Indirect Expenses	\$10.9	\$10.5	-\$0.4	-3.9%
Debt Service	\$110.9	\$108.8	-\$2.0	-1.8%
Total	\$172.6	\$169.5	-\$3.1	-1.8%

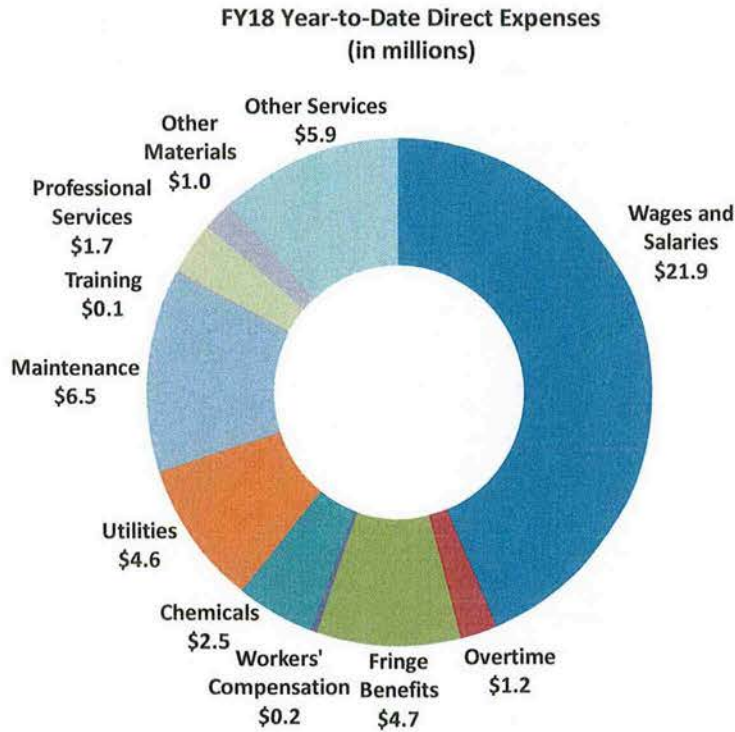
Totals may not add due to rounding

Year-to-date Revenues of \$190.0 million were \$4.8 million 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 \$245,000 for favorable returns on investment income, \$228,000 for the final payment of a class action lawsuit settlement for derivative agreements, \$100,000 for revenue attributable to renewable energy credits and energy rebates, and \$66,000 for disposal of surplus material.

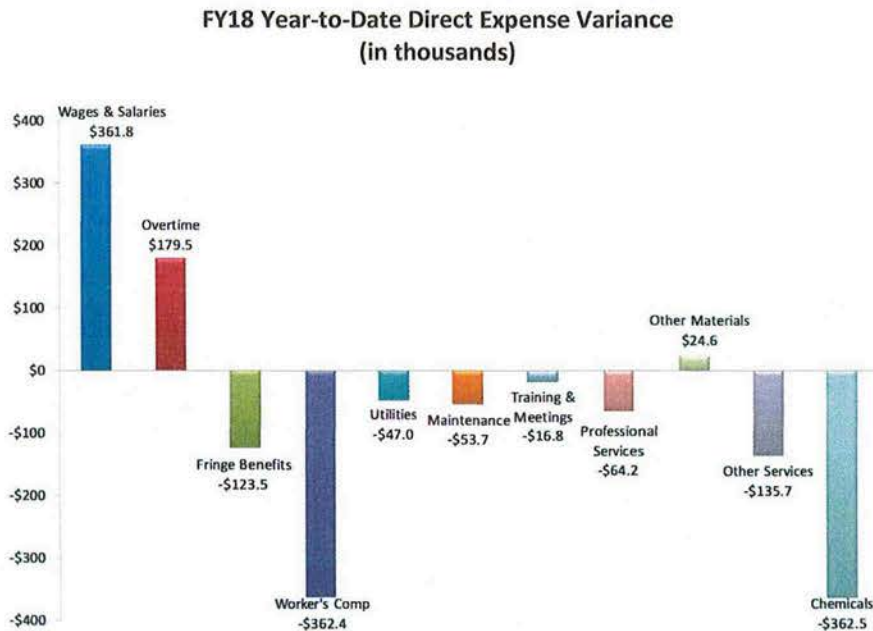
Please refer to Attachment 1 for a more detailed comparison by line item of the budget variances for the year to date.

Direct Expenses

Year-to-date direct expenses totaled \$50.2 million, \$600,000, or 1.2%, less than budgeted.



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



Chemicals

Through September, Chemicals were lower than budget by \$362,000 or 12.6%. Underspending for Sodium Hypochlorite of \$152,000 primarily at Deer Island Wastewater Treatment Plant (DITP); Soda Ash of \$144,000 primarily at John Carroll Water Treatment Plant (Carroll Plant); Activated Carbon of \$49,000 at DITP; Polymer of \$41,000 at DITP; and Carbon Dioxide of \$40,000 at the Carroll Plant. This is offset by over spending on Hydrogen Peroxide of \$158,000 at DITP. The majority of underspending for Chemicals is the result of lower flows both at DITP and Carroll Plant, 9% and 4% respectively year-to-date. It is important to note that Chemical variances are based on deliveries which in general reflect the usage patterns. However, the timing of deliveries is an important factor.

Worker's Compensation

Through September, Worker's Compensation expenses were lower than budget by \$363,000, or 62.4%. Indemnity payments and reserves were lower than budget by \$256,000 for the first quarter primarily as the result of one large settlement, which reduced reserves, and small adjustments to eight other cases. Medical payments and reserves were lower than budget by \$87,000 primarily for fewer medical payments during the first quarter, with no significant adjustments to reserve amounts. Expense payments and reserves were lower than budget by \$19,000 primarily for a reduction in reserves for continuing cases. It should be noted that the Worker's Compensation budget is spread evenly every month during the course of the year and can result in wide monthly variations that cannot be predicted.

Other Services

Other Services spending was lower than budget by \$136,000, or 2.2%, primarily due to timing of payment of dues budgeted in the first quarter but not yet invoiced.

Fringe Benefits

Fringe Benefit spending was lower than budgeted by \$124,000, or 2.6%, primarily for lower Health Insurance costs of \$78,000 due to fewer employees and retirees than budgeted participating in health insurance plans, and the shift from family to individual plans.

Professional Services

Professional Services were under budget by \$64,000, or 3.7%. Professional Services was underspent in the Law Division for outside legal fees for litigation and expert fees and in the Finance Division due to timing of invoices. This was offset by overspending in Other Services mainly in the Laboratory Department due to unplanned algae testing for Chestnut Hill Reservoir in response to a blue-green algae bloom, and in Operations Support for additional consulting work on the SCADA Active Directory project.

Maintenance

Maintenance was under budget by \$54,000, or 0.8%, primarily due to timing of purchase of maintenance materials.

Utilities

Utilities were under budget by \$47,000 or 1.0%, with all major utilities essentially on budget.

Other Materials

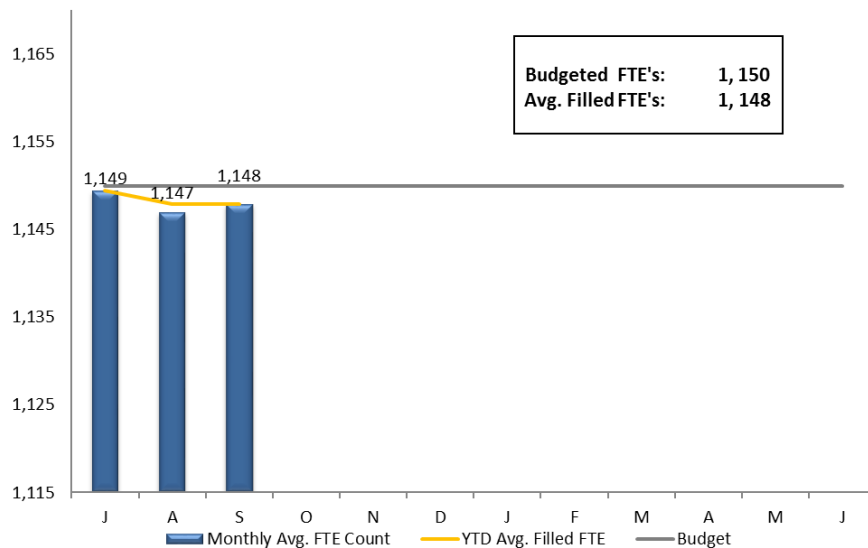
Other Materials was lower than budgeted by \$25,000, or 2.6%. There were various small items under budget, including Vehicle Expenses for lower than budgeted fuel prices. Other items over budget included computer hardware in MIS due to timing of purchases.

Wages and Salaries

Regular Pay is over the budget by \$386,000, however if we net out the impact of \$1,028,000 higher than budgeted “leave balance accruals” the variance is \$642,000 under budget. The “leave balance accrual” represents the value of the monthly change of accrued leave time for employees which includes vacation, sick time, holiday pay and compensation time. The significant overspending of “leave balance accruals” for the first quarter is mostly attributed to less than anticipated vacation time taken.

The \$642,000 underspending is due to 2 less average FTE’s (1,148 versus 1,150 budgeted), lower average new hire salaries versus retirees and the timing of backfilling vacant positions.

FY18 MWRA Full Time Equivalent (FTE) Position Trend



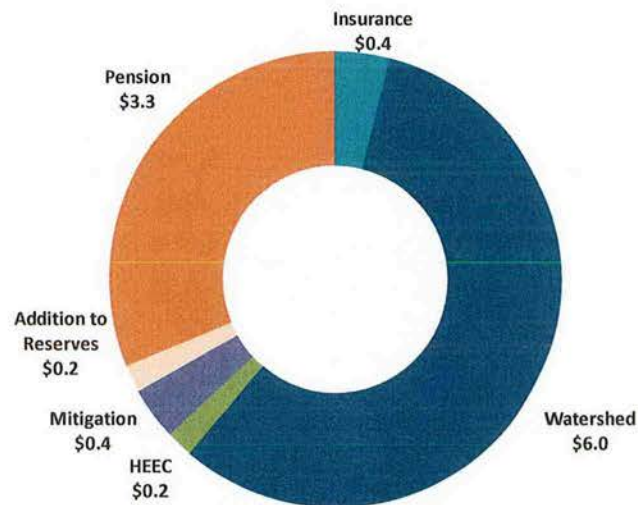
Overtime

Overtime expenses were higher than budgeted by \$180,000 or 17.9%, mainly in Water Operations for maintenance and Wastewater Operations for wet weather events. Some examples of off-hour maintenance work were grounds maintenance in western water operations, HVAC units replacement at the Chelsea Administration building, and replacement of manhole covers and frames prior to local community paving.

Indirect Expenses

Year-to-date Indirect Expenses totaled \$10.9 million, \$420,000 or 3.9% lower than budgeted, due to lower Watershed costs of \$286,000 resulting from an over-accrual in FY17 of Watershed operating expenses; lower than budgeted insurance costs of \$89,000 due to lower than budgeted claims of \$76,000 and lower than budgeted premiums of \$12,000; and lower HEEC charges than budgeted of \$40,000 for the existing cross-harbor cable.

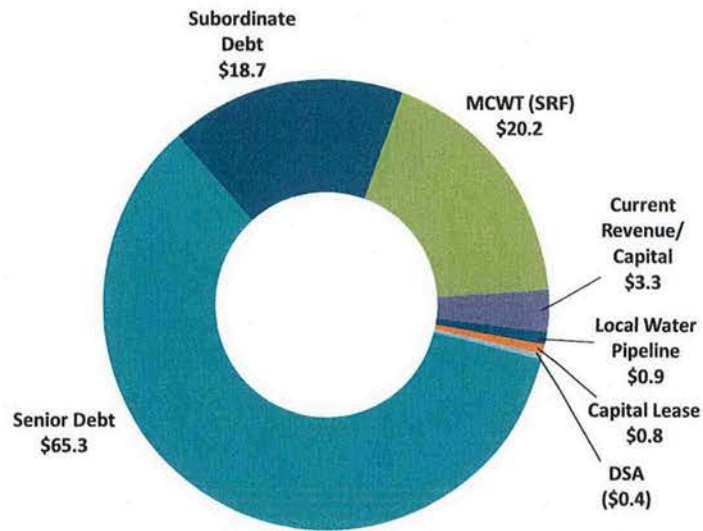
**FY18 Year-to-date Indirect Expenses-YTD
(in millions)**



Capital Financing

Debt Service 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.

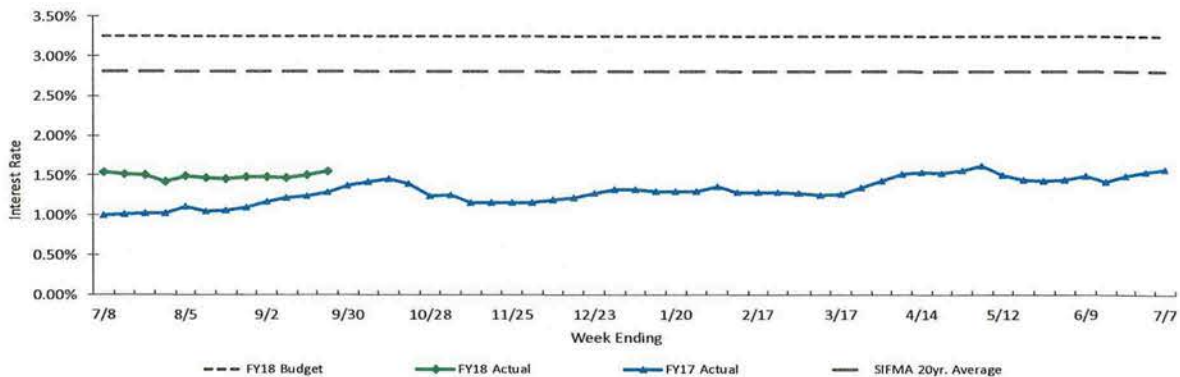
**Year-to-date FY18 Capital Finance
(in millions)**



Year-to-date Capital Financing expenses for the fiscal year totaled \$108.9 million, which was \$2.0 million less than budgeted. The entire variance is related to short-term variable rates.

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

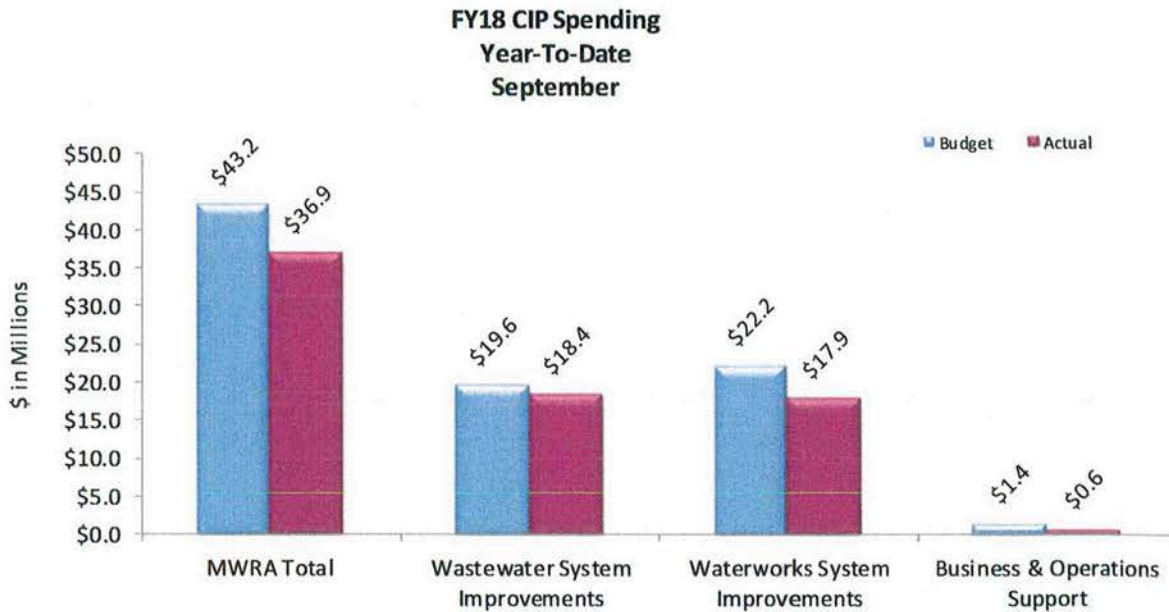
Year-to-date Revenues of \$190.0 million were \$4.8 million over budget reflecting a \$4.2 million receipt from the settlement between various State Attorneys General and Barclays PLC for attempting to manipulate the LIBOR market. LIBOR is a standard financial index used to set the cost of various variable-rate loans. Revenues were also over budget by \$245,000 for favorable returns on investment income, \$228,000 for the final payment of a class action lawsuit settlement

for derivative agreements, \$100,000 for revenue attributable to renewable energy credits and energy rebates, and \$66,000 for disposal of surplus material.

FY18 Capital Improvement Program

Capital expenditures in FY18 total \$36.9 million through the end of September, \$6.3 million, or 14.5%, under budget.

After accounting for programs which are not directly under MWRA’s control, most notably the Inflow and Infiltration (I/I) program, the Local Water Pipeline program, and the community managed Combined Sewer Overflow (CSOs) projects, capital spending totaled \$34.5 million, \$2.1 million, or 5.8%, under budget.



Overall underspending reflects the underspending of \$1.1 million in Wastewater Improvements, \$4.3 million in Waterworks Improvements, and \$0.8 million in Business and Operations Support.

FY18 Year-to-date Spending by Program:

\$ in Millions	Budget	Actuals	\$ Var.	% Var.
Wastewater System Improvements				
Interception & Pumping	9.6	10.7	1.1	11.3%
Treatment	5.6	3.7	(2.0)	-34.7%
Residuals	0.0	0.0	0.0	N/A
CSO	1.5	0.0	(1.5)	-99.9%
Other	2.9	4.1	1.2	41.2%
Total Wastewater System Improvements	\$19.6	\$18.4	-\$1.1	-5.8%
Waterworks System Improvements				
Drinking Water Quality Improvements	0.8	0.5	(0.3)	-31.4%
Transmission	9.8	8.7	(1.1)	-11.3%
Distribution & Pumping	9.1	10.2	1.1	11.9%
Other	2.5	(1.6)	(4.0)	N/A
Total Waterworks System Improvements	\$22.2	\$17.9	-\$4.3	-19.4%
Business & Operations Support	\$1.4	\$0.6	(\$0.8)	-56.5%
Total MWRA	\$43.2	\$36.9	(\$6.3)	-14.5%

Totals may not add due to rounding

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

Other Waterworks: Net underspending of \$4.0 million

- \$3.9 million for Local Water System Assistance Program due to less than anticipated community requests for Phase 3 loans.
- \$0.1 million for Quabbin Power, Communication & Security – Construction partially due to reimbursement from DCR Office of Watershed Management for work at boat cove.

Wastewater Treatment: Net underspending of \$2.0 million

- \$0.7 million for Clinton Phosphorus Reduction Construction due to less than anticipated progress including preliminary testing delays.
- \$0.5 million for North Main Pump Station and Winthrop Terminal Facility Butterfly Valve Replacements, \$0.4 million for Digester Sludge Pump Phase 2, and \$0.3 million for Deer Island Power System Improvement due to work scheduled for FY18 performed in FY17.

Combined Sewer Overflow: Net underspending of \$1.5 million

- Underspending of \$1.5 million for Cambridge Sewer Separation Project due to timing of transfer of payment for final restoration work. Payment is now expected in November 2017.

Other Wastewater: Net overspending of \$1.2 million

- \$1.2 million for Community Infiltration/Inflow (I/I) due to greater than anticipated requests for grants and loans.

Waterworks Transmission: Net underspending of \$1.1 million

- \$1.4 million for Wachusett Aqueduct Pump Station Construction due to delay of surge tank installation and pipe pressure testing failure.
- \$0.2 million for CVA Motorized Screen Replacement due to work scheduled for FY18 performed in FY17 and balancing credit change order pending.
- The underspending was partially offset by \$0.6 million for timing of watershed land purchases.

Water Distribution and Pumping: Net overspending of \$1.1 million

- \$1.8 million for Section 89/29 Redundancy Phase 1C and \$0.6 million SEH Redundancy Pipeline Section 111 Phase 1 – Construction due to contractor progress.
- The overspending was partially offset by underspending of \$0.6 million for Section 89/29 Redundancy Phase 1B due to work scheduled for FY18 performed in FY17, \$0.4 million for SEH Section 111 Construction Phase 2 due to later than budgeted notice to proceed, and \$0.2 million Section 14 Water Pipe Relocation (Malden) due to delay in commencing pipe installation.

Interception & Pumping: Net overspending of \$1.1 million

- \$0.9 million for Chelsea Creek Headworks Upgrades Construction and Construction Administration due to progress on abatement work, \$0.4 million on Study of Sections 4, 5, 6, 18 due to consultant progress, \$0.2 million on Nut Island Odor Control & HVAC Improvements - Design/CA/REI due to consultant progress.
- This overspending was partially offset by other smaller projects totaling \$0.4 million.

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

- \$0.2 million for later than budgeted Notice to Proceed for Marlborough Maintenance Facility.

Construction Fund Balance

The construction fund balance was \$79.3 million as of the end of September. Commercial Paper/Revolving Loan availability was \$172.0 million to fund construction projects.

Attachment 1 – Variance Summary September 2018

Attachment 2 – Current Expense Variance Explanations

Attachment 3 – Capital Improvement Program Variance Explanations

ATTACHMENT 1
FY18 Actuals vs. FY18 Budget

	September 2017 Year-to-Date					
	Period 3 YTD Budget	Period 3 YTD Actual	Period 3 YTD Variance	%	FY18 Approved	% Expended
EXPENSES						
WAGES AND SALARIES	\$ 21,532,381	\$ 21,894,189	\$ 361,808	1.7%	\$ 104,286,370	21.0%
OVERTIME	1,002,795	1,182,322	179,527	17.9%	4,110,637	28.8%
FRINGE BENEFITS	4,810,415	4,686,897	(123,518)	-2.6%	20,997,975	22.3%
WORKERS' COMPENSATION	580,745	218,393	(362,352)	-62.4%	2,322,980	9.4%
CHEMICALS	2,887,914	2,525,449	(362,465)	-12.6%	9,836,933	25.7%
ENERGY AND UTILITIES	4,622,296	4,575,323	(46,973)	-1.0%	21,735,222	21.1%
MAINTENANCE	6,542,182	6,488,440	(53,742)	-0.8%	32,200,785	20.1%
TRAINING AND MEETINGS	80,440	63,592	(16,848)	-20.9%	406,269	15.7%
PROFESSIONAL SERVICES	1,730,984	1,666,746	(64,238)	-3.7%	7,221,622	23.1%
OTHER MATERIALS	948,893	973,454	24,561	2.6%	6,692,660	14.5%
OTHER SERVICES	6,054,840	5,919,165	(135,675)	-2.2%	22,764,526	26.0%
TOTAL DIRECT EXPENSES	\$ 50,793,885	\$ 50,193,970	\$ (599,914)	-1.2%	\$ 232,575,979	21.6%
INDIRECT EXPENSES						
INSURANCE	\$ 503,363	\$ 414,748	\$ (88,615)	-17.6%	\$ 2,013,452	20.6%
WATERSHED/PILOT	6,291,002	6,005,183	(285,819)	-4.5%	25,164,006	23.9%
BECo PAYMENT	239,361	198,972	(40,389)	-16.9%	957,445	20.8%
MITIGATION	399,238	393,723	(5,515)	-1.4%	1,596,950	24.7%
ADDITIONS TO RESERVES	205,279	205,279	-	0.0%	821,116	25.0%
RETIREMENT FUND	3,277,369	3,277,369	-	0.0%	3,277,369	100.0%
POST EMPLOYEE BENEFITS	-	-	-	---	5,035,422	0.0%
TOTAL INDIRECT EXPENSES	\$ 10,915,612	\$ 10,495,274	\$ (420,338)	-3.9%	\$ 38,865,760	27.0%
DEBT SERVICE						
STATE REVOLVING FUND	\$ 20,159,468	\$ 20,159,468	\$ -	0.0%	\$ 84,931,906	23.7%
SENIOR DEBT	65,265,067	65,265,067	-	0.0%	264,560,267	24.7%
CORD FUND	-	-	-	---	-	---
DEBT SERVICE ASSISTANCE	(391,580)	(391,580)	-	0.0%	(391,580)	100.0%
CURRENT REVENUE/CAPITAL	3,300,000	3,300,000	-	0.0%	13,200,000	25.0%
SUBORDINATE MWRA DEBT	20,766,933	20,766,933	-	0.0%	85,443,447	24.3%
LOCAL WATER PIPELINE CP	948,736	948,736	-	0.0%	3,794,944	25.0%
CAPITAL LEASE	804,265	804,265	-	0.0%	3,217,060	25.0%
DEBT PREPAYMENT	-	-	-	---	10,900,000	0.0%
VARIABLE DEBT	-	(2,041,504)	(2,041,504)	---	-	0.0%
HEEC CABLE CAPACITY RESERV	-	-	-	---	6,532,146	---
DEFEASANCE ACCOUNT	-	-	-	---	-	---
TOTAL DEBT SERVICE	\$ 110,852,888	\$ 108,811,384	\$ (2,041,504)	-1.8%	\$ 472,188,190	23.0%
TOTAL EXPENSES	\$ 172,562,385	\$ 169,500,628	\$ (3,061,755)	-1.8%	\$ 743,629,929	22.8%
REVENUE & INCOME						
RATE REVENUE	\$ 179,263,500	\$ 179,263,500	\$ -	0.0%	\$ 717,054,000	25.0%
OTHER USER CHARGES	2,419,896	2,408,943	(10,953)	-0.5%	9,011,070	26.7%
OTHER REVENUE	1,252,332	5,827,115	4,574,783	365.3%	7,359,078	79.2%
RATE STABILIZATION	-	-	-	---	-	---
INVESTMENT INCOME	2,265,736	2,510,953	245,217	10.8%	10,205,781	24.6%
TOTAL REVENUE & INCOME	\$ 185,201,464	\$ 190,010,511	\$ 4,809,046	2.6%	\$ 743,629,929	25.6%

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY18 Budget YTD September	FY18 Actuals YTD September	FY18 YTD Actual vs. FY18 Budget		Explanations
			\$	%	
Direct Expenses					
Wages & Salaries	21,532,381	21,894,189	361,808	1.7%	Regular Pay is over the budget by \$386,000, however if we net out the impact of \$1,028,000 higher than budgeted "leave balance accruals" the variance is \$642,000 under budget. The "leave balance accrual" represents the value of the monthly change of accrued leave time for employees which includes vacation, sick time, holiday pay and compensation time. The significant overspending of "leave balance accruals" for the first quarter is mostly attributed to less than anticipated vacation time taken. The \$642,000 underspending is due to 2 less average FTE's (1,148 versus 1,150 budgeted), lower average new hire salaries versus retirees and the timing of backfilling vacant positions.
Overtime	1,002,795	1,182,322	179,527	17.9%	Higher spending mainly in Water Operations for maintenance and Wastewater Operations for wet weather events. Some examples of off-hour maintenance work were grounds maintenance in Western Water Operations, HVAC units replacement at the Chelsea Administration building, and replacement of manhole covers and frames prior to local community paving.
Fringe Benefits	4,810,415	4,686,897	(123,518)	-2.6%	Lower than budget mainly in Health Insurance of \$78,000, due to fewer than budgeted participating in health insurance plans, and the shift from family to individual plans.
Worker's Compensation	580,745	218,393	(362,352)	-62.4%	Underspending due to lower compensation payments of \$256,000, medical payments of \$87,000 and management costs of \$19,000. Compensation payments were lower due to a reductions of reserves primarily due to settlement of one claim and lower reserves for a handful of other claims. Medical payments were lower due to fewer actual costs as oppose to the budget. In September actual spending was \$173,000 under budget. It is important to note that spending on this line item can change significantly depending on future claims and severity of cases.
Chemicals	2,887,914	2,525,449	(362,465)	-12.6%	Underspending for Sodium Hypochlorite of \$152,000 primarily at DITP; Soda Ash of \$144,000 primarily at JCWTP; Activated Carbon of \$49,000 at DITP; Polymer of \$41,000 at DITP; and Carbon Dioxide of \$40,000 at JCWTP. This is offset by over spending on Hydrogen Peroxide of \$158,000 at DITP. The majority of underspending for Chemicals is the result of lower flows both at DITP and JCWTP, 9% and 4% respectively year-to-date. It is important to note that Chemicals variance are based on deliveries which in general reflect the usage patterns. However, the timing of deliveries in an important factor.
Utilities	4,622,296	4,575,323	(46,973)	-1.0%	Underspending in Water of \$45,000 primarily at JCWTP and DITP.

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY18 Budget YTD September	FY18 Actuals YTD September	FY18 YTD Actual vs. FY18 Budget		Explanations
			\$	%	
Maintenance	6,542,182	6,488,440	(53,742)	-0.8%	Services were underspent by \$298,000 and Materials were overspent by \$244,000. Underspending in HVAC Materials of \$143,000 at DITP for timing; Building & Grounds Services of \$132,000 for invasive control contract at various reservoirs and at DITP for grounds keeping contract; Computer Services of \$96,000 for timing of renewal of SCADA GE IFIX software; Building & Grounds Materials of \$92,000 for timing of explosion proof barrels at DITP and materials at the Chelsea Facility; Plant & Machinery Services of \$66,000 at DITP; and Specialized Equipment Services of \$59,000 primarily in in FOD Metro Maint and Lab Services; Overspending in Plant & Machinery Materials of \$349,000 at DITP for scum gearboxes; Specialized Equipment Materials of \$95,000 in OEP and Meter Maintenance; Electrical Services of \$64,000 at DITP and JCWTP; and Electrical Materials of \$50,000 at DITP.
Training & Meetings	80,440	63,592	(16,848)	-20.9%	Underspending primarily in MIS due to timing.
Professional Services	1,730,984	1,666,746	(64,238)	-3.7%	Other Professional Services was under spent \$92,000 primarily in Treasury for timing of invoices and Law for timing of expert services; Legal Services was underspent \$68,000 in the Law Division for outside legal fees for litigation and in Human Resources; and Resident Inspection of \$33,000 related to lower spending on DASH Quality Assurance/Quality Control diver associated with the invasive species control of the water reservoirs. This is offset by higher spending for Engineering Services of \$60,000 for Active Directory SCADA security services. This project was budgeted in FY17. Lab & Testing of \$54,000 in DLS for unplanned algae testing for Chestnut Hill Reservoir and ENQUAL for unplanned red tide study.
Other Materials	948,893	973,454	24,561	2.6%	Higher budgeted spending for Computer Hardware of \$68,000 in MIS due to timing of purchases; and Work Clothes of \$54,000. This is offset by lower spending for Vehicle Expenses of \$59,000 due to lower prices for fuel; and Health and Safety of \$36,000 primarily at DITP and Op Support.
Other Services	6,054,840	5,919,165	(135,675)	-2.2%	Lower than budgeted spending for Membership/Dues/Subscription of \$189,000 due to timing of payment for the Water Research Foundations; Other Services of \$84,000 for timing of remediation projects managed by RPEM and timing of Technical Assistance for Lead issues; and Police Details of \$37,000 primarily in Water Pipeline Maintenance and Meter Maintenance. This is offset by higher spending for Sludge Pelletization of \$117,000 due to higher year to date quantities.
Total Direct Expenses	50,793,885	50,193,970	(599,915)	-1.2%	

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY18 Budget YTD September	FY18 Actuals YTD September	FY18 YTD Actual vs. FY18 Budget		Explanations
			\$	%	
Indirect Expenses					
Insurance	503,363	414,748	(88,615)	-17.6%	Lower Claims than budgeted of \$76,000 and lower premiums of \$12,000.
Watershed/PILOT	6,291,002	6,005,183	(285,819)	-4.5%	Lower Watershed Reimbursement of \$286,000 due to over accrual at the end of FY18 as compared to anticipated costs for the first quarter of FY18.
HEEC Payment	239,361	198,972	(40,389)	-16.9%	
Mitigation	399,238	393,723	(5,515)	-1.4%	Actual inflation rate was 2.08% vs. 2.5% used for the budget.
Addition to Reserves	205,279	205,279	-	0.0%	
Pension Expense	3,277,369	3,277,369	-	0.0%	
Post Employee Benefits	-	-	-		
Total Indirect Expenses	10,915,612	10,495,274	(420,338)	-3.9%	
Debt Service					
Debt Service	111,244,469	109,202,965	(2,041,504)	-1.8%	\$2.0 million for lower variable rate of
Debt Service Assistance	(391,580)	(391,580)	-	0.0%	
Total Debt Service Expenses	110,852,889	108,811,385	(2,041,504)	-1.8%	
Total Expenses	172,562,386	169,500,629	(3,061,757)	-1.8%	
Revenue & Income					
Rate Revenue	179,263,500	179,263,500	-	0.0%	
Other User Charges	2,419,896	2,408,943	(10,953)	-0.5%	
Other Revenue	1,252,332	5,827,115	4,574,783	365.3%	\$4.4 M for two settlements, \$4.2 M 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; \$100,000 for revenue attributable to renewable energy credits and energy rebates; and \$66,000 for disposal of surplus material.
Rate Stabilization	-	-	-		
Investment Income	2,265,736	2,510,953	245,217	10.8%	Investment Income is over budget as result of higher short term rates (1.28% vs. 1.05% budget)
Total Revenue	185,201,464	190,010,511	4,809,047	2.6%	
Net Revenue in Excess of Expenses	12,639,078	20,509,882	7,870,804		

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

	FY18 Budget YTD September	FY18 Actuals YTD September	YTD Actuals vs. Budget		Explanations
			\$	%	
Wastewater					
Interception & Pumping (I&P)	\$9,596	\$10,679	\$1,084	11.3%	<u>Overspending</u> Chelsea Creek Headworks Upgrades Construction and Construction Administration (CA): \$0.9M (progress on abatement work) Sections 4, 5, 6, 186 - Study: \$0.4M (consultant progressing ahead of schedule) Nut Island Odor Control & HVAC Improvements - Design/CA/REI: \$0.2M (consultant progress) <u>Offset Underspending</u> Other smaller projects totaling \$0.4M.
Treatment	\$5,646	\$3,688	(\$1,958)	-34.7%	<u>Underspending</u> NMPS & WTF Butterfly Valve Replacement: \$0.5M, Digested Sludge Pump Replacement - Phase 2: \$0.4M, and Power System Improvements - Construction: \$0.3M (all for work scheduled for FY18 performed in FY17) Clinton Wastewater Treatment Plant Phosphorus Reduction - Construction and ESDC: \$0.7M (progress behind including preliminary testing delays)
Residuals	\$0	\$0	\$0	-	
CSO	\$1,455	\$2	(\$1,454)	-99.9%	<u>Underspending</u> Cambridge Sewer Separation: \$1.5M (timing of final work payment; anticipated in November)
Other Wastewater	\$2,876	\$4,062	\$1,186	41.2%	<u>Overspending</u> I/I Local Financial Assistance: \$1.2M (greater than anticipated requests for grants and loans)
Total Wastewater	\$19,573	\$18,432	(\$1,142)	-5.8%	

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

	FY18 Budget YTD September	FY18 Actuals YTD September	YTD Actuals vs. Budget		Explanations
			\$	%	
Waterworks					
Drinking Water Quality Improvements	\$798	\$548	(\$251)	-31.4%	<u>Underspending</u> CP7 Existing Facilities: \$0.2M (delayed notice to proceed) for the Marlborough Maintenance Facility
Transmission	\$9,829	\$8,716	(\$1,114)	-11.3%	<u>Underspending</u> Wachusett Aqueduct Pump Station - Construction: \$1.4M (delay of surge tank installation and pipe pressure testing failure) CVA Motorized Screens Replacement - Construction: \$0.2M (work scheduled for FY18 performed in FY17 and balancing credit change order pending) Offset Overspending Watershed Land Acquisition: \$0.6M (timing of land purchases)
Distribution & Pumping	\$9,115	\$10,203	\$1,087	11.9%	<u>Overspending</u> NIH Section 89/29 Redundancy Phase 1C: \$1.8M (project progress) SEH Redundancy Pipeline Section 111 Phase 1 - Construction: \$0.6M (project progress) <u>Underspending</u> NIH Section 89/29 Redundancy Phase 1B Construction: \$0.6M (work scheduled for FY18 performed in FY17) SEH Redundancy Pipeline Section 111 Construction 2: \$0.4M (delayed notice to proceed) Section 14 Water Pipe Relocation (Malden): \$0.2M (delay in commencing pipe installation)
Other Waterworks	\$2,471	(\$1,569)	(\$4,040)	-	<u>Underspending</u> Local Water System Assistance Program: \$3.9M (less than budgeted community requests for Phase 3 loans) Quabbin Power, Communication & Security - Construction: \$0.1M (partially due to reimbursement from DCR Office of Watershed Management for work at boat cove)
Total Waterworks	\$22,214	\$17,897	(\$4,317)	-19.4%	

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

	FY18 Budget YTD September	FY18 Actuals YTD September	YTD Actuals vs. Budget		Explanations
			\$	%	
Business & Operations Support					
Total Business & Operations Support	\$1,404	\$610	(\$793)	-56.5%	<u>Underspending</u> MIS Projects: \$0.2M (timing of IT Strategic Plan implementation) Security Equipment: \$0.2M (delay in implementing equipment initiatives) Fish Hatchery Pipeline Hydro: \$0.1M (timing of final work. Project is substantially complete)
Total MWRA	\$43,191	\$36,939	(\$6,252)	-14.5%	

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: October 18, 2017
SUBJECT: Lancaster Sewer District FY18 Assessment




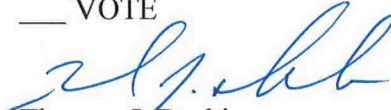
COMMITTEE: Administration, Finance & Audit

INFORMATION

VOTE


Kathy Soni, Budget Director

 Leo Norton, Assistant Manager, Rates, Revenue
and Finance
Preparer/Title


Thomas J. Durkin
Director, Finance

RECOMMENDATION:

For information only.

DISCUSSION:

The Lancaster Sewer District Commission requested that representatives from MWRA attend the September 13, 2017 meeting of the Commission to discuss the District's FY18 assessment. Michael Hornbrook, Thomas Durkin, and Robert Gorham attended.

As has been the case, Clinton and the Lancaster Sewer District are not issued preliminary assessments by MWRA. Staff will now be sending preliminary assessments commencing FY19. While the District had estimated an increase of 8%, the actual increase over the \$330,150 assessed in FY17 based on the first quarter invoice, was over 40%. The Commission described the difficulty that the unusually higher than anticipated assessment increase would cause to the District's already set FY18 retail rates. The Commission reported that the FY18 MWRA assessment was approximately \$111,000 more than they had budgeted and asked MWRA staff to consider possible measures to ease this budgetary pressure.

Staff presented an explanation of the MWRA costs contained in the annual assessment. Staff focused on the debt service increase associated with capital projects at the Clinton Waste Water Treatment Plant including most notably, the approximately \$9 million phosphorous reduction facility. Staff also described how the shares of the cost of the Clinton Waste Water Treatment Plant have changed between the Town of Clinton and the Lancaster Sewer District. The share for the Lancaster Sewer District has increased in part due to their own increased flows and in part due to Clinton's reduced flows.

Staff have identified two issues that together will relieve much of the budgetary difficulty. First, the first quarter invoice did not include the prior period adjustment from a "true-up" of FY16. The District's first quarterly invoice was in the amount of \$116,855 implying an annual assessment of \$467,420 or a 41.6% increase over the prior year. The FY18 assessment approved by the Board of Directors is \$411,128 or \$56,292 less than the implied assessment. This credit adjustment has

already been made and is being reflected over the next three quarterly payments with invoices in the amount of \$98,091.

Second, with FY17 now closed, the actual expenses compared to budgeted expenses resulted in a \$51,545 prior period credit adjustment that would typically be applied to the FY19 assessment. Staff are planning to apply this adjustment to this year's assessment. The application of the adjustment results in a net Lancaster Sewer District assessment for FY18 of \$359,583 or an 8.9% increase over the FY17 assessment.

The resulting \$107,837 reduction comprised of the already adjusted FY18 assessment and the application of the FY17 prior period credit adjustment will nearly eliminate the \$111,000 budgetary challenge.

BUDGET FISCAL IMPACT:

The FY18 revenue estimate for the Lancaster Sewer District is \$411,128 as approved by the Board. Applying the prior period credit adjustment this year will result in a \$51,545 revenue deficit for this line item. This deficit will be absorbed within the FY18 projected revenue.



MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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WASTEWATER POLICY & OVERSIGHT COMMITTEE MEETING

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

to be held on

Wednesday, October 18, 2017

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

Time: Immediately following AF&A Comm.

AGENDA

A. Information

1. MWRA Industrial Waste Report #33: Industrial Pretreatment Program Annual Report to EPA for FY17
2. 2016 Deer Island Outfall Monitoring Overview

B. Contract Awards

1. CSO Post-Construction Monitoring and Performance Assessment: AECOM Technical Services, Inc., Contract 7572

C. Contract Amendments/Change Orders

1. Supply and Delivery of Polymer to the Deer Island Treatment Plant: BASF Corp., Bid WRA-4115, Amendment 1
2. Remote Headworks Upgrades: Arcadis U.S., Inc., Contract 7206, Amendment 5
3. Chelsea Creek Headworks Upgrade: BHD/BEC JV 2015, A Joint Venture, Contract 7161, Change Order 5

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Wastewater Policy and Oversight Committee

September 20, 2017

A meeting of the Wastewater Policy and Oversight Committee was held on September 20, 2017 at the Authority headquarters in Charlestown. Chairman Flanagan presided. Present from the Board were Ms. Wolowicz and Messrs. Blackmon, Carroll, Cotter, Pappastergion, Peña, Vitale and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Mike Hornbrook, John Vetere, Ethan Wenger, Cori Barrett, and Bonnie Hale. The meeting was called to order at 11:00 a.m.

Information

Hydrogen Cyanide Incident Chelsea Creek Headworks

Staff gave a detailed report on the incident, and there was general discussion and question and answer.

Contract Awards

*Supply and Delivery of Sodium Hypochlorite to the Deer Island Treatment Plant: Borden & Remington Corporation, Bid WRA-4413

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

Contract Amendments/Change Orders


*Alewife Brook Pump Station Rehabilitation: Barletta Engineering Corporation, Contract 6797, Change Order 2

Staff gave a presentation on the project and the reasons for the change order. The Committee recommended approval of Change Order 2 (ref. agenda item C.1).

The meeting adjourned at 11:30 a.m.

* Approved as recommended at September 20, 2017 Board of Directors meeting.


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: October 18, 2017
SUBJECT: MWRA Industrial Waste Report #33: Industrial Pretreatment Program Annual Report to EPA for FY17

COMMITTEE: Wastewater Policy & Oversight

INFORMATION
 VOTE

Carolyn M. Fiore, Deputy Chief Operating Officer
John A. Riccio, Director, TRAC
Preparer/Title


Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

For information only. MWRA is required by its National Pollutant Discharge Elimination System (NPDES) Permits and U.S. Environmental Protection Agency regulations (40 CFR 403.12(i)) to submit an annual report to EPA and the Massachusetts Department of Environmental Protection each year that describes the activities and accomplishments of MWRA's Industrial Pretreatment Program. Staff will be submitting the FY17 Annual Report (Industrial Waste Report #33) to EPA and DEP on or before October 31, 2017, the required submittal deadline. This staff summary discusses some of the highlights from the report. A draft copy of the report will be available at the Board meeting.

DISCUSSION:

Industrial Waste Report #33 documents MWRA's efforts to control current permitted sewer users during FY17. MWRA's Toxic Reduction and Control (TRAC) Department operates the Industrial Pretreatment Program to control the level of toxic substances discharged into the sanitary sewer system from commercial and industrial sources. Through permits, inspections, sampling, and enforcement, the program keeps excessive levels of toxics out of the sanitary sewer system to: protect worker health and safety; protect municipal and MWRA infrastructure; prevent interference at the Deer Island and Clinton Wastewater Treatment Plants; prevent the pass-through of pollutants into receiving waters; and enable MWRA to beneficially reuse its residuals for the production of fertilizer.

Staff estimate that approximately 3% of the total flow to the treatment plants comes from permitted facilities, but this flow represents a significantly higher proportion of toxics discharged to the system. TRAC currently oversees approximately 1,180 permitted sewer users. There were 203 facilities that met MWRA's definition of Significant Industrial User (SIU) during FY17. SIUs

require substantial oversight due to the nature of the pollutants they discharge and/or the volume of their flows. Some of the highlights included in the report are described below.

Significant Industrial Users

As mentioned above, there were 203 industries designated as Significant Industrial Users in MWRA's sewer service areas during FY17. (An SIU is a sewer user subject to Federal Categorical standards such as metal plater, or has a flow equal to or above 25,000 gallons per day, or has a reasonable potential to violate MWRA's regulations). By the end of FY17, the number of SIUs in the service area dropped to 200. The number of SIUs can vary during the year as a result of companies going out of business,

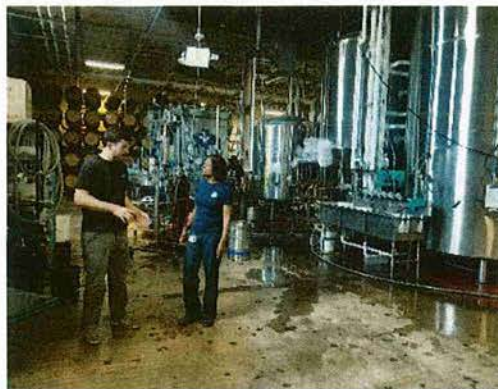


Figure 1- Industrial Inspection of a new microbrewery

a change in their pretreatment process, or a new company being added. TRAC met EPA's requirements for inspections and sampling in FY17, inspecting all 203 SIUs and sampling 181 SIUs. In FY17, 22 SIUs were not sampled because they did not discharge during the year¹, were re-categorized as non-SIUs before they could be sampled, or had infrequent discharges or sample sites that were not ready for sampling.

Pursuant to MWRA's Deer Island NPDES permit, EPA requires TRAC to issue permits to 90% of MWRA's SIUs within 120 days of the industries' current permit expiration dates, or MWRA's receipt of a Sewer Use Discharge Permit Application, (whichever is later) and 100% within 180 days. TRAC issued 96% of SIU permits (54 permits) within 120 days and 96% of permits within 180 days. Two SIU permits were issued beyond 180 days: one was delayed waiting for payment of permit fees for which TRAC issued a Notice of Permit Suspension for nonpayment of fees. The second was delayed while TRAC staff received and reviewed data necessary to change the facility's category and SIU status. Facilities remain covered by their existing permits while their renewal permits are pending. There are typically a few permits every year that are not renewed within required time frames due to similar issues.

In 2016, the MWRA received a new NPDES permit for the Clinton Wastewater Treatment Plant, which became effective on March 1, 2017. The permit required TRAC to review its local limits for the Clinton area and to submit a report on its review to EPA within 180 days of the permit's effective date. The report was submitted on August 9, 2017. The NPDES permit also included a reduction in the time allotted to issue 100% of its Significant Industrial User (SIU) permits, from 180 to 90 days, from the industries' current permit expiration dates, or MWRA's receipt of a Sewer Use Discharge Permit Application, (whichever is later). Three permits were issued to industries in the Clinton area after the effective date of the NPDES permit. TRAC issued all 3 permits within the 90-day timeframe.

¹ Non-discharging facilities include those that operate a federally regulated process with a discharge that is either hauled or evaporated on site. Such facilities are permitted by MWRA as Category 4 SIUs. MWRA annually inspects these facilities, but does not sample wastewater that is not discharged to its sewer system.

This year, the total number of SIUs in Significant Noncompliance (SNC)² was 36, an increase from the 22 SIUs in SNC in FY16. The increase in the number of SIUs in SNC was due in part to a higher number of SIUs failing to submit reports compared to FY16. During the last quarter of FY17, the number of SIUs in Significant Noncompliance was only thirteen, indicating that 23 of the facilities designated earlier in the year were no longer in Significant Noncompliance. MWRA continues to hold annual educational meetings with SIUs to review and reinforce methods for maintaining compliance. The FY17 meetings were held at MWRA's Fore River Pelletizing Plant in May 2017. Attendees heard presentations on topics of interest in toxic reduction and control from MWRA staff and toured the Pelletizing facility. Credits for attending the seminar were DEP-approved for Operator License training. A total of 72 people from 47 of MWRA's SIUs attended the meeting over two days.

Inspections and Monitoring Programs

In addition to paying close attention to the SIUs, TRAC staff are responsible for permitting, inspecting and monitoring a variety of other types of facilities to minimize the discharge of toxics to the sewer and assist other MWRA programs. In FY17, TRAC staff conducted an additional 1,699 industrial/commercial facility inspections of other regulated industries, 139 inspections associated with the septage program, including inspections of haulers and septage receiving sites, and 907 inspections of oil/water separators. There are 11 septage receiving sites and more than 4,500 gas/oil separators within MWRA's district.

TRAC's monitoring staff conducted an additional 1,598 sampling events to characterize wastewater flow from non-SIU permitted facilities, to support MWRA's NPDES permits and other MWRA projects, and to evaluate discharges to the sewer in response to emergencies.

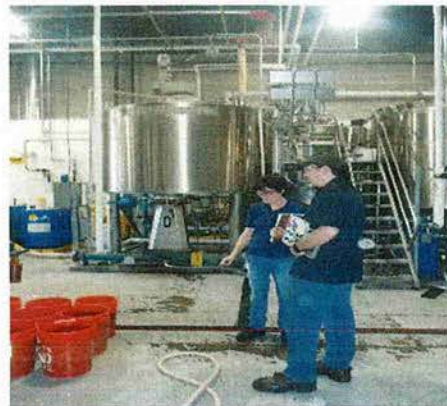


Figure 2. Industrial Inspection of new microbrewery.

Enforcement Program

In FY17, TRAC issued a total of 271 early enforcement actions (Notices of Violations and Traps Warning Letters) to industrial and commercial facilities (compared to 232 in FY16), and 61 higher-level enforcement actions (Orders and Penalty Assessment Notices) were issued in response to a variety of persistent discharge and reporting violations, compared to 45 in FY16.

TRAC assessed a total of \$184,250.00 in penalties in FY17 against permitted sewer users (compared to \$162,100.00 assessed in FY16); two SIU were assessed penalties totaling

² MWRA is required to annually update EPA regarding Significant Industrial Users that meet EPA's definition of Significant Noncompliance. Each industrial user is evaluated for Significant Noncompliance four times during the year. MWRA evaluates each SIU based on discharge and reporting requirements.

\$162,500.00. MWRA collected a total of \$122,750³ (compared to \$661,600 collected in FY16). The amount of penalties assessed and collected can vary significantly from year to year as a result of the timing of the penalty issuance, assessment of the penalty, negotiations and collection.

Program Cost Recovery

MWRA's Incentive and Other Charges Program continues to recover a substantial portion of MWRA's costs of inspecting, monitoring, and permitting industrial sewer users. The total adjusted amount billed under the program in FY17 was \$2,215,844, a slight increase from \$2,136,028 in FY16. As of September 2017, collections for FY17 bills were at \$2,104,546 (compared to \$2,135,179 in FY16), approximately a 95% recovery of the adjusted amount invoiced.

FY18 Initiatives

In August 2017, EPA finalized regulations that apply to dental facilities nationwide. The regulations require publically owned treatment works (POTWs) with approved Pretreatment Programs to regulate dental offices with new or existing discharges of mercury amalgam. Pursuant to the federal rule, these dental facilities must submit certifications regarding their compliance with the rule. New facilities that start discharging after July 14, 2017, must submit these certifications within 90 days of beginning operations. Dental facilities operating prior to the July 14, 2017 are required to certify compliance prior to July 14, 2020. DEP currently manages a similar dental regulatory program within the Commonwealth of Massachusetts, but the new regulations place the regulatory burden directly onto federally approved pretreatment programs, including MWRA. TRAC is evaluating ways to manage approximately 1,100 dental facilities in the service areas and will work closely with the Massachusetts Dental Society, DEP and EPA to develop an appropriate regulatory program. At a minimum, MWRA will need to revise its Sewer Use Regulations to comply with the new EPA requirements. Staff will return to the Board with any proposed changes to the regulations.

TRAC and MIS will continue to work towards compliance with EPA's Cross Media Electronic Reporting Rule. The MWRA's Pretreatment Information Management System (PIMS) needs to be upgraded to meet the requirements of the rule for data currently entered by permittees' contract laboratories. Data submitted electronically must meet certain authentication and security requirements. MWRA's MIS staff intends to leverage EPA resources and systems to meet the requirements. The approach will need to be approved by EPA. TRAC staff continue to utilize the PIMS software to schedule and track work, as well as to draft permits and track permit requirements. TRAC staff are working closely with MIS staff to have the system upgraded to meet these requirements.

As mentioned above, staff submitted suggested changes to the Clinton local limits to EPA for review and approval in August 2017. Staff will return the Board if and when approved changes are ready to be adopted into MWRA's Sewer Use Rules. Staff also submitted an updated


³ Only a portion of the penalties assessed in FY17 were actually settled and collected during FY17. Some amounts collected are from penalties or settlements from prior years, while other amounts are still outstanding due to ongoing administrative enforcement procedures and settlement discussions.

Enforcement Response Plan in August 2017 for EPA review and approval pursuant to the Clinton NPDES permit.

BUDGET/FISCAL IMPACT:

In FY17, the TRAC Department recovered \$2,166,984 or 53% of the Department's actual CEB spending (\$4,082,703) through Permit Fees. In addition, TRAC received \$122,750 in penalties which offset an additional 3% of actual direct expense spending.



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: October 18, 2017
SUBJECT: 2016 Deer Island Outfall Monitoring Overview

COMMITTEE: Wastewater Policy & Oversight

INFORMATION
 VOTE

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


 Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

For information only.

MWRA monitors the Deer Island Treatment Plant effluent, as well as the water, sediment, and health of fish and shellfish in Massachusetts and Cape Cod Bays. 2016 was the twenty-fifth consecutive year of baseline (1992-2000) and discharge (2001-present) monitoring. The Outfall Monitoring Overview annually summarizes and analyzes the results of MWRA's monitoring for any environmental effects from Deer Island discharges. As in previous years, no adverse impacts were found. Under its current National Pollutant Discharge Elimination System permit for Deer Island, MWRA must submit this report to federal and state regulatory agencies by November 15th. This staff summary provides the Board with the highlights of MWRA's Outfall Monitoring Overview for calendar year 2016. It takes approximately a year for MWRA's consultants to compile and analyze all of the data from the previous year's outfall monitoring, and finalize the report.

Additionally, this staff summary updates the Board on recent public outreach activities.

DISCUSSION:

Monitoring the environment around MWRA's Massachusetts Bay outfall is a requirement in the Deer Island Treatment Plant's National Pollutant Discharge Elimination System (NPDES) permit. Data from the monitoring studies are carefully analyzed to further the understanding of the Massachusetts Bay system and understand what, if any impacts the outfall may have. Key monitoring results are also compared to 96 thresholds contained in MWRA's Contingency Plan.¹ Required monitoring includes measurements of the Deer Island Treatment Plant's effluent quality, and environmental measurements of water, sediments, and fish and shellfish. Other studies include modeling water quality and continuous monitoring of water quality using instruments on a buoy in Massachusetts Bay.

¹ The Contingency Plan is a requirement of MWRA's NPDES discharge permit for the Deer Island Treatment Plant. It contains a series of more than 20 effluent thresholds and more than 70 numeric thresholds (for example, annual average

MWRA has been monitoring Boston Harbor, Massachusetts Bay, Cape Cod Bay and the outfall area since the early 1990s, and discharge monitoring began in September 2000 when the outfall came on-line. One way potential effects are evaluated is to compare results collected after outfall start-up to results collected before the outfall went on-line (baseline conditions).

2016 was the 16th year of monitoring since the outfall came on-line and was yet another year with no adverse effects from the discharge in the areas monitored. Meanwhile, Boston Harbor continues to see substantial improvements.

Summary of Effluent Quality Monitoring

- In 2016, Deer Island Treatment Plant earned a Platinum 10 Peak Performance Award from the National Association of Clean Water Agencies for ten years of 100% compliance with permit effluent limits;
- 2016 was a very dry year. Mean effluent flow from Deer Island in 2016 was the lowest measured since outfall start-up in September 2000;
- Virtually all flow (99.8%) received full primary and secondary treatment;
- Total Suspended Solids loads from effluent were 10.9 tons/day in 2016, less than 7% of the solids load discharged in the early 1990s (Figure 1);

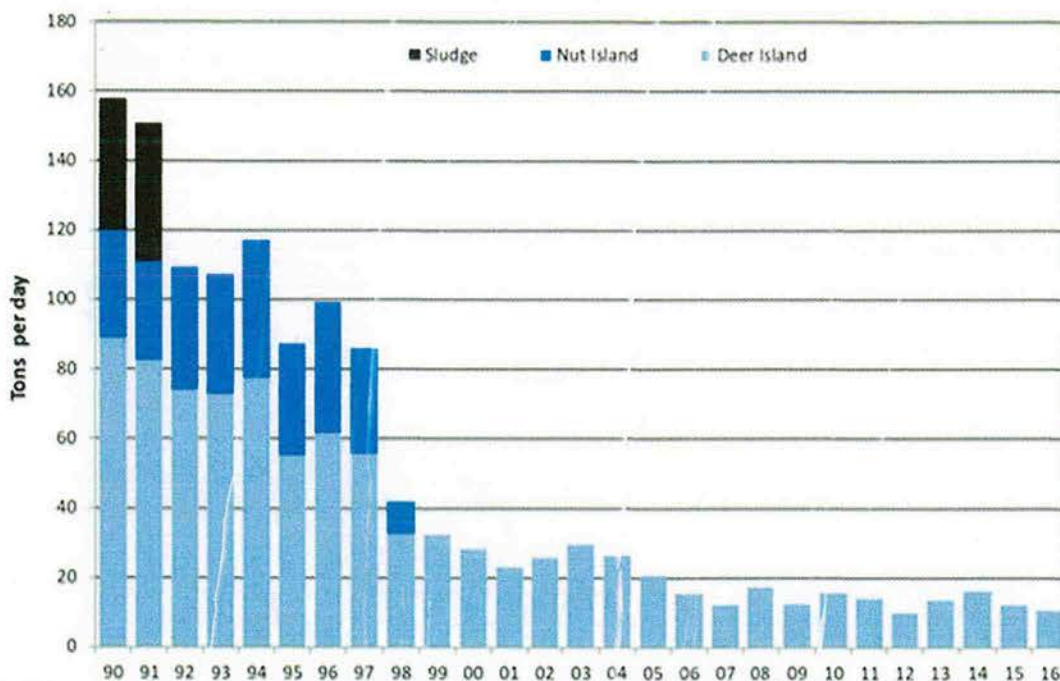


Figure 1. Annual solids discharges. Solids discharges remained extremely low during 2016.

chlorophyll levels near the outfall) calculated from MWRA's environmental monitoring data. An exceedance of a threshold requires rapid notification of EPA, DEP, the Science Advisory Panel, and the public. Some exceedances (for example, red tide), can lead to enhanced sampling for further evaluation of the event.

- Metals loads in Deer Island effluent also remained low in 2016. Metals and organic contaminant (e.g. PCBs) loads in MWRA effluent are much less than were projected by EPA in the late 1980s;
- Sustained low solids and contaminant loadings in the Deer Island effluent are mainly due to treatment process improvements in 2005 made possible by the ability to pump sludge to the Pelletizing Plant (with the completion of the Braintree-Weymouth Tunnel), and record low flows; and
- Monitoring results (for example, a lack of intense algal blooms and the maintenance of healthy dissolved oxygen levels) confirm that MWRA's nitrogen discharge has not had an adverse environmental impact in Massachusetts Bay. Permit-required computer modeling indicates that even a 50% increase in effluent nitrogen would have negligible impacts. The total effluent nitrogen load in 2016 (12,448 metric tons) was 99.6% of its caution threshold (Figure 2). Staff continue to assess changes in nitrogen loads in recent years. It is important to note that the caution threshold was arbitrarily set at 90% of an estimated nitrogen load for the year 2020 (14,000 metric tons/year), and actual loads remain well below that estimate.

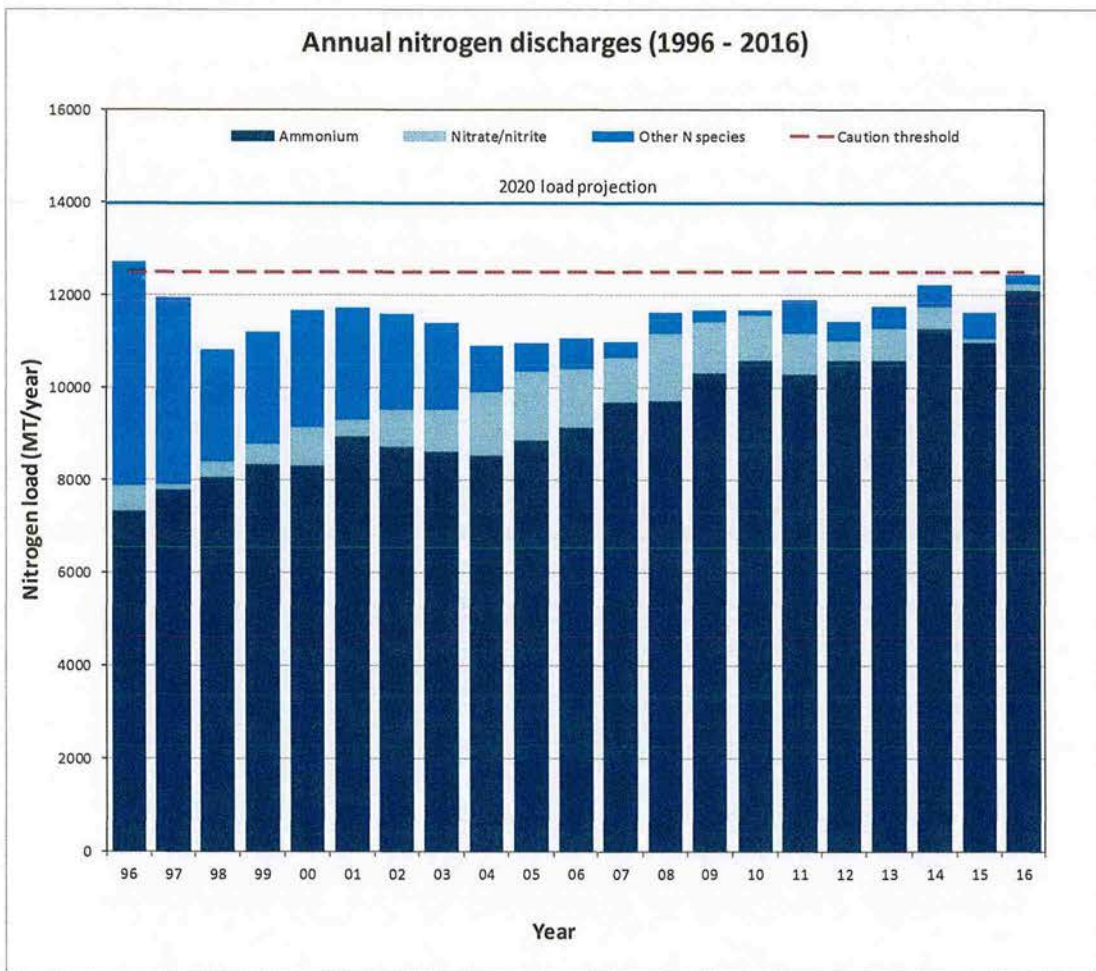


Figure 2. Annual nitrogen discharges. Effluent nitrogen loads were high in 2016.

Outfall Monitoring Plan Results

2016 monitoring results found that:

- No adverse impacts of the outfall discharge on water quality were identified in Massachusetts or Cape Cod Bays;
- Plankton communities remain diverse and normal;
- Flounder liver disease remains low;
- The seafloor animal community is healthy and diverse; and
- The extremely dry conditions in 2015-2016 were observed in the monitoring data. For example, surface salinity was slightly higher in 2016. Observing changes like these in response to natural climate variation builds confidence that outfall impacts could be detected if they occurred.



Figure 3. Water quality sampling off Deer Island, 2016.

Water Quality Monitoring

Nutrients Monitoring in the water column (Figure 3) focuses on the potential impact of nitrogen discharged by the outfall because only about 30% of nitrogen is removed during treatment. The monitoring was designed to address concerns about whether nitrogen could increase blooms of harmful algal species, change the types or amount of plankton (adversely impacting the food web), or cause excess algal growth which could decrease the amount of oxygen in the water.

In 2016, plankton communities in the bays were normal, with no large phytoplankton blooms observed and only a low-level, brief presence of the algae responsible for red tides, which did not result in Massachusetts Bay shellfish bed closures or a Contingency Plan threshold exceedance. There was a small bloom in May 2016 of a potential nuisance alga normally observed in March and April. Although this had been seen several times since 2000, the finding caused a Contingency Plan threshold exceedance. There was no evidence the occurrence was related to the outfall discharge, and regulators and their Outfall Monitoring Science Advisory Panel (OMSAP) have agreed with MWRA's proposal to delete this Contingency Plan threshold.

Dissolved Oxygen

Dissolved oxygen levels in the water near the sea floor (See Figure 4 on next page) were healthy throughout Massachusetts Bay. The decrease from winter into summer is normal, and sometimes continues into October. A storm in September mixed surface and bottom waters, leading to an early recovery in oxygen levels at many stations.

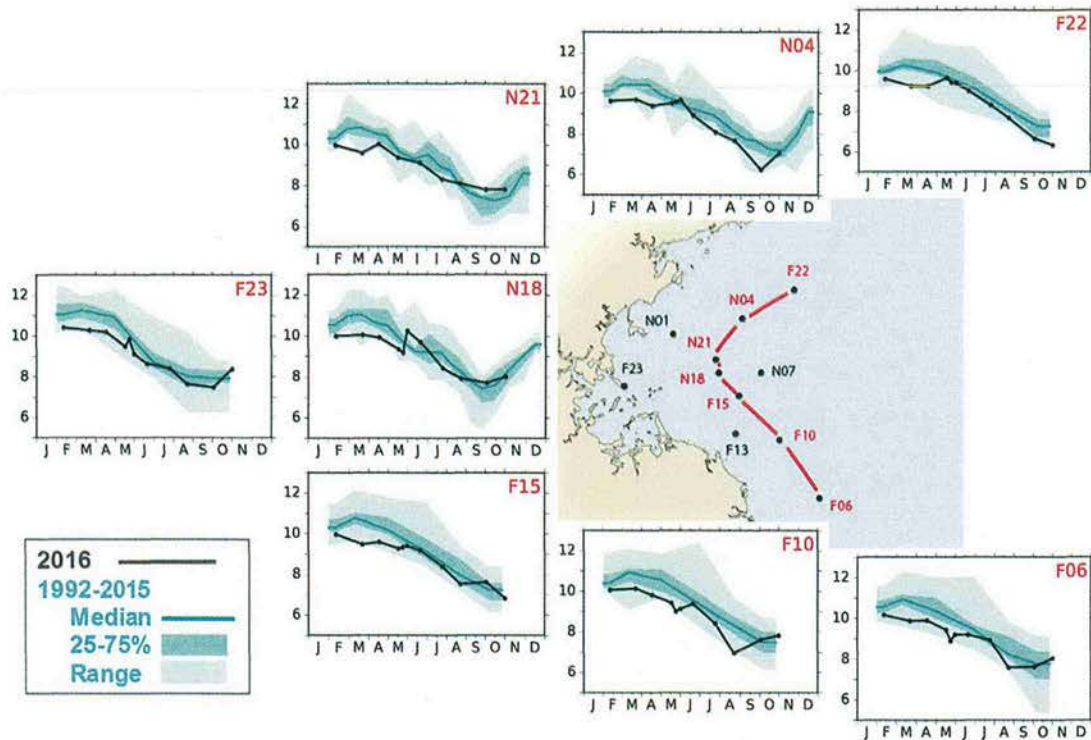


Figure 4. Dissolved oxygen (DO) in 2016 (black lines) at selected MWRA monitoring stations, compared to data since 1992. Results from 1992-2015 are in blue; blue line is the 50th percentile, the darker blue shading spans the 25th to 75th percentiles, and the lighter blue shading spans the range.

The Center for Coastal Studies in Provincetown is collaborating with MWRA to monitor nutrients and plankton in Cape Cod Bay, while independently continuing their decades-long studies of critically endangered Right Whales. In 2015, frigid winter conditions delayed the arrival of Right whales in Cape Cod Bay, and fewer individual whales were observed in the Bay that year. More whales were observed in Cape Cod Bay in 2016. (Figure 5).

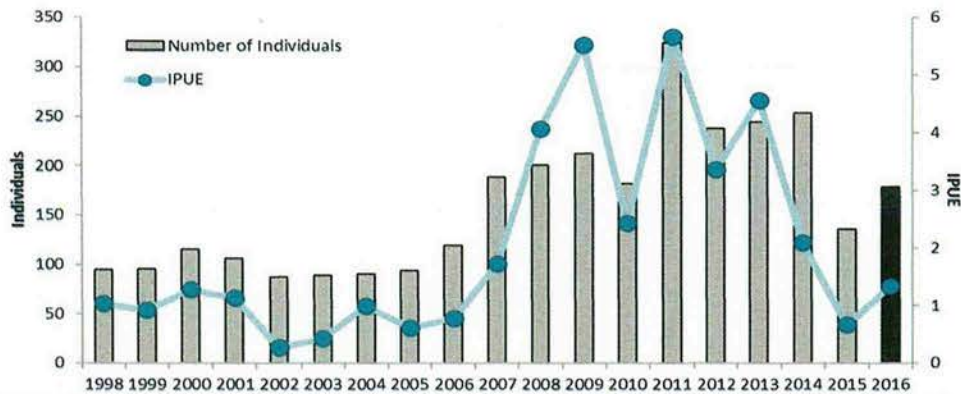


Figure 5. Right Whale sightings in Cape Cod Bay, 1998-2016. Figure from the Center for Coastal Studies. Bars represent the number of different whales observed in Cape Cod Bay each year. The Individuals Per Unit Effort (IPUE) line represents the numbers of whales observed per 100 kilometers of observation.

Bacterial water quality monitoring in Massachusetts Bay

MWRA has been monitoring bacterial water quality in Massachusetts Bay since 1999 (Figure 6), under a Memorandum of Understanding with the Massachusetts Division of Marine Fisheries. Sampling occurs monthly or when large storms result in lower amounts of flow receiving secondary treatment.

Results of this monitoring document that treatment and disinfection at Deer Island, coupled with effective dilution at the outfall, result in sewage tracer bacterial levels well below stringent water quality standards (Figure 7, below).

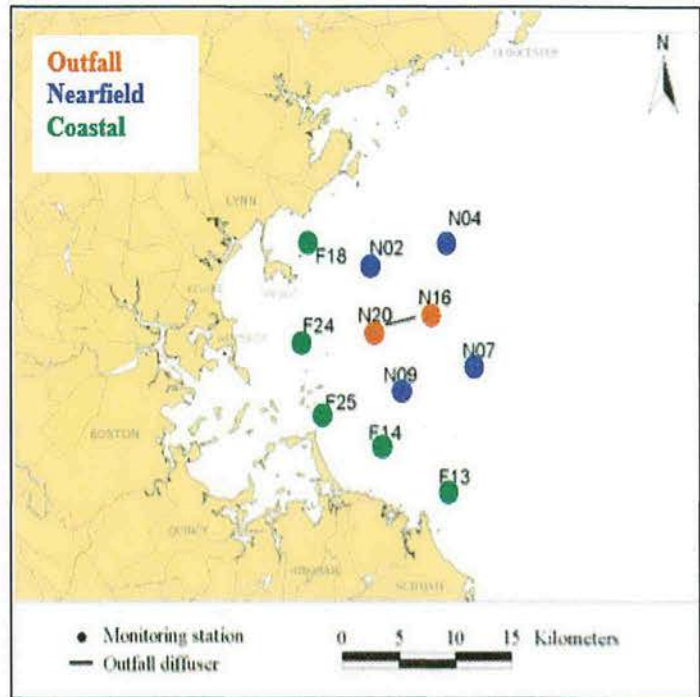


Figure 6. Massachusetts Bay Stations monitored for sewage-indicator bacteria

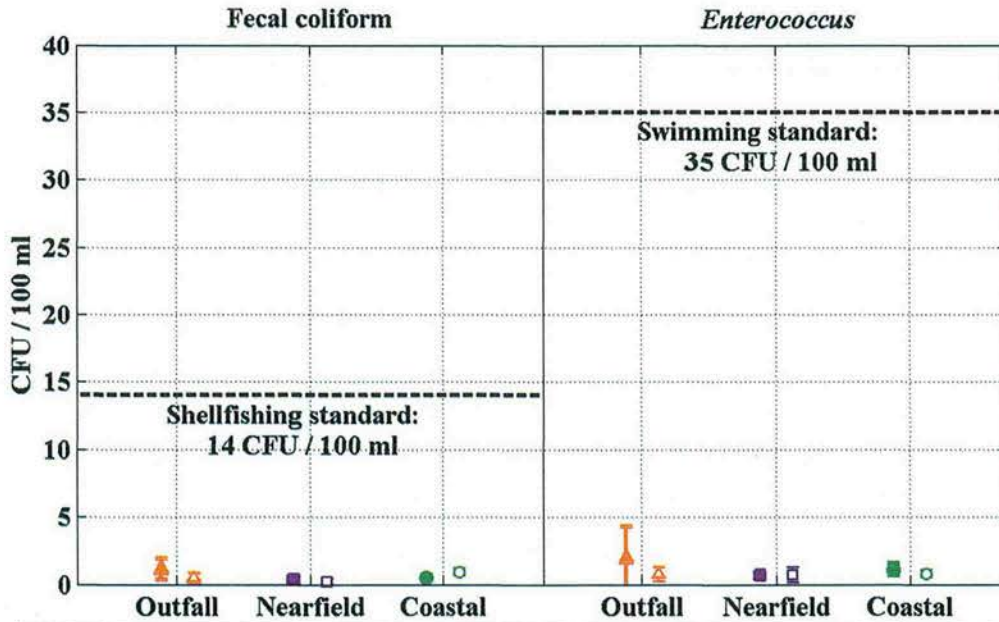


Figure 7. Geometric mean fecal coliform and *Enterococcus* bacteria for 1999-2016 surface (open symbols) and bottom samples (filled symbols) at Mass Bay monitoring stations, compared to strict water quality standards for shellfishing (Fecal coliform) and swimming (*Enterococcus*). Error bars are 95th % confidence intervals.

Bacterial water quality in Boston Harbor

MWRA has been monitoring bacterial water quality in Boston Harbor and its tributary rivers since the late 1980s. At the time, inadequate treatment and an aging infrastructure led to widespread violations of bacterial water quality standards in the Harbor and its tributaries. Since 2012, when the Deer Island Treatment Plant and outfall were operational and most CSO related projects were complete, water quality in most of Boston Harbor and its rivers has met swimming standards most of the time, even during wet weather (Figure 8). Remaining areas where water quality exceedances occur are smaller and the exceedances much less severe than in the past.

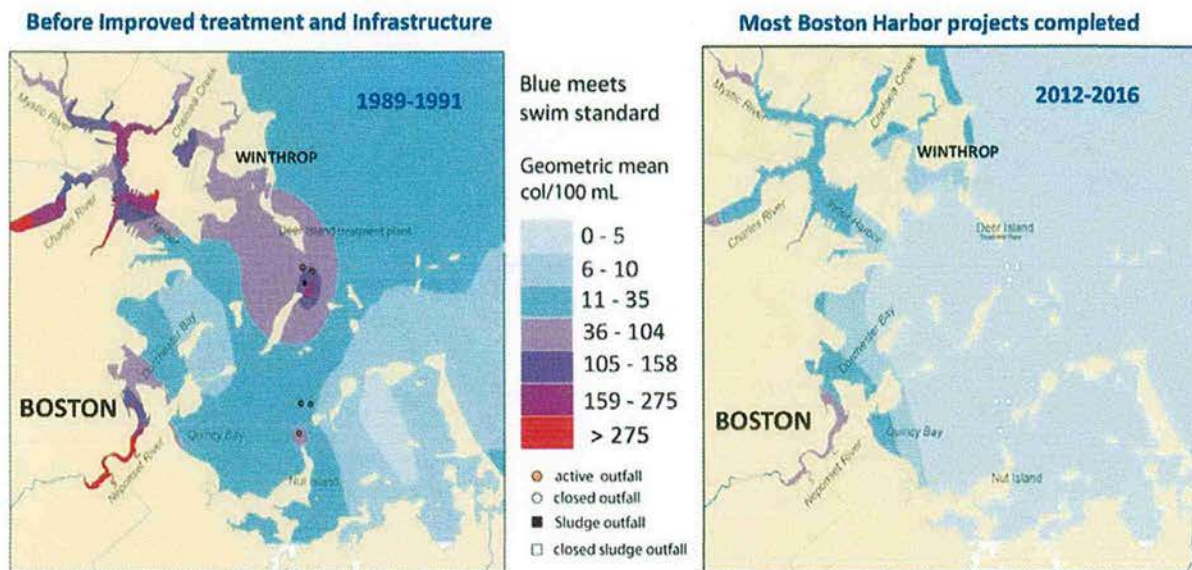


Figure 8. Bacterial water quality in Boston Harbor 1989-91 and 2012-2016. Contours are based on wet weather geometric means of the bacterial water quality indicator, *Enterococcus*

Monitoring Sediments near the Outfall

Sea-floor habitat (the benthos) is a major component of a healthy marine ecosystem and is of particular interest in studies of pollutant effects because many contaminants ultimately end up in the sediments. MWRA's benthic (sea-floor) monitoring (Figure 9, next page) assesses the health of animal communities and concentrations of toxic contaminants in sediments. Studies of the animal communities living in mud find healthy, diverse groups of animals (worms, mollusks, crustaceans) normal to New England.

Prior to 2015, higher than expected biodiversity in the benthic community sampled in the nearfield resulted in exceedances of the Contingency Plan threshold over five consecutive years (2010 – 2014). Regulators and their Outfall Monitoring Science Advisory Panel agreed with MWRA’s evaluation that these resulted from a regional fluctuation, did not represent an adverse effect, and were not caused by the outfall. Also, increased diversity is not normally considered an impact of concern, but these sediment thresholds were established to detect substantial changes from baseline conditions, either increases or decreases. While biodiversity in the nearfield remained high in 2016, levels were slightly below the Contingency Plan threshold, and an exceedance was not triggered. Furthermore, regulators and their OMSAP agreed with MWRA’s recommendation to delete the high diversity thresholds.



Figure 9. Collecting bottom sediment samples in Boston Harbor.

Healthy benthic communities mix oxygenated water deep into sediments (Figure 10), while this irrigation is much slower in communities stressed by pollution. In stressed communities, bacterial activity in the sediments outpaces mixing with oxygenated waters, and the depth where darker, anoxic sediments are found approaches the sediment surface. Another indication that the discharge is having little or no effect on the sediment communities near the outfall (nearfield) is that the depth of oxidized sediments in 2016 was among the deepest measured (see Figure 11, next page).



Figure 10. Collecting cross-section photos of the sea-floor to determine depth of oxygenation, and a sediment cross section from the station closest to the outfall. Light brown and tan sediments are well oxygenated. Hash marks are at 1 centimeter intervals.

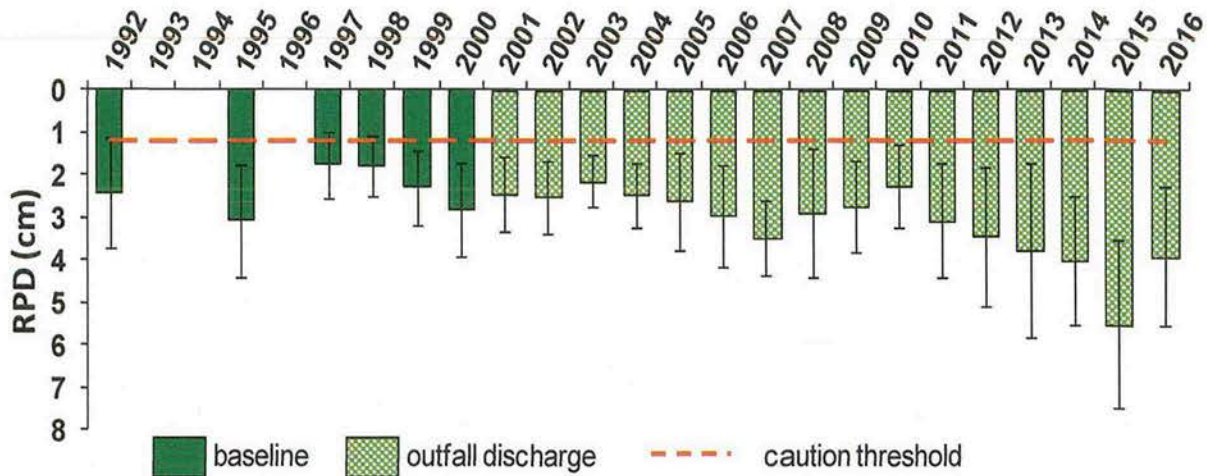


Figure 11. Annual average depth of oxygenated sediments (Mean RPD) in nearfield sediments, 1992-2016. The dashed line is the Contingency Plan threshold. RPD = Redox Potential Discontinuity, the depth at which sediments change from oxic (oxygen present) to anoxic (no oxygen present).

The depth of the mean RPD has increased in nearfield sediments since about 2005. One factor in this deepening appears to be that the frequency of strong northeast storms has been higher in recent years than in the late 1990s. Strong waves associated with these storms stir up sea-floor sediments, even at the 110-foot depths found near the outfall. This mixes oxygenated water deep into the sea-floor, and at a number of stations has increased the fraction of coarser sediments (sand and fine gravel), which tends to increase the flow of oxygenated water through sediments.

Flounder Monitoring

Because flounder live in close contact with the bottom sediments, their health, especially rates of liver disease, is an indication of the effects of contaminants in the sea floor. During the 1970s and 1980s, fin rot and liver disease associated with exposure to pollutants were common in winter flounder taken from Boston Harbor. That sampling program, adopted by MWRA (Figure 12), has continued, documenting substantial declines in tumor precursors as the flounder population recovered in Boston Harbor, with no increases observed in fish caught near the Mass Bay outfall (Figure 13, next page).



Figure 12. Processing flounder off Deer Island Light

Tumor precursors did increase in flounder from Deer Island Flats in 2015 and 2016 while remaining relatively consistent elsewhere. The reasons for the two-year increase in fish from Deer

Island are unclear, but given that the Harbor discharge ended in 2000, are not attributable to the outfall. Recently received data for 2017 monitoring (not shown) document that the level of tumor precursors observed in Deer Island fish decreased to levels similar to those observed in 2012-2014. Actual liver tumors have not been observed in flounder from Boston Harbor since 2004, and tumors have never been observed in flounder caught near the outfall.

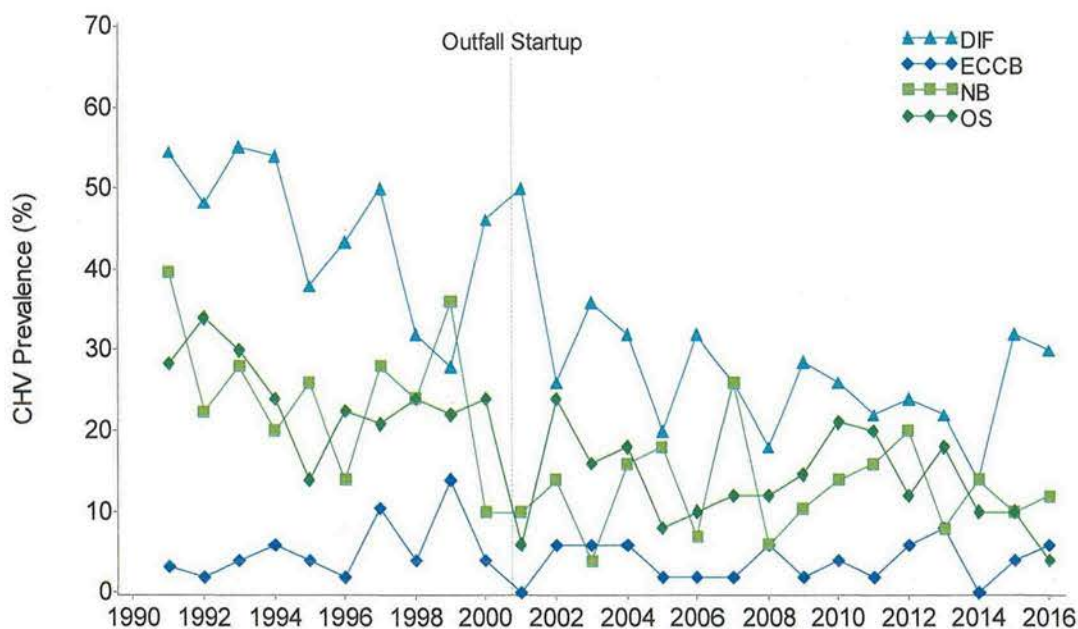


Figure 13. Prevalence of liver tumor precursors 1991-2016 in winter flounder from Deer Island (DIF), eastern Cape Cod Bay (ECCB), off Nantasket Beach (NB) and near MWRA's outfall (OS).

Contingency Plan Thresholds

Except for the nuisance algae (*Phaeocystis pouchetii*) observed in May, all other Contingency Plan thresholds were met in 2016. This includes all effluent quality thresholds. The ambient monitoring measurements of algae biomass, dissolved oxygen, sediment oxygenation, and flounder liver disease were all normal. Regulators and the OMSAP agreed to MWRA's recommendation to delete the *Phaeocystis pouchetii* and high diversity thresholds.

Information outreach efforts: MWRA places an emphasis on informing the public, area environmental groups, and colleagues in academia and the wastewater industry about the findings from its monitoring. Some specific activities in 2017 include:

- MWRA was a major participant in the Boston Harbor and Islands Symposium on April 11-12, 2017, hosted by Boston Harbor Now, National Parks of Boston, the Massachusetts Bays National Estuaries Program, and other groups. This 2-day public meeting included an introductory presentation from Mr. Laskey and a keynote presentation on the impacts of the Boston Harbor Project on Harbor sediment metabolism, which had been conducted as part of MWRA's monitoring. Staff presented an additional eight talks and posters during the meeting on aspects of MWRA's monitoring.

Environmental Quality Department (ENQUAL) staff:

- presented MWRA's evaluation of effluent and environmental *Enterococcus* monitoring results at the January 2017 conference of the New England Water Environment Association, and since then has presented the results to the MWRA Advisory Board other internal and external groups and regulatory agencies;
- presented beach and river monitoring results at a number of meetings of regional watershed associations and the Wastewater Advisory Committee;
- presented monitoring results showing decreasing nutrient levels in Boston Harbor to an EPA-sponsored meeting of regional seagrass researchers;
- meet periodically with researchers and students from local universities (for Example, U/Mass Boston and Northeastern University) and high school groups (for example, the Student Conservation Association) to share results of MWRA's monitoring, learn about current academic research, and discuss emerging issues of environmental concern (for example, climate change and ocean acidification);
- participate in advisory and oversight committees for regional monitoring and outreach groups, including the MIT Sea Grant College program, the Massachusetts Bays National Estuaries Program, and the Northeast Regional Association of Ocean Observing Systems. Staff promote outreach and information gathering on issues important to MWRA;
- In November, will be co-chairing (with scientists from other regions) a session on the restoration of urban estuaries at the Coastal and Estuarine Research Federation conference in Providence. Four presentations derived from MWRA's monitoring studies are planned; and
- developed the first in a planned series of informational pamphlets, summarizing MWRA bacterial monitoring results for the public. Copies will be available at the Board meeting.

BUDGET/FISCAL IMPACT:

In FY10, before the changes to the monitoring plan were implemented, the cost of professional services for a year of outfall monitoring was \$2.35 million. ENQUAL's FY18 Current Expense Budget for required harbor and outfall monitoring, including the water column, sediment, fish and shellfish, instrumented buoys, and water quality modeling, is \$1.4 million, reflecting the savings resulting from changes to the monitoring requirements.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: October 18, 2017
SUBJECT: CSO Post-Construction Monitoring and Performance Assessment
AECOM Technical Services, Inc.
Contract 7572

COMMITTEE: Wastewater Policy & Oversight

John P. Vetere, Deputy Chief Operating Officer
A. Navanandan, P.E., Chief Engineer
Jeremy R. Hall, Project Manager
Preparer/Title

 INFORMATION

 X VOTE


Michele S. Gillen

Director of Administration


Michael J. Hornbrook

Chief Operating Officer

Since 1985, and with the assistance of its member communities with combined sewer overflows (CSO), MWRA has achieved 182 of the 184 CSO related milestones in Schedule Seven of the Federal District Court Order in the Boston Harbor Case (U.S. v. M.D.C., et al., No. 85-0489-RGS). The last CSO (and overall Boston Harbor Cleanup) project milestones were achieved in December 2015, with completion of construction of the last of the 35 projects in MWRA's approved CSO control plan. Two milestones remain in the Court's Schedule Seven:

Jan. 2018 MWRA to commence three-year performance assessment of its Long-Term CSO Control Plan. The assessment shall include post-construction monitoring in accordance with EPA's Combined Sewer Overflow (CSO) Policy, 59 Fed. Reg. 18688 (Apr. 19, 1994).

Dec. 2020 MWRA to submit results of its three-year performance assessment of its Long-Term CSO Control Plan to the EPA and DEP. MWRA to demonstrate that it has achieved compliance with the levels of control (including as to frequency of CSO activation and as to volume of discharge) specified in its Long-Term CSO Control Plan.

RECOMMENDATION:

To approve the award of Contract 7572, CSO Post-Construction Monitoring and Performance Assessment to AECOM Technical Services, Inc. and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the amount of \$2,924,295.09, for a contract term of 1,246 calendar days from the Notice to Proceed.

DISCUSSION:

Purpose and Scope of Services

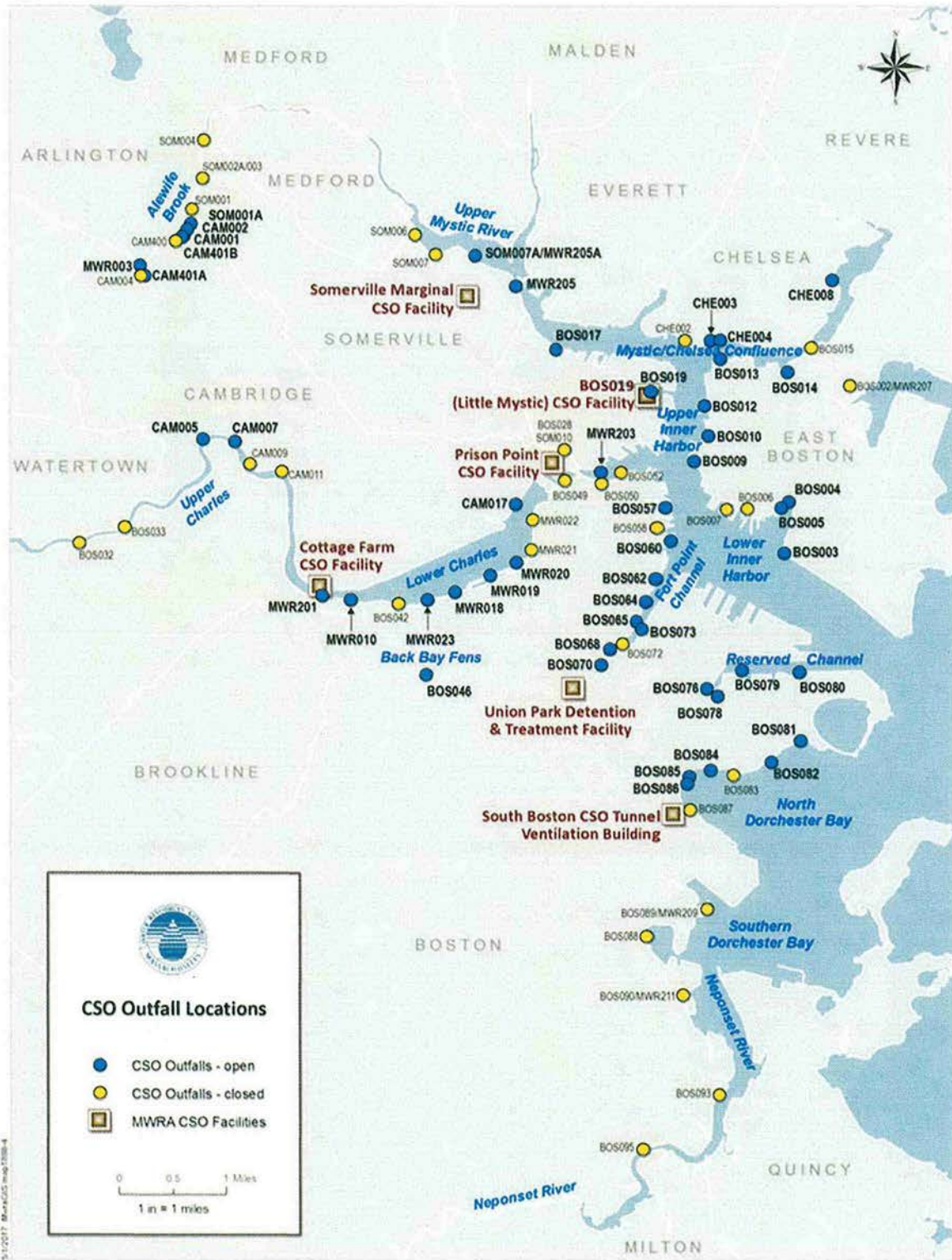
On May 1, 2017, MWRA submitted a work plan for the court-required CSO post-construction monitoring and performance assessment to the U.S. Environmental Protection Agency and the Massachusetts Department of Environmental Protection in compliance with a condition in the Charles River and Alewife Brook/Upper Mystic River CSO variances. MWRA developed the work plan to satisfy three key objectives: 1) be able to demonstrate to EPA, DEP and the Court that MWRA has attained the levels of CSO control in the approved Long-Term Control Plan (LTCP), including the frequency and volume of discharge in a typical rainfall year (MWRA's approved "Typical Year"¹); 2) perform the work in accordance with EPA's National CSO Control Policy, including its *CSO Post Construction Compliance Monitoring Guidance, May 2012*; and 3) confirm compliance with state water quality standards, as required by the EPA Guidance. Massachusetts Surface Water Quality Standards require that CSO discharges are eliminated in Class B or SB – "fishable/swimmable" – waters or meet Class B or SB criteria at least 95% of the time (Class B_(CSO) or SB_(CSO)) and be limited to the discharge levels in the approved LTCP. MWRA's LTCP has eliminated CSO discharges to Class B/SB waters, such as the beaches of South Boston, and is predicted and intended to bring CSOs into compliance with Class B or SB at least 98% of the time in all receiving water segments where CSO discharges will remain.

The work plan submitted to EPA and DEP and the scope of services include five key components: extensive metering of CSO discharges; hydraulic modeling, including the determination of remaining CSO discharges in the Typical Year; CSO compliance evaluations with respect to the court ordered level of control; receiving water quality monitoring; and receiving water quality characterization and analyses. This contract will provide consultant services for all components except receiving water quality monitoring. Receiving water monitoring, which MWRA has conducted since 1989, will continue to be performed by MWRA staff, and MWRA will share its historical and forthcoming data with the consultant for analyses that are intended to characterize remaining water quality impacts of CSO and compare those impacts to the intended benefits of MWRA's LTCP, which were the basis for water quality standards determinations made by DEP and approved by EPA with approval of the LTCP two decades ago.

Attainment of the LTCP Typical Year levels of control will be confirmed by the Consultant utilizing MWRA's collection system model (InfoWorks), which will be updated and verified or recalibrated as warranted with extensive system flow and overflow data from existing MWRA and community meters and from temporary meters installed and maintained by the Consultant. The Consultant will collect, verify and manage the meter data, quantify CSO discharges using the data, and validate/correlate the quantified discharges against rainfall and system conditions prior to using the field quantified discharges to verify or recalibrate the model. The Consultant will also update the model as new information about system conditions, such as community progress with sewer separation work or other completed community improvements, becomes available.

¹ From the outset of LTCP planning in 1993, MWRA's EPA-approved rainfall Typical Year has been the basis for development, recommendation and approval of MWRA's LTCP, establishment of the federal court mandated levels of control, and assessment of system performance.

The Consultant will present the meter data and model results, as well as rainfall analyses, in semiannual reports during the three-year monitoring period. The semiannual reports will allow MWRA to track and report the progress of work toward confirmation of the long-term levels of control in 2020. See map of CSO outfall locations below.



The Consultant will evaluate water quality standards compliance by 1) confirming that certain CSO outfalls are closed and that the discharge levels at remaining active outfalls meet the LTCP levels of control, and 2) demonstrating that the remaining discharges have limited contribution to water quality violations in accordance with the LTCP's goals and regulatory approvals (i.e. at least 98% compliance). Toward this end, the Consultant will perform statistical analyses and other evaluations of the extensive receiving water quality data collected and provided by MWRA.

At the end of the monitoring and performance evaluation period, the Consultant will complete a Post-Construction Compliance Monitoring and Performance Assessment Report and a Receiving Water Quality Analysis Report that MWRA is required to submit to EPA and DEP by December 31, 2020. MWRA's overarching goal for these reports is to show compliance with the LTCP levels of control and water quality standards and bring MWRA's federal court obligations to a close.

Procurement Process

MWRA utilized a one-step Request for Qualifications Statements/Proposals (RFQ/P) with the following evaluation criteria and assigned points: Cost - 25 points; Technical Approach – 22 points; Qualifications and Key Personnel – 20 points; Experience/Past Performance on Similar Non-Authority Projects and Past Performance on Authority Projects – 18 points; Capacity/Organization and Management Approach – 12 points; and MBE/WBE participation – 3 points.

On August 25, 2017, MWRA received proposals from four firms: AECOM Technical Services, Inc.; Arcadis U.S., Inc.; Hazen and Sawyer, P.C.; and Stantec Consulting Services, Inc. Their proposed costs and levels of efforts are presented in Table 1.

All four firms proposed ADS Environmental Services as a sub-consultant for the flow metering services. ADS has extensive CSO metering experience, including work for Boston Water and Sewer Commission, New York City Department of Environmental Protection and MWRA.

Table 1: Proposed Costs and Levels of Effort

PROPOSER	TOTAL COST*	LEVEL OF EFFORT
Hazen and Sawyer, P.C.	\$2,879,740.41	7,192 hours
AECOM Tech. Serv. Inc.	\$2,924,295.09	9,734 hours
<i>Engineer's Estimate</i>	<i>\$3,234,704.00</i>	<i>9,583 hours</i>
Arcadis U.S.	\$3,277,815.34	11,422 hours
Stantec Consulting Services, Inc.	\$3,350,846.69	13,899 hours

*Reflects corrections made due to mathematical errors.

Table 2: Selection Committee Scores and Ranking

PROPOSER	TOTAL POINTS	*ORDER OF PREFERENCE/ TOTAL SCORE	FINAL RANKING
AECOM Technical Services, Inc.	395.7	5	1
Arcadis U.S.	346.1	13	2
Hazen and Sawyer, P.C.	330.62	14	3
Stantec Consulting Services, Inc.	283.6	18	4

*Order of Preference represents the sum of the 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.

AECOM Technical Services, Inc. was unanimously ranked first by the Selection Committee and was the second lowest overall total cost. The Selection Committee was in agreement that AECOM's proposal included an appropriate level of effort and distribution of the work. The MWRA Engineer's Estimate of total cost is \$3,234,704, and AECOM proposed a total price of \$2,924,295. The Engineer's Estimate included a level of effort of 9,583 hours. AECOM's proposed level of effort is 9,734 hours. AECOM proposed a discounted fixed fee rate of 10% instead of the allowable 12% and proposed capping its overhead rate at its current MWRA approved rate of 135.09% for the duration of the project resulting in the lowest indirect cost (\$590,823, or \$173,000 less than the average) and lowest average hourly rate (\$116, not including Other Direct Costs). AECOM has the highest project manager hours at 2,414 hours, very close to the Engineer's estimated level of effort. AECOM's proposed project team has excellent qualifications and experience as demonstrated in the resumes of the key personnel, and the firm has the capacity and depth of resources to complete the work. Based in Boston and Chelmsford, AECOM's proposed team (including metering sub-consultant ADS) has worked together on numerous relevant projects, including BWSC's Metering and Model Improvement Program. AECOM's overall past MWRA and non-MWRA similar project performance has been very good. AECOM brings local and national knowledge of CSO regulation, LTCP development and assessment and strong understanding of MWRA's and the community's wastewater system.

Arcadis U.S. was the second-ranked firm. Its proposed team demonstrated strong water quality and modeling experience. Arcadis' proposal had the second highest cost and the second highest hourly rate, attributed to the second highest overhead rate and a proposed fee of 12%. The Selection Committee expressed concern that the project manager would be based in Indianapolis and had low proposed hours, with much of the high level direct contact with MWRA proposed to be conducted by the less experienced project engineer. In addition, many of the other key personnel would be located in various parts of the country, and Arcadis' proposal did not demonstrate a plan for managing these resources effectively.

Hazen and Sawyer, P.C. proposed the lowest number of hours at 7,192 and, despite proposing the lowest total cost, proposed the highest average hourly rate due in part to the highest proposed overhead rate of 179.40%. Selection Committee members raised concern that the firm would not be able to complete the work with approximately 2,400 hours less than the engineers estimate, especially since the project team and firm did not demonstrate similar experience with large CSO systems. The Selection Committee also noted that the proposed project manager had excellent internal and external references, but the Committee was concerned with the project manager's

ability to meet the firm's commitment of 60% of his time to this project with his other many MWRA and non-MWRA project commitments.

Stantec Consulting Services, Inc. had the highest proposed cost and 33% higher level of effort than the average level of effort proposed by the other firms. Stantec's technical approach did not demonstrate a clear reflection of MWRA's scope or project needs. The Selection Committee determined that the additional hours and cost proposed by Stantec did not provide additional value to the project as scoped.

Staff have determined that AECOM Technical Services, Inc. possesses the experience, skills, abilities and integrity necessary to perform the work under this contract, and is qualified to do so. Staff have further determined that the price is reasonable and complete. Therefore, staff recommend award of Contract 7572 to AECOM Technical Services, Inc., in an amount not to exceed \$2,924,295.09. Based on discussions with AECOM, staff believe that they can complete the specified scope of work for the proposed cost.


BUDGET/FISCAL IMPACT:

The FY18 CIP includes a budget of \$3,000,000 for Contract 7572. The award amount is \$2,924,295.

MBE/WBE PARTICIPATION:

The Affirmative Action and Compliance Unit established a MBE/WBE participation requirement for this project of 0%. AECOM proposed 0% MBE and 4.0% WBE, which becomes a requirement of the contract.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: October 18, 2017
SUBJECT: Supply and Delivery of Polymer to the Deer Island Treatment Plant.
BASF Corporation
WRA-4115, Amendment 1

COMMITTEE: Wastewater Policy & Oversight

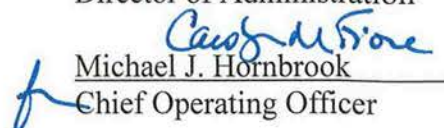
David Duest, Director, DIWWTP
Carolyn Francisco Murphy, Director of Procurement
Preparer/Title

___ INFORMATION

X VOTE


Michele S. Gillen

Director of Administration


Michael J. Hornbrook
Chief Operating Officer

This two-year purchase order to provide polymer to Deer Island was competitively bid and issued on February 24, 2016 under delegated authority. The contract allows for a two-year extension option upon conclusion of the first two years. Staff recommend approval of Amendment 1 to execute the two-year extension option.

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Amendment 1 to Purchase Order 1152979 for the supply and delivery of polymer to the Deer Island Treatment Plant with, BASF Corporation, exercising the option to renew and increasing the Purchase Order amount by \$693,900, from \$637,200 to \$1,331,100, and extending the contract term by two years, from March 1, 2018 to February 28, 2020.

BACKGROUND:

Waste secondary sludge at Deer Island is thickened in centrifuges prior to being pumped to the digesters to ensure proper breakdown. Staff use polymer as a sludge-thickening agent in the centrifuges because it increases the efficiency of solids separation and capture. Removal of excess water results in thicker sludge, thereby reducing pumping and sludge storage requirements.

Competitively bidding a polymer contract is a lengthy process because of the testing that is necessary to ensure that the lowest bidder's product meets certain performance requirements and that MWRA will, in fact, be paying the lowest cost. Unit cost alone cannot accurately determine the operational cost of polymer use. This is because a larger quantity of one vendor's product (at

a lower unit cost) may be required to achieve the same operational results as a smaller quantity of another vendor's higher-priced product.

Original Procurement Process

The original procurement for this polymer purchase order contract was a publically advertised, two-stage RFQ/B process. In the qualifications stage, vendors were required to meet minimum threshold requirements, including being in the business of manufacturing polymers and having held at least three recent contracts to provide polymer for similar applications. Four vendors submitted qualifications; and all four met the minimum threshold requirements. Each qualified vendor then completed preliminary bench tests to recommend one polymer for testing in MWRA's sludge centrifuges.

Deer Island staff used samples of each vendor's polymer selected in the preliminary bench testing. Pursuant to the specifications, a vendor's polymer was required to achieve a solids capture rate of 85% to be considered. Each vendor was assigned one day of set-up followed by one day of performance testing. Staff used the same centrifuges, running at the same operational settings, throughout the testing of all polymers.

Per the bid specifications, each vendor had the opportunity to have a sales representative and/or an operations expert present to witness the testing. MWRA staff oversaw the entire testing protocol to keep tight controls on the performance test and MWRA's Department of Laboratory Services performed all of the analyses and calculated the solids capture results. All four vendors' polymers participated in full-scale testing.

Deer Island has two polymer make-up systems for the Centrifuge Facility. One polymer system was used to continue normal sludge thickening operations, while the second polymer system was used to make up batches of the polymer being tested. As a result, only one vendor's product could be evaluated at a time. Following completion of full-scale testing and data verification, bidders were asked to submit final polymer prices (on a per pound basis).

Staff used conventional mathematical formulas to compute the lowest operational cost on the basis of "*average polymer cost per ton of sludge processed*," using the full-scale test results. The table on the following page shows the bid results. The column labeled "BID PRICE PER POUND" is the vendor's submitted unit price. The column labeled "AVG. LBS. OF POLYMER/TON OF SLUDGE PROCESSED" is the result of each vendor's full-scale performance testing. Finally, the column labeled "AVG. POLYMER COST/TON OF SLUDGE PROCESSED" is the derived value from the other two inputs where staff computed the lowest operational cost.

BIDDER	BID PRICE/ PER POUND	AVG. LBS. OF POLYMER/TON OF SLUDGE PROCESSED	AVG. POLYMER COST/TON OF SLUDGE PROCESSED
BASF Corporation	\$0.708	12.2	\$8.638
Kemira Water Solutions	\$0.77	12.03	\$9.263 (7.2% higher)
Polydyne, Inc.	\$0.60	16.24	\$9.744 (12.8% higher)
Solenis, LLC	\$0.88	18.7	\$16.456 (90.5% higher)

The results confirmed that simply selecting a polymer on a lowest-unit-price-per-pound basis without measuring performance does not accurately determine the lowest operational cost. Although Polydyne, Inc. offered the lowest unit bid price (\$0.60) per pound of polymer, testing demonstrated that it took approximately 16.24 pounds of Polydyne's product to achieve at least an 85% solids capture rate, whereas only 12.2 pounds of BASF Corporation's (BASF) product were needed to achieve the same results. This difference means that BASF's operational cost was less than all of the other bidders, and was thus the lowest bidder.

At the time of the original bid, staff estimated that 900,000 pounds of polymer would be required during the two-year contract term. The total product used is subject to the day-to-day variations in sludge quality and thickness, which is influenced by daily plant flow and seasonal microbiology variations in the secondary process. BASF's product has performed well during the course of the contract, and approximately 11 pounds of polymer have been required to treat each ton of sludge over the contract period. This is about 1 pound per ton less polymer than indicated by the trial performance.

Based upon the bid results, on February 24, 2016 Purchase Order 1152979 was issued under delegated authority to BASF in the amount of \$637,200, for a term of two years, to supply polymer at the bid price of \$0.708 per pound. The bid documents for the original procurement included a two-year extension option at the election of the Authority, subject to mutual agreement between MWRA and the vendor as to the unit price of the polymer for the extension period.

This Amendment

Staff contacted BASF to negotiate the per pound price of the polymer should the Authority elect to exercise the two-year extension option. Staff requested that BASF hold its current \$0.708 per pound price for the two-year extension period. BASF initially offered a per pound price of \$0.808 for the extension period (a 14.1% increase from current contract prices), citing substantial raw material cost increases. Staff rejected BASF's offer. After further discussions with staff BASF submitted a "best and final" offer of \$0.771 per pound (an 8.89% increase from current contract prices) for the full two year extension.

Market indicators show that since the original procurement in January 2016, prices for the raw materials needed to manufacture polymer have increased significantly. BASF represented that based upon its data the unit price of propylene, the largest component of polymer, increased 22.2% since January 2016. According to the Standard & Poors Global Platts Petrochemical Index, from

July 2016 through July 2017 the unit price of propylene increased 19.3%. In reviewing other indices, staff determined that other raw materials used in the production of polymer have seen more significant increases – caustic soda (29.6%), methanol (39.7%) and crude oil (47.2%).

After reviewing current market conditions, staff are of the opinion that BASF's per pound price of \$0.771 for the two-year extension period is reasonable. In addition, staff have been satisfied with the services and the products provided by BASF under the existing contract. The company has been responsive to requests and has performed in accordance with the terms of the current contract.

For the reasons set forth above, staff recommend that the Board approve Amendment 1 to the Purchase Order with BASF increasing the Purchase Order amount by \$693,900, from \$637,200 to \$1,331,100, which represents a per pound price of \$0.771 for the same anticipated 900,000 pounds, and extending the contract term by two years, from March 1, 2018 to February 28, 2020. This is a not to exceed sum, as MWRA will only pay for product actually received.

BUDGET/FISCAL IMPACT:

There are sufficient funds available for the first portion of this contract in the FY18 Current Expense Budget. Appropriate funding for the remaining term or this two-year contract extension will be included in subsequent Proposed CEB requests.

MBE/WBE PARTICIPATION:

BASF Corporation is not a certified Minority- or Women-owned business.

STAFF SUMMARY

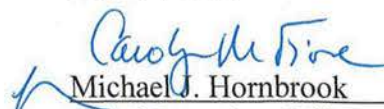
TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: October 18, 2017
SUBJECT: Remote Headworks Upgrade
Arcadis U.S., Inc.
Contract 7206, Amendment 5



COMMITTEE: Wastewater Policy & Oversight

 INFORMATION
 X VOTE

A. Navanandan, P.E., Chief Engineer
Margery J. Johnson, Program Manager
Preparer/Title



Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Amendment 5 to Contract 7206, Remote Headworks Upgrade, with Arcadis U.S., Inc., increasing the contract amount by \$846,000, from \$8,786,831 to \$9,632,831, with no increase in contract term.

BACKGROUND:

On June 30, 2010, the Board approved the award of Contract 7206 to Malcolm Pirnie, Inc., now Arcadis, U.S., Inc. to provide design and construction administration services for the upgrade of the three remote headworks facilities, Chelsea Creek, Columbus Park, and Ward Street. These facilities provide preliminary treatment and flow control of the wastewater from MWRA's Northern Service Area before reaching the Deer Island Treatment Plant. Preliminary treatment 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.

Following completion of Preliminary Design, staff reevaluated the design and construction sequencing for the project. Informational staff summaries were presented to the Board on January 18, 2012 and June 6, 2012 to discuss concerns with upgrading all three facilities at once, and to evaluate the best options to proceed. It was decided that Final Design for the Columbus Park and Ward Street Headworks would be performed under a separate contract(s), and that Contract 7206 would include Chelsea Creek Headworks only. The complexity of the design issues encountered for the Chelsea Creek Headworks project has proven this decision to be a prudent one.

The Chelsea Creek Headworks was constructed in the 1960s and received its last significant upgrade in 1987. This project is a major upgrade of the entire facility and includes automation of the screenings collection and solids conveyance system, allowing the facility to be unstaffed during dry weather flow. The grit collector systems will be replaced, and existing climber screens will be replaced with catenary screens. Influent and effluent sluice gates will be replaced, and the gates' hydraulic operating system will be replaced with electric gate actuators. HVAC systems will be upgraded, a new carbon adsorber odor control system will be installed and redundancy will be added

to both systems. Ancillary systems including the emergency generator, fuel oil tank, and transformer will be replaced. Instrumentation and control systems will be upgraded, the communications tower will be replaced and a communications building will be 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 are also included.

DISCUSSION:

The Board approved Amendment 1 to Contract 7206 on June 27, 2012, authorizing staff to proceed with Final Design and Construction Administration (CA) services for the Chelsea Creek Headworks only. This was a no cost amendment that included credits for the elimination of Columbus Park and Ward Street from the contract, and additional costs associated with new scope identified during Preliminary Design and the addition of CA Services originally intended to be provided by a Construction Management firm. The Amendment included a 15-month time extension for the issuance of the Notice to Proceed for Final Design Services while additional evaluations were conducted and discussed. When Amendment 1 was approved, it was estimated that there would be a Notice to Proceed for construction in February 2014, with a construction duration of 42-months.

On June 18, 2013, the Executive Director approved Amendment 2, under delegated authority, to proceed with evaluations of available hurricane protection alternatives, wastewater heat recovery feasibility, and the technical feasibility of an alternative location for odor control equipment. Amendment 2 also included funding for Phase 3 Polychlorinated Biphenyl (PCB) testing as required by the Environmental Protection Agency; and additional soil and groundwater sampling and analysis and a Phase 1 Report associated with Massachusetts Contingency Plan Services, as required by Department of Environmental Protection, in response to soil and groundwater contamination detected at the site.

Amendment 3 was approved by the Board on March 12, 2014 for additional design scope of work identified in Amendment 2 evaluations to incorporate flood protection, relocation of the odor control equipment to the Congress Avenue Extension on the south side of the facility, the relocation of a portion of MWRA water main Section 37 within the Congress Avenue Extension, and associated MCP Services. Also included in Amendment 3 was additional level of effort to allow the option of utilizing natural gas for heating, design of electric actuators for the sluice gates, and new connections to the City of Chelsea's water system for fire and potable water supply. Amendment 3 included funding for an MCP Phase II Report and Risk Characterization, and preparation of a Response Action Outcome and Revised Activity and Use Limitation for the headworks site.

The Board approved Amendment 4 on September 14, 2016. The Amendment included an increased level of effort for bidding services based on the number of site visits held, bidder questions received, addenda issued and an extended bidding duration. Additional level of effort for construction phase engineering services associated with the increased complexity of the final design was also included, along with a 38-month increase in the contract term to account for previously extended design periods and an extended bidding duration. Other Amendment 4 increases included adding e-Construction Software Services and an increased level of effort to perform SCADA Integration,

Start-up, Testing and Documentation given the final design's multi stage plan to keep control room equipment operational during construction.

Award of Construction Contract 7161 Chelsea Creek Headworks Upgrade, to BHD/BEC 2015, A Joint Venture, in the amount of \$72,859,000, was approved by the Board on September 14, 2016, and a Notice to Proceed for construction was issued on November 22, 2016.

This Amendment

Amendment 5 will increase the contract amount by \$846,000, from \$8,786,831 to \$9,632,831 with no increase in the contract term. The cost includes monies for evaluations and additional design for out of scope items as well as additional level of effort for CA services associated with the complexity of construction and out of scope items.

Construction Administration Services \$690,000

Construction Administration Services include preparation of conformed documents, responding to contractor Requests for Information (RFIs), review of submittals, preparation of change orders and record drawings, and coordination of biweekly project meetings.

The number of RFIs has been exceeded and an additional 250 RFIs are anticipated for the project. The number of RFIs was estimated by staff during the development of Amendment 4 based on the number of RFIs submitted on previous MWRA projects. However, the project has proven to be more complex than other MWRA construction projects, resulting in a greater number of RFIs and associated level of effort for each. The cost associated with these services is \$300,000.

The project is more complex than anticipated when the consultant contract was executed; the scope included biweekly meetings, which is typically adequate for MWRA projects. Due to the complexity of this project coordination and problem resolution, meetings are being held at least weekly. Additional estimated level of effort for meetings included in this Amendment has a cost of \$190,000.

An independent assessment of cost and scope is typically required by the Authority for all change orders over \$100,000. These independent assessments were originally intended to be included in a separate Construction Management contract. This Amendment adds a level of effort to the Construction Administration Services for independent cost estimates associated with Contractor change order requests. The cost associated with this out of scope service is \$140,000.

Amendment 4 added e-Construction Software Services to this contract. This software allows the MWRA, the Contractor, the Design Consultant and the REI Consultant centralized electronic access to all project information. e-Construction has been successful in communications, and tracking and approvals of workflows for this large, complex, multiyear construction project. Configuration of protocols for the Authority's workflow processes for RFIs were more complex than anticipated, and additional workflows for Change Orders and Daily Reports have been added. This Amendment includes additional level of effort associated with this work at a cost of \$60,000.



After abatement of surfaces containing PCB paint, PCBs will remain in the porous substrate of concrete surfaces up to ½” to 1” deep. Although these surfaces are being encapsulated in compliance with an EPA approved remediation plan, coring into these surfaces for penetrations or anchors requires additional measures to contain the PCB waste generated by these activities. Scope for the development of additional procedures and exposure assessment guidelines for coring and penetrations into PCB containing substrate, and additional level of effort for certified industrial hygienist and PCB remediation support is required and is included in this amendment at a cost of \$40,000.

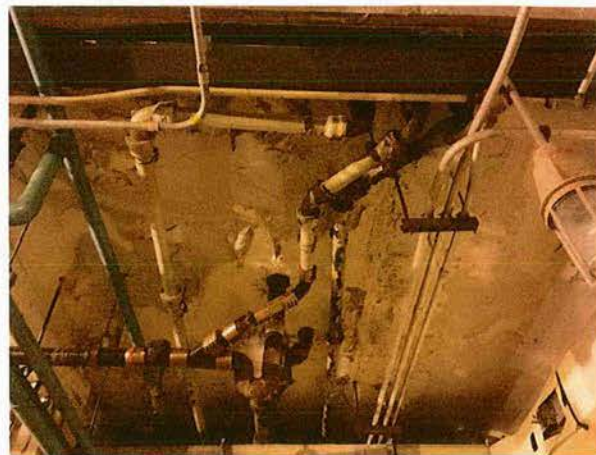
Mini-containment for PCB coring

To permit future water main maintenance/service, a change to the location of the Section 37 water main coupling in relation to the odor control exhaust stack foundation was required. The relocation of the coupling shifted the location of the foundation for the odor control equipment and the alignment of the Section 37 water main by approximately eleven feet to the east. The additional design work to address water main restraints and to assess any impact to air flow through the odor control system is included in this amendment. The cost associated with this work is \$40,000.

This Amendment includes out of scope design to replace existing water, sanitary and drain piping that was not included in the original contract; recent inspection revealed the poor physical condition of this piping. This change will result in the replacement of all water and drain piping. The cost of this design is \$20,000.



Existing water service piping



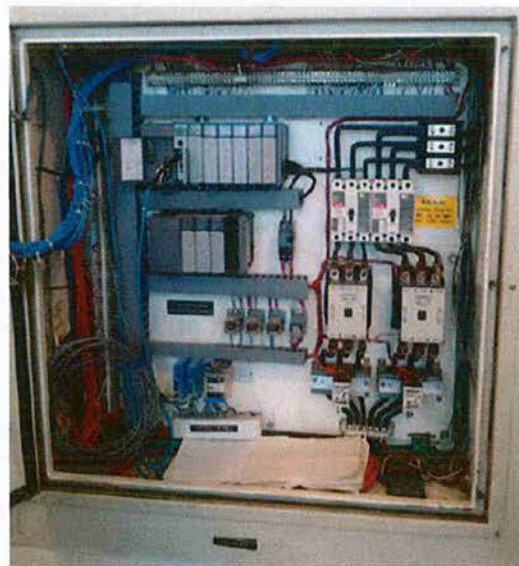
Existing sanitary drain piping

During design, Arcadis worked with staff to develop a control room consolidation plan which included a number of phased steps to relocate existing conduits, panels and devices to make room for the new conduits, panels and devices in the same location. After commencement of construction it was realized that an existing panel which controls the influent and effluent sluice gates could not be relocated as originally planned. The sluice gates controlled by this panel provide critical facility flow control. During rain events, gate control is critical for maintaining levels upstream of the facility to prevent unnecessary overflows as well as protecting Chelsea Creek Headworks from

flooding. It is anticipated that this gate panel would take three weeks to relocate. This duration is unacceptable to Operations as weather conditions cannot be predicted this long in advance to ensure a dry weather pattern. This Amendment includes design of a revised plan to resolve this issue at a cost of \$20,000.



Sluice gate control panel – front



Sluice gate control panel – inside

The sequencing of the new electric room, and relocation of control panels required to keep old and new equipment operational has proved to be more complicated than anticipated. To possibly simplify sequencing and construction, and reduce costs, the Contractor proposed building a new stand-alone electric and control room over the existing underground structure. The Consultant was requested by the Authority to evaluate this proposal and it was determined not to be cost effective. The cost associated with this evaluation is \$15,000.

A change in the construction sequence related to the new electric room, construction of Stair Tower A, and relocation of the grit and screenings piping and containers was reviewed, evaluated, and is included in this amendment at a cost of \$11,000.

Replacement of the stop logs upstream of the influent gates, which allow isolation of each channel in case of a sluice gate failure, or to perform maintenance work on the sluice gates, was included in the construction contract. It has been determined that access to the stop logs, which was not included in the contract, does not allow the stop logs to be easily or safely accessed. This Amendment includes out of scope design of new hatches at ground level to allow staff access to safely insert and remove the stop logs. The cost for this design work is \$10,000.

CONTRACT SUMMARY:

	<u>AMOUNT</u>	<u>TIME</u>	<u>DATED</u>
Original Contract:	\$6,682,531	2,494 Days	07/01/10

AMENDMENTS

Amendment 1:	\$0	458 Days	10/05/12
Amendment 2*:	\$249,500	0 Days	10/22/13
Amendment 3:	\$957,600	0 Days	09/17/14
Amendment 4:	\$897,200	1,160 Days	04/06/17
Proposed Amendment 5:	<u>\$846,000</u>	<u>0 Days</u>	Pending
Total Amendments:	\$2,950,300	1,618 Days	
Adjusted Contract Amount	\$9,632,831	4,112 Days	

*Approved under delegated authority

BUDGET/FISCAL IMPACT:

The FY18 CIP includes a budget of \$8,786,831 for Contract 7206. Including this amendment for \$846,000 the adjusted subphase total will be \$9,632,831 or \$846,000 over budget. This amount will be absorbed within the five-year CIP spending cap.

MBE/WBE PARTICIPATION:

The minimum MBE and WBE participation requirements for this contract are 17.5% and 6.57%, respectively, and will be unchanged by this amendment.

STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: October 18, 2017
SUBJECT: Chelsea Creek Headworks Upgrade
BHD/BEC 2015, A Joint Venture
Contract 7161, Change Order 5



COMMITTEE: Wastewater Policy & Oversight

INFORMATION
 VOTE

Martin E. McGowan, Construction Coordinator
Corinne M. Barrett, Director, Construction
Preparer/Title


Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Change Order 5 to Contract 7161, Chelsea Creek Headworks Upgrade, with BHD/BEC 2015, A Joint Venture, for an amount not to exceed \$440,000.00, increasing the contract amount from \$74,687,553.20 to \$75,127,553.20, 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 a major upgrade of the entire facility and includes automation of the screenings collection and solids conveyance system, allowing the facility to be unstaffed during dry weather flow. The grit collector systems will be replaced, and existing climber screens will be replaced with catenary screens. Influent and effluent sluice gates will be replaced, and the gates' hydraulic operating system will be replaced with electric gate actuators. HVAC systems will be upgraded, a new carbon adsorber odor control system will be installed and redundancy will be added to both systems. Ancillary systems including the emergency generator, fuel oil tank, and transformer will be replaced. Instrumentation and control systems will be upgraded, the

communications tower will be replaced and a communications building will be 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 are also included.

This Change Order

Change Order 5 consists of the following three items:

Furnish and Install Structural Steel Connection Plates In Lieu of the Specified Concrete Anchors. Furnish and Install Additional Girt Framing, Chip Existing Concrete Encased Beams and Columns Using Qualified Abatement Personnel and Patch Concrete

Not to Exceed \$300,000



Girt framing modifications

The Contractor is required to furnish and install new structural steel as well as modify existing structural steel in the building superstructure to accommodate new building elements, such as walls, large equipment, stairs, doors, windows and louvers. The building superstructure is a metal framed building that includes primary and secondary steel framing. All of the existing primary steel framing is encased in concrete that was coated with PCB paint at the time of its original construction.

New structural steel is required to reinforce the existing floor framing for new walls and equipment that will be installed. New columns and brackets are required for attaching a new exterior stairway to the side of the building. All of these structural elements need to be connected to the existing primary steel framing. After commencement of the contract, it was realized that the connection details for this new steel called for the use of concrete anchors. This connection detail is not applicable for this type of building construction. The connection must be made using steel plates welded directly to the primary structural steel. The Contractor will be required to furnish and install new connection plates and weld the new steel to the existing steel. The concrete encasement must be saw cut and chipped away in order to expose the existing steel framing. Since the concrete was previously painted with PCB paint, the concrete chipping and saw cutting must be performed by qualified abatement personnel within negative containment to prevent the migration of hazardous dust and debris. Once the new structural members are installed, the concrete encasement must be restored.



Chipping PCB concrete to expose structural steel

Modifications to the secondary steel framing elements, known as girts, are necessary for new openings in the building exterior, including doors, louvers and windows. The purpose of the girts is to distribute loads from the buildings surfaces to the main framing and foundation. This framing

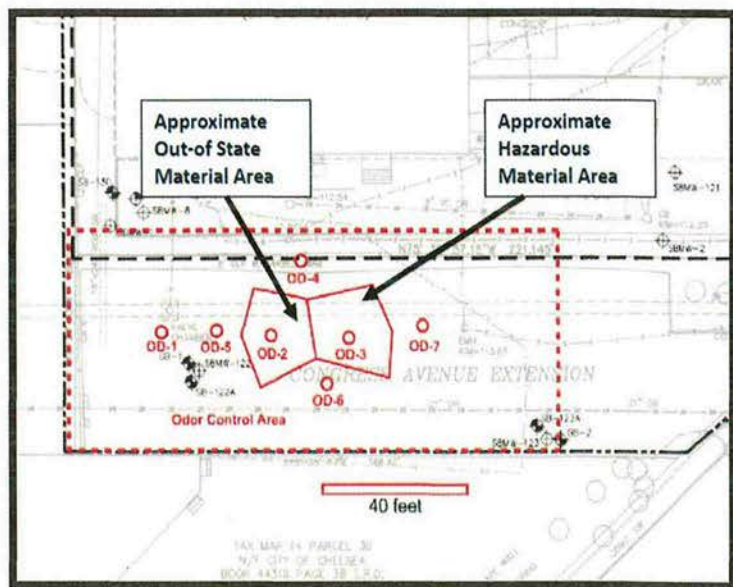
provides lateral and longitudinal support that helps resist wind loads and earthquakes and is used for attaching the exterior cladding. After commencement of the contract, it was realized that the design did not account for all of the new openings as well as closing up some of the abandoned openings. The Contractor must furnish and install additional girts to account for all openings and close up the abandoned openings. Similar to the new structural steel, the concrete must be chipped by qualified abatement personnel and patched once the structural modifications are complete.

The approved PCO for this item has been identified by MWRA staff as a design error. MWRA staff, the Consultant, and the Contractor have agreed to an amount not to exceed \$300,000 for this additional work with no increase in contract term. The Contractor proceeded with this work at its own risk in order to proceed with the remainder of the contract work.

Collect Soil Samples, Transport and Dispose of Hazardous Waste Soil and Contaminated Soil

Not to Exceed \$105,000

The Contractor is required to remove and dispose of approximately 5,000 tons of contaminated soil at an in-state, unlined landfill. The Chelsea Creek Headworks Property is designated as a Confirmed Disposal Site by the MassDEP and prohibits the removal of subsurface soil from the limits of the property boundary without the preparation of a Soil Management Plan by a Licensed Site Professional (LSP). Multiple rounds of soil borings and sampling were conducted during the design phase at various locations around the site. The soil analytics met the applicable criteria for disposal as a Group II-1 contaminated soil at in-state unlined



Limits of Contaminated Soils in Odor Control Area

landfills. After commencement of the Contract, and per the Contract, the Contractor's LSP was required to collect additional soil samples to characterize the soil to confirm the specified soil classifications and obtain pre-approval from disposal facilities prior to excavation activities. Soil samples taken in the area of the new odor control equipment indicated the presence of lead, arsenic, mercury and semi-volatile organic compounds (SVOCs) exceeding the limits for disposal as a Group II-1 soil. Where lead, arsenic and mercury levels exceed the limits, the soil must be disposed as hazardous waste at an approved RCRA landfill facility. There are no provisions in the contract for disposal of this type of soil and new unit price items must be established. Where SVOCs exceed the limits, the soil can be disposed at an approved out-of-state lined landfill as Group II-2 soil. The Contractor will be reimbursed for the difference in cost between the out-of-state lined landfill and the Massachusetts unlined landfill. Additional sampling will be required to ensure that all soil gets disposed at the proper facility.

The approved PCO for this item has been identified by MWRA staff as an unforeseen condition. MWRA staff, the Consultant, and the Contractor have agreed to an amount not to exceed \$105,000 for this additional work with no increase in contract term. The Contractor proceeded with this work at its own risk in order to proceed with the remainder of the contract work.

Transport and Dispose Contaminated Soil To
An Approved Out-of-State Lined Landfill

Not to Exceed \$35,000

The Contractor is required to remove and dispose of approximately 500 tons of Group II-2 contaminated soil at an in-state lined landfill. Soil and ground water sampling during the design identified the presence of polychlorinated biphenyls (PCBs), lead and benzopyrene above Massachusetts Department of Environmental Protection (MassDEP) reportable concentrations. This soil does not meet the applicable criteria for disposal at in-state landfills under MassDEP Policy. Therefore, this soil must be disposed at an out-of-state facility. The Contractor will be reimbursed for the difference in cost between the out-of-state landfill and the Massachusetts landfill.



Collecting Additional Soil Samples



Removal of PCB Contaminated Soil

The approved PCO for this item has been identified by MWRA staff as a design error. MWRA staff, the Consultant, and the Contractor have agreed to an amount not to exceed \$35,000 for this additional work with no increase in contract term. 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	Pending
Change Order 5	<u>\$440,000.00</u>	<u>0 Days</u>	Pending
Total of Change Orders:	\$2,268,553.20	0 Days	
Adjusted Contract:	\$75,127,533.20	1,460 Days	

*Approved under delegated authority

If Change Order 5 is approved, the cumulative value of all change orders to this contract will be \$2,268,553.20 or 3.1% of the original contract amount. Work on this contract is approximately 20% complete.

BUDGET/FISCAL IMPACT:

The FY18 Capital Improvement Program budget includes \$76,059,000 for Contract 7161. Including this change order for \$440,000.00, the adjusted subphase total is \$75,127,533.20.

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

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

to be held on

Wednesday, October 18, 2017

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

Time: Immediately following Wastewater Comm.

AGENDA

A. Information

1. Update on MWRA Aquatic Invasive Plants Control Activities
2. Progress on Northern Intermediate High and Southern Extra High Pipeline Redundancy Projects

B. Contract Amendments/Change Orders

1. Northern Intermediate High Section 110 – Reading and Woburn: Albanese D&S, Inc., Contract 7471, Change Order 12

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Water Policy and Oversight Committee

September 20, 2017

A meeting of the Water Policy and Oversight Committee was held on September 20, 2017 at the Authority headquarters in Charlestown. Chairman Blackmon presided. Present from the Board were Ms. Wolowicz and Messrs. Carroll, Cotter, Flanagan, Pappastergion, Peña, Vitale and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Fred Brandon, Pam Heidell, John Vetere, Bill Sullivan, John Colbert, Mike Hornbrook, Vince Spada, and Bonnie Hale. The meeting was called to order at 11:35 a.m.

Information

Staff reported on the two information items:

- Report on Corrosion Control in the Water and Sewer Systems
- Status Update of North Reading and the MWRA.

Contract Amendments/Change Orders

*Wachusett Aqueduct Pumping Station Design, Construction Administration and Resident Inspection Services: Stantec Consulting Services, Inc., Contract 7156, Amendment 4

Staff gave a presentation on the reasons for the amendment. The Committee recommended approval of Amendment 4 (ref. agenda item B.1).

*Wachusett Aqueduct Pumping Station, BHD/BEC JV 2015, A Joint Venture: Contract 7157, Change Order 21

Staff gave a presentation on the project and the change orders, and there was general discussion and question and answer. The Committee recommended approval of Change Order 21 (ref. agenda item B.2).

The meeting adjourned at 12:00 noon.

* Approved as recommended at September 20, 2017 Board of Directors meeting.

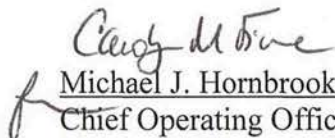
STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: October 18, 2017
SUBJECT: Update on Invasive Aquatic Plants Management at MWRA Source and Emergency Reservoirs

COMMITTEE: Water Policy & Oversight

INFORMATION
 VOTE

David W. Coppes, P.E., Director, Waterworks
John J. Gregoire, Program Manager, Reservoir Operations
Preparer/Title


Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

For information only. This staff summary presents a periodic update on the MWRA efforts for invasive aquatic plant control in source and emergency reservoirs. A Power Point presentation will be provided to illustrate present conditions and status.

BACKGROUND:

MWRA's control of aquatic invasive plants first began at the Wachusett Reservoir in 2003. MWRA has diligently monitored active and back-up reservoirs for encroachment of aquatic invasive plants species and added removal and treatment efforts as needed. The FY18 Budget for aquatic invasive species control is \$532,000. The program goal is to rapidly identify new infestations and remove invasive plants to ultimately create the proper environment for native plants species to return and flourish.

Aquatic invasive plants can out-compete native species and grow to nuisance levels, and ultimately choke off water bodies. They die and decay, which consumes oxygen and loads the reservoir with organic matter. This also creates a disinfection demand (and increased treatment cost) and promotes algal growth with the potential for associated toxins. They can also be aesthetic nuisances and clog intake screens.

The three primary plants being controlled at the Wachusett Reservoir are Eurasian Watermilfoil, Fanwort, and Variable Milfoil, although others have been targeted in the past and have been reduced. Wildlife is the most challenging vector to control, particularly wading birds, which can transport fragments from other water bodies to reservoirs. They can also ingest seeds and pass them intact.



Eurasian Watermilfoil

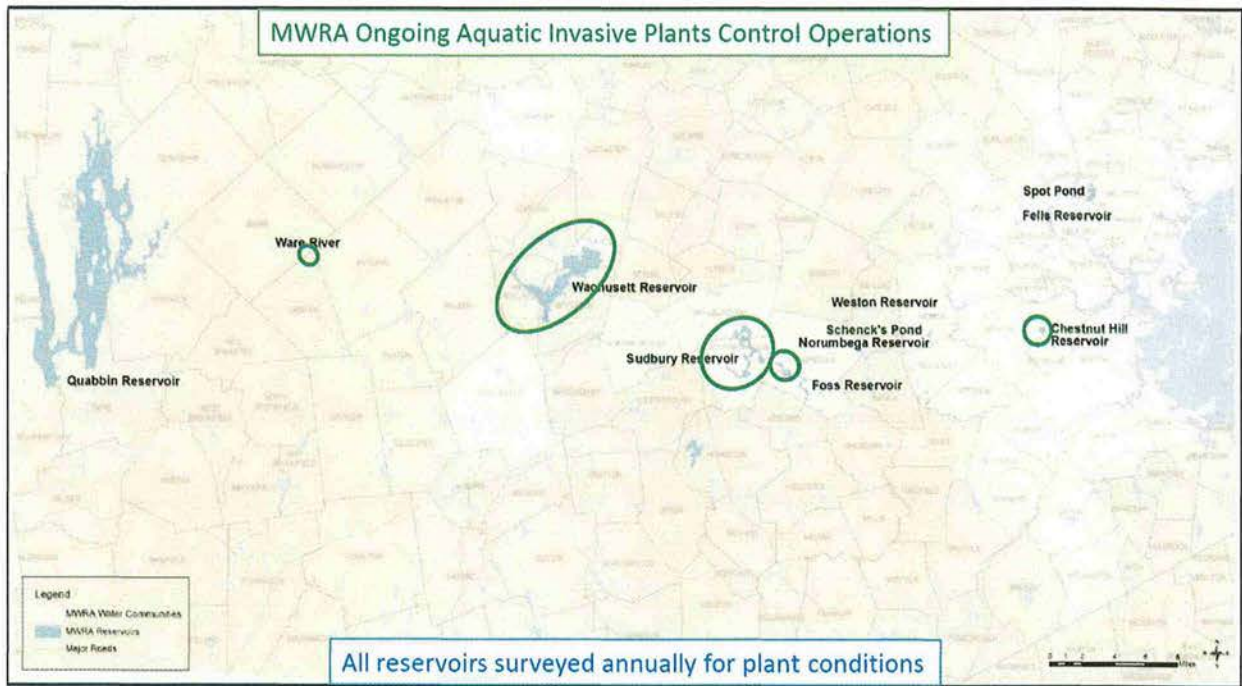


Fanwort



Variable Milfoil

Many variables contribute to the establishment and spread of aquatic invasive plants. They respond to subtle changes in environmental conditions. Nutrient inputs, mild or cold winters, wet or dry seasons, duration of reservoir ice cover or lack of ice cover, reservoir elevations, etc., can all have a seasonal impact on invasive plants' growth. Some years have seen marked reductions in invasive plants through harvest and other control operations. In other years, control of plants has varied by species (as one is controlled, another fills in). Staff expect that invasive aquatic management at MWRA reservoirs will be a necessary and continuous annual activity to protect water quality for the foreseeable future with levels of effort mirroring changing conditions.



MWRA aquatic invasive control locations

DISCUSSION

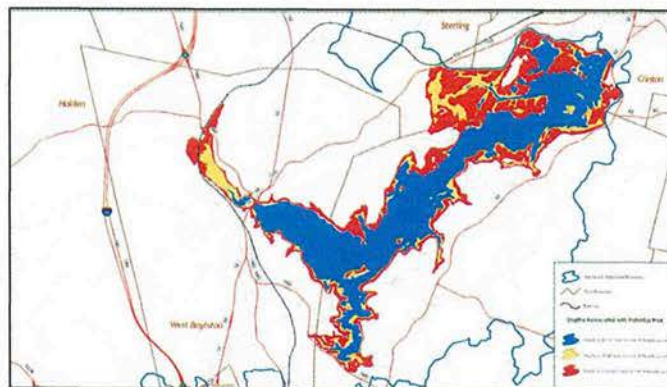
Annual surveys are performed starting from the Quabbin Reservoir in the west and through the metropolitan emergency reservoirs in the east (see map above). Each season's findings are compared to previous seasons for monitoring of shifts in plant communities and as an early warning of the arrival of new aquatic invasive plants. MWRA and DCR staff also perform *ad hoc* and targeted surveys based on conditions or pressing issues. Enhanced surveillance has now become routine to scout for any new or changing conditions, and staff have built-in contingency planning to rapidly respond to new infestations.

Quabbin Reservoir: At present, there are no documented infestations of aquatic invasive species in the main reservoir. However, there is the established *non-native* Variable Leaf Milfoil in the upstream settling basins, where fragment barrier curtains are deployed. In 2014, the invasive plant *brittle naiad* was discovered in a small pioneering colony in the northern part of the reservoir. MWRA re-deployed a Diver Assisted Suction Harvesting (DASH) contractor from Wachusett and removed this colony. Subsequent surveys for this plant each year since have shown it has not returned nor was it found in other areas of Quabbin.

Ware River: Ware River is a tributary to the Quabbin Reservoir via diversions at Shaft 8 of the Quabbin Aqueduct. MWRA has been controlling the Variable Leaf Milfoil since it was discovered in the Intake Pool of Ware River's Shaft 8 in 2013. Seasonal efforts include physical removal of the plants and their roots from the exposed intake pool bed during maintenance. This work is performed to keep the plant from spreading throughout the Intake Pool, being transferred to Quabbin, and clogging screens.

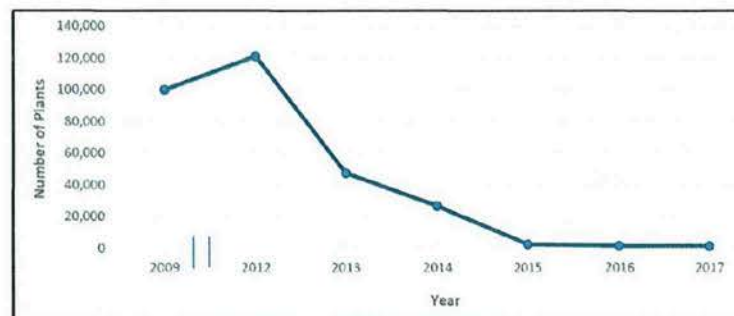
Wachusett Reservoir: Aquatic invasive control efforts first began at the Wachusett Reservoir in 2003 soon after Eurasian Watermilfoil and Fanwort were discovered in remote upstream basins. Several different approaches have been deployed over the years. Presently, Diver Assisted Suction Harvesting is being performed at several areas of the reservoir and is showing successful reduction in invasive plants in Stillwater Basin.

The Wachusett Reservoir requires heavy investment because it is at particular risk due to its large shallow areas (red and yellow areas on the map below), particularly in the northern reservoir near the intake, where invasive plants could colonize and become a major problem.



Areas of Wachusett Reservoir susceptible to invasive plants

Sudbury Reservoir: Since 2007, Water Chestnut was removed annually by mechanical harvester. Major progress has been made in this effort to the point where small scattered plants are now seasonally removed by hand.



Sudbury Water Chestnut Harvest volumes from 2008 - 2017

Foss Reservoir: The Foss Reservoir is part of the Sudbury Reservoir emergency system. This is a relatively shallow reservoir, with numerous coves, that has become heavily infested with Eurasian Watermilfoil. Nutrient inputs from its small urbanized watershed support the plants' growth. Initial effort at winter drawdown to freeze the plants was successful. The 2016 drought suspended that activity but staff will again perform a winter drawdown in 2017.

Chestnut Hill Reservoir: The Chestnut Hill Reservoir is an emergency distribution reservoir last used in May 2010 during the Shaft 5 water main break. In 2007, a Eurasian Watermilfoil infestation was observed to be extremely heavy in this small reservoir with dense plants topping out at the water surface in several areas. Control efforts here have included mechanical harvesting since 2008, typically twice per season. Winter drawdowns were started in winter of 2009 to expose, freeze, and desiccate the plants and roots with success. Winter drawdowns continued through 2015. Mechanical harvesting yields have decreased significantly over the last several years, with no harvest required in 2015. In 2016, due to drought conditions, a winter drawdown was not performed. Staff plan a winter drawdown in 2017. This reservoir has also had two documented cyanobacteria (a/k/a *Bluegreen algae*) blooms, one in 2014 and one in 2017. A common trigger for these blooms is the nutrient phosphorus; the goose population here is a significant contributor. MWRA is presently evaluating options to control the geese.


Other Emergency Reservoirs: As of the 2017 survey, no aquatic invasive plants have been found in the Norumbega Open Reservoir, Weston Reservoir, Spot Pond, or Fells Reservoir. However, with changes in climate and weather patterns, and migratory bird stopovers, the risk for new invasives is increasing. MWRA will continue to adjust as the threats evolve.

The next annual reservoirs-wide survey contract will commence on July 1, 2018 and include added components for water quality sampling and water column profile measurements. A key directive in the survey contract is that if any new or expanded aquatic invasives are discovered, it is brought to the immediate attention of MWRA staff, and mechanisms are in place, such as dedicated additional surveys and DASH contingency hours, to rapidly respond.

BUDGET/FISCAL IMPACT:

The FY18 CEB includes \$532,000 for MWRA's reservoirs comprehensive plant survey and aquatic invasives control program covering all locations described herein.

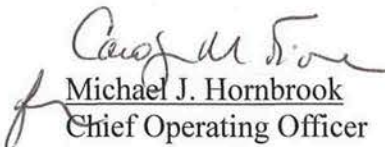
STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: October 18, 2016
SUBJECT: Progress on Southern Extra High and Northern Intermediate High Pipeline Redundancy Projects

COMMITTEE: Water Policy & Oversight

INFORMATION
 VOTE

Jeremiah Sheehan, Construction Coordinator
Terrence Flynn, P.E., Construction Coordinator
Corinne M. Barrett, Director, Construction
Preparer/Title


Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

For information only. This staff summary provides an update on construction progress of the Southern Extra High Pipeline and Northern Intermediate High Pipeline Redundancy projects.

DISCUSSION:

Southern Extra High Redundancy Pipeline, Section 111

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 was constructed in 1954 and is five miles long. Canton and Stoughton are served by a branch (Section 88) off of Section 77. Although several of these communities are only 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 Dedham/Westwood. Correction of this deficiency has been assigned a Priority One in MWRA's Water Master Plan due to the potential critical threat to public health that could result from a failure in this single transmission main.

On November 14, 2012, staff presented to the Board an evaluation of alternatives and a recommendation to proceed with a 5.4-mile redundant pipeline alternative from the Bellevue Water Storage Tanks in West Roxbury through Dedham to Westwood where the pipeline would interconnect with existing pipeline Section 77 near the Route 95 East Street Rotary.

The project is comprised of three separate construction contracts.

Contract 6454, Section 111 (Boston) was the first of three SEH pipeline construction contracts awarded and consists of 11,000 linear feet of 36-inch water main all which is primarily located within DCR's Stony Brook Reservation in Boston. This contract was awarded to P. Gioioso & Sons, Inc. for a bid amount of \$11,770,000. A Notice to Proceed was issued on July 21, 2016

and work is scheduled to be completed by August 10, 2018. To date, 9,000 of the 11,000 linear feet of 36-inch ductile iron pipe has been installed. Work on this contract is currently 80% complete. During installation of the new water main the ledge profile has varied considerably from the profile developed using the design borings. A substantial amount of additional rock was encountered while installing the pipe. Probing and pre-drilling performed by the contractor has identified additional quantities of rock along the alignment. A change order is being developed to address this unforeseen condition.



Section 77 tapping machine being mounted



Installation of 11 ¼ Degree Bend at 23+44

Contract 7504, Section 111 (Dedham North) is the second SEH pipeline construction contract and 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. In addition to permitting with DCR, this project requires permitting for two MassDOT bridges, including Mother Brook, along the route. This contract was awarded to P. Gioioso & Sons, Inc. at the July 19, 2017 Board Meeting for a bid amount of \$17,226,350. The Notice to Proceed was issued on October 6, 2017 and work is scheduled to be complete by November 25, 2019. The contract duration is 780 calendar days.



Section 111 Pipeline Crossing
Mother Brook

The third contract, Contract 7505 (Dedham South) includes the installation of approximately 7,100 linear feet of 36-inch diameter ductile iron water main in the southern portion of Dedham and into Westwood crossing under MBTA railroad tracks and Route 95. Design is 100% complete and construction permit applications are under review by MassDOT and MBTA. This contract is scheduled to be advertised for bid in December 2017.

Northern Intermediate High Pipeline Section 110

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

would result in a rapid loss of service in Reading, Stoneham and Woburn, and potential water restrictions in Wakefield, Wilmington and Winchester.

The existing main pipeline that serves this area (Section 89) is a three-mile-long, four-foot diameter, pre-stressed concrete cylinder pipe (PCCP) transmission main with limited redundancy other than the low-capacity, century-old Section 29 that parallels its route for a short distance. Due to the lack of redundancy, Section 89 cannot be taken out of service for inspection or for repairs. The project goal is to design and construct a new pipeline that will provide redundancy to the community meters so that Section 89 can be removed from service for inspection and rehabilitation.



Hopkins Street, Reading – Transporting 36-inch restrained joint bend for installation



Summer Ave., Reading – Installing 36-inch MWRA water main and 12-inch Town of Reading water line

The project includes a 48-inch pipeline extending from the Gillis Pump Station to the Reading/Stoneham emergency connection and a 36-inch pipeline extending from the Reading/Stoneham interconnection to Meter 240 in Woburn, completing a looped service area in four construction phases.

Under Contract 7066 (Phase 1, NIH –West Transmission Main – Reading), the Contractor installed 2,400 linear feet of 36-inch water transmission main in the Town of Reading on West Street. This contract was awarded to P. Caliacco Corp., for a bid amount of \$1,565,357. A Notice to Proceed was issued on June 25, 2014. This contract was completed in May 2015.

Under Contract 7471 (Phase 2, NIH Section 110 – Reading and Woburn), the Contractor has installed 100% of the 8,800 linear feet of 36-inch water transmission main in the City of Woburn and the Town of Reading and 100% of the asphalt paving. A separate staff summary is being presented for an overrun of the ledge quantity on this contract. The only work remaining on the project is the completion of the Town of Reading meters and disinfection of the pipeline before activation. This contract was awarded to Albanese D&S, Inc for a bid amount of \$9,888,000. A Notice to Proceed was issued on January 12, 2016. The project is scheduled to be complete by March 30, 2018. Work is currently 98.5% complete.

Contract 7478, (Phase 3, NIH Section 110 and 112 – Stoneham and Wakefield) includes the installation of 9,500 linear feet of 48-inch water main. The Contractor has installed 5,757 linear feet of the 9,500 linear feet to date (approximately 62%) of the 48-inch ductile iron pipe and installed the new Wakefield meter #96. This contract was awarded to Albanese D&S, Inc. for a bid amount of \$17,817,999. A Notice to Proceed was issued on January 12, 2017. The project is scheduled to be complete by September 14, 2018. Work is currently 42% complete.



North Street – Stoneham
Removing asphalt prior to installation of 48-inch



Oak Street, Stoneham – Fusing temporary water
bypass piping for homeowners while main water
supply is out during 48-inch installation

Contract 7067, (Phase 4, Section 110 – Stoneham), consists of the installation of 13,300 linear feet of 48-inch diameter transmission main in the Town of Stoneham. A Notice to Proceed was issued to Albanese D&S, Inc. on September 5, 2017 for a bid amount of \$22,737,300. The project has a duration of 1,000 days and is scheduled to be completed by June 1, 2020. The Contractor is currently working on submittals, ordering materials and mobilizing to the site.

The need for redundancy in these service areas were identified in the 1993 water system master plan. After both of the projects are completed, the communities in the Southern Extra High and the Northern Intermediate High Service areas will have full redundancy for the first time since the original pipelines were constructed in 1954 and 1973, respectively.

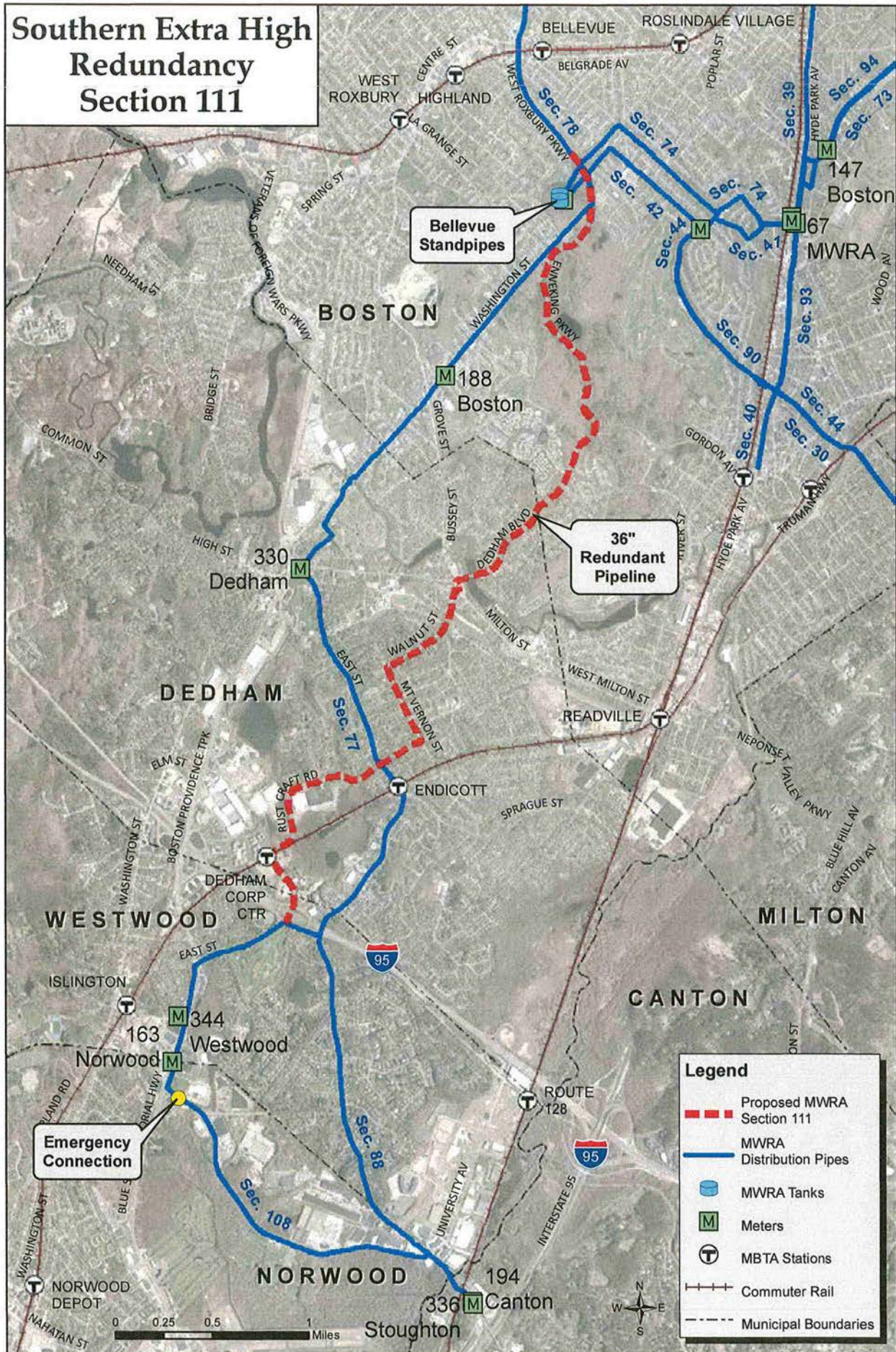
BUDGET/FISCAL IMPACT:

The FY18 CIP includes a budget of \$36,995,000 for the three Southern Extra High contracts and a budget of \$56,216,148 for the four Northern Intermediate High contracts.

ATTACHMENTS:

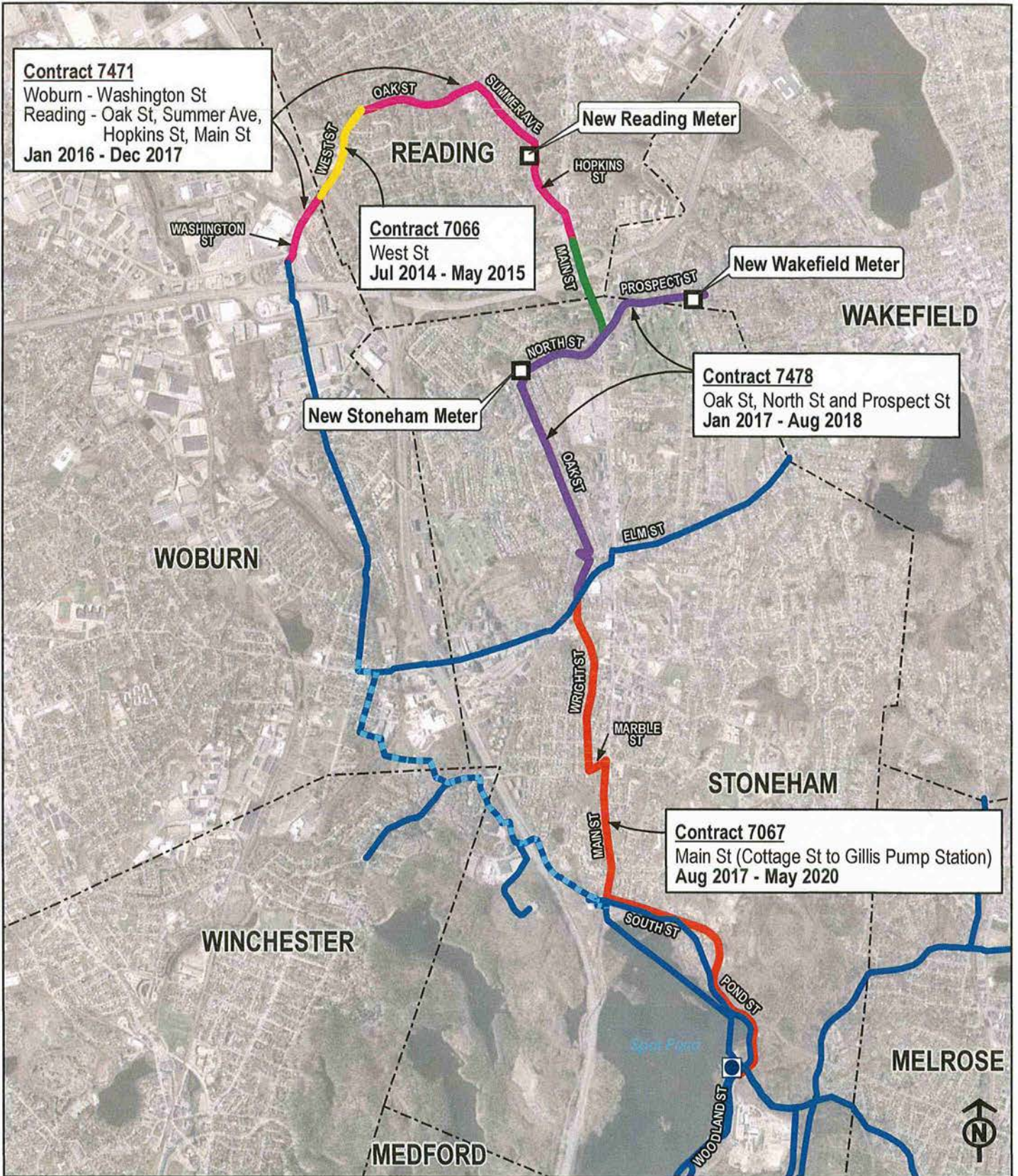
- Southern Extra High Project Map
- Northern Intermediate High Project Map

Southern Extra High Redundancy Section 111



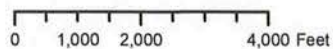
Legend

- - - Proposed MWRA Section 111
- MWRA Distribution Pipes
- MWRA Tanks
- Meters
- MBTA Stations
- +— Commuter Rail
- - - Municipal Boundaries




MASSACHUSETTS WATER RESOURCES AUTHORITY

**Northern Intermediate High
Redundant Pipeline Project, Route Overview**



- Contract 7471
- Contract 7478
- Contract 7067
- Contract 7066
- Short-Term Improvements
- MWRA Mains
- Class IV PCCP
- New Meter Locations

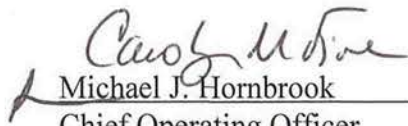
STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: October 18, 2017
SUBJECT: Northern Intermediate High Section 110 – Reading and Woburn
Albanese D&S, Inc.
Contract 7471, Change Order 12

COMMITTEE: Water Policy and Oversight

 INFORMATION
 X VOTE

Jeremiah Sheehan, Construction Coordinator
Corinne M. Barrett, Director, Construction
Preparer/Title


Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Change Order 12 to Contract 7471, Northern Intermediate High Section 110 – Reading and Woburn, with Albanese D&S, Inc., for a lump sum amount of \$661,177.96, increasing the contract amount from \$11,146,797.23 to \$11,807,975.19, with no increase in contract term.

Further, to authorize the Executive Director to approve additional change orders as may be needed to Contract 7471 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:

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

The existing main pipeline that serves this area (Section 89) is a three-mile-long, four-foot diameter, pre-stressed concrete cylinder pipe (PCCP) transmission main with limited redundancy other than the low-capacity, century-old Section 29 that parallels its route for a short distance. Due to the lack of redundancy, Section 89 cannot be taken out of service for inspection or for repairs. The project goal is to design and construct a new pipeline that will provide redundancy to the community meters so that Section 89 can be removed from service for inspection and rehabilitation. The route includes a 48-inch pipeline that will extend from Gillis Pump Station to the Reading/Stoneham emergency connection;

and a 36-inch pipeline which will extend from the Reading/Stoneham interconnection to Meter 240 in Woburn, completing a looped service area in four construction phases.

Under Contract 7471 or Phase 2, the Contractor is constructing 8,800 linear feet of 36-inch water transmission main in the City of Woburn and the Town of Reading.

This Change Order

Change Order 12 consists of the following item:

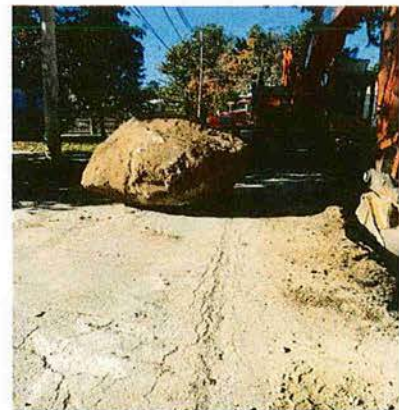
Remove, Handle, Transport and Dispose of
Rock and Boulder Excavation

\$661,177.96



During the design phase, borings were performed every 500 feet along the new pipeline route in order to determine the soil characteristics and potential for ledge. Based on these borings the contract specifications required the Contractor to include in its lump sum an estimated quantity of 450 cubic yards for the removal, handling, transportation and disposal of Rock and Boulder Excavation on the project. During installation of the new water main along Hopkins Street it was discovered that the ledge profile varied considerably from the design borings. Pre-drilling performed by the Contractor at intervals of every 25 feet on Hopkins Street and other streets identified additional quantities of rock in excess of the specified contract quantity of 450 cubic yards. The actual quantity of rock excavated by the Contractor was

2,959.5 cubic yards (2,509.5 cubic yards more than the specified quantity). Under the contract, the Contractor is entitled to an equitable adjustment in the unit price for removing, handling and transporting the additional 2,509.5 cubic yards of rock excavation due to the significant deviation from the specified quantity. The Contractor's Schedule of Values contains a unit price of \$200 per cubic yard for this item. Installation of the 36-inch pipeline proceeded while the Contractor and staff negotiated a new cubic yard unit price of \$263.47 for the additional 2,509.5 cubic yards of rock removal, handling, transportation and disposal. The Contractor was not allowed to blast due to the proximity of adjacent utilities. As a result, the Contractor was required to remove ledge using backhoe mounted hydraulic splitters. The Contractor has completed all excavation and has overrun the original estimated quantity by 2,509.5 cubic yards.



The approved PCO for this item has been identified by staff as an overrun in quantities. MWRA staff, the Consultant, and the Contractor have agreed to a lump sum amount of \$661,177.96 for this additional work with no increase in contract term. The Contractor has 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:	\$9,888,000.00	808 Days	12/07/15
Change Orders:			
Change Order 1*	\$0.00	0 Days	03/09/16
Change Order 2*	\$0.00	0 Days	03/23/16
Change Order 3*	\$11,211.37	0 Days	08/12/16
Change Order 4*	\$7,368.81	0 Days	09/06/16
Change Order 5*	\$9,500.00	0 Days	09/19/16
Change Order 6*	\$97,015.00	0 Days	12/07/16
Change Order 7	\$564,239.00	0 Days	01/24/17
Change Order 8*	\$24,000.00	0 Days	02/02/17
Change Order 9*	\$170,463.05	0 Days	03/20/17
Change Order 10	\$300,000.00	0 Days	04/12/17
Change Order 11*	\$75,000.00	0 Days	07/10/17
Change Order 12	<u>\$661,177.96</u>	<u>0 Days</u>	Pending
Total of Change Orders:	\$1,919,975.19	0 Days	
Adjusted Contract:	\$11,807,975.19	808 Days	

*Approved under delegated authority

If Change Order 12 is approved, the cumulative value of all change orders to this contract will be \$1,919,975.19 or 19% of the original contract amount. Work on this contract is approximately 93% complete.

BUDGET/FISCAL IMPACT:

The FY18 Capital Improvement Program budget includes \$11,988,197 for Contract 7471. Including this change order for \$661,177.96, the adjusted subphase total is \$11,807,975.19.

MBE/WBE PARTICIPATION:

The MBE/WBE participation requirements for this project were established at 7.24% and 3.6%, 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

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PERSONNEL & COMPENSATION COMMITTEE MEETING

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

to be held on

Wednesday, October 18, 2017

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

Time: Immediately following Water Comm.

AGENDA

A. Information

1. Pregnant Workers Fairness Act

B. Approvals

1. Revision to Management Policy for Staff Appointments
2. PCR Amendments – October 2017
3. Appointment of Director, Environmental and Regulatory Affairs
4. Appointment of Librarian and Records Manager, MIS Department

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Personnel and Compensation Committee

September 20, 2017

A meeting of the Personnel and Compensation Committee was held on September 20, 2017 at the Authority headquarters in Charlestown. Chair Wolowicz presided. Present from the Board were Messrs. Blackmon, Carroll, Cotter, Flanagan, Pappastergion, Peña, Vitale and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Karen Gay-Valente and Bonnie Hale. The meeting was called to order at 12:00 noon.

All of the agenda items were approved under an omnibus motion:

Approvals

*PCR Amendment – September 2017

(ref. agenda item A.1)

*Appointment of Chemist III, Laboratory Services

Appointment of Ms. Melissa Sturk (ref. agenda item A.2)

*Appointment of Chemist III, Laboratory Services

Appointment of Mr. Kevin Constantino (ref. agenda item A.3)

*Appointment of Regional Manager, Toxic Reduction and Control Dept.

Appointment of Mr. Alix Pierre-Louise (ref. agenda item A.4)

*Appointment of Manager, Energy, Operations Division

Appointment of Mr. Michael E. McDonald (ref. agenda item A.5)

*Appointment of Program Manager, Energy Management, Operations Division

Appointment of Ms. Courtney Fairbrother (ref. agenda item A.6)

*Appointment of Manager, Metering and Monitoring, Planning Department

Appointment of Mr. David A. Liston (ref. agenda item A.7)

* Approved as recommended at September 20, 2017 Board of Directors meeting.

*Appointment of Manager, SCADA and Process Control

Appointment of Mr. Augustin Serino (ref. agenda item A.8)

*Appointment Project Manager, Service Contracts, Metro Maintenance

Appointment of Mr. Altaf Bhatti (ref. agenda item A.9)

*Appointment of Senior Medium Voltage Electrical Specialist, Western Maintenance

Appointment of Mr. Robert Bonfiglio (ref. agenda item A.10)

*Appointment of Supervisor, Transmission and Treatment Operations, Carroll Water Treatment Plant

Appointment of Mr. Thomas Patriarca (ref. agenda item A.11).

OTHER BUSINESS – Delegated Authority Levels

Mr. Laskey pointed out that the delegated authority levels for appointments requiring Board approval were over ten years old and suggested that it might be worthwhile to look at increasing the Board approval level from \$85,000 to \$100,000. The Board members were amenable to the idea, and Mr. Laskey indicated that an item would be placed on the agenda for approval at the next meeting.

The meeting adjourned at 12:05 p.m.

* Approved as recommended at September 20, 2017 Board of Directors meeting.

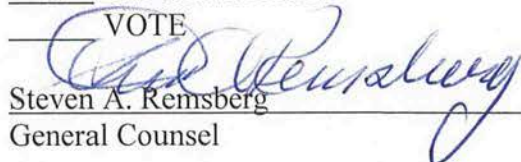
STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: September 20, 2017
SUBJECT: Pregnant Workers Fairness Act



COMMITTEE: Personnel and Compensation

X INFORMATION
 VOTE



Steven A. Remsberg
General Counsel

Cheryl Forzley Donohue, Senior Staff Counsel
Karen Gay-Valente, Director, Human Resources
Preparers/Titles



Michele S. Gillen
Director of Administration

RECOMMENDATION:

For information only.

DISCUSSION:

Massachusetts recently adopted the Pregnant Workers Fairness Act, which was signed into law by Governor Baker on July 27, 2017, and amends the Massachusetts Fair Employment Practices Act (Mass. Gen Laws, Ch. 151B), the anti-discrimination statute.

The new law, which goes into effect on April 1, 2018, expressly bans employment discrimination against pregnant employees or prospective employees on account of their pregnancy or pregnancy-related conditions, including lactation or the need to express breast milk. Furthermore, and importantly, under the Act, an employer must provide a reasonable accommodation to a pregnant employee when an accommodation is requested. Although pregnant workers already have many protections afforded to them under both state and federal laws, the new law expands those rights by granting a pregnant worker certain accommodations regardless of whether or not the pregnancy amounts to a disability.

As with any other reasonable accommodation request, an employer (i) must engage in a timely and good faith interactive process; (ii) cannot require an employee to accept a particular accommodation that is not necessary for the employee to perform the essential functions of the job; and (iii) cannot require an employee to take a leave of absence if other reasonable accommodations are available. A reasonable accommodation may only be denied if the employer is able to show that the accommodation will cause the employer undue hardship.

MWRA has a well-established procedure facilitating requests for accommodation for individuals with disabilities through its Human Resources Department and Affirmative Action Unit. MWRA promptly meets with an employee making such a request to review, discuss and select a reasonable accommodation; further, it has a long standing practice of accommodating pregnant employees prior to the enactment of this specific law through the Family Medical Leave Act and the Americans with Disabilities Act.

The Act specifically states that a reasonable accommodation, may include, but shall not be limited to: (i) more frequent or longer paid or unpaid breaks; (ii) time off to attend to a pregnancy complication or recover from childbirth with or without pay; (iii) acquisition or modification of equipment or seating; (iv) temporary transfer to a less strenuous or hazardous position; (v) job restructuring; (vi) light duty; (vii) private non-bathroom space for expressing breast milk; (viii) assistance with manual labor; or (ix) a modified work schedule.

Under the Act, employers can generally require an employee to supply medical documentation when seeking an accommodation, with four exceptions. No medical documentation may be requested when the following accommodations are requested: (i) more frequent restroom, food and/or water breaks; (ii) seating requests; (iii) the inability to lift over 20 pounds; and (iv) private non-bathroom space for lactation or expressing breast milk. With regard to non-bathroom space for lactation or expressing breastmilk, the MWRA has identified a room within each of its major facilities (Charlestown Navy Yard, Chelsea, Deer Island, and Southborough) for such purposes.

The law is noteworthy in that it provides for reasonable accommodations to women experiencing normal, healthy pregnancies, and not necessarily just to those who are experiencing difficulties (e.g. expressing breast milk; requiring more frequent breaks).

Because the Act amends Ch. 151B, the Massachusetts anti-discrimination statute, it will be enforced through the same framework as other discrimination claims under Massachusetts law. Specifically, the claimant will be able to file a complaint of discrimination with the Massachusetts Commission Against Discrimination ("MCAD") within 300 days from the act of alleged discrimination. Furthermore, an employee may file a complaint of retaliation at the MCAD against employers who retaliate against an employee who requests or uses a reasonable accommodation.

Finally, the law requires employers to provide written notice of the right to be free from discrimination in relation to pregnancy or pregnancy-related conditions to: (i) new employees at the time of commencement of their employment; (ii) any employee who notifies the employer of a pregnancy or pregnancy-related condition within 10 days of such notification; and (iii) to all existing employees on or prior to April 1, 2018. MWRA will comply with these requirements and will send out notification to all employees prior to April 1, 2018.

Staff understand that the MCAD is currently working on guidelines and a sample notification to employees that employers will be able to use.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: October 18, 2017
SUBJECT: Revisions to Management Policy for Staff Appointments



COMMITTEE: Personnel and Compensation

 INFORMATION

Karen Gay Valente
Karen Gay-Valente, Director of Human Resources

 X VOTE

Joan C. Carroll, Manager Compensation

Michele S. Gillen
Michele S. Gillen, Director Administration

Preparer/Title

Division Director Approval

RECOMMENDATION:

That the Board adopt the proposed amendment to the Management Policies of the Board of Directors pertaining to Staff Appointments (Part II, Human Resources, Section G) by increasing the annual salary level threshold required for Board approval from \$85,000 to \$100,000. This revision is summarized in Attachment A.

DISCUSSION:

The Management Policies of the Board of Directors currently require that the Personnel Committee and the Board of Directors, approve upon the recommendation of the Executive Director, appointments of employees who earn \$85,000 or more upon entry into the MWRA, and /or whose positions are in the non-union classification structure or higher than grade 12 of the Unit 6 classification structure or higher than grade 29 of the Unit 9 classification structure.

In 2007, the Board approved an increase to the staff appointment salary threshold from \$65,000 to \$85,000 annually. Staff have analyzed the inflationary impact of an \$85,000 salary from 2007 and adjusted that dollar amount using historical Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W) information from the Social Security Administration. Using these annual CPI figures, staff projected that an \$85,000 salary in 2007 when adjusted for inflation is equivalent to a salary of \$99,293 in 2017.

Staff recommend a new annual salary threshold of \$100,000 be instituted for staff appointments requiring Board Approval as this threshold best ensures the approval and review of intended management positions. These positions are listed in attachments B and C.

The number of positions at the \$85,000 salary threshold currently requiring Board approval is 402. Increasing the threshold will reduce that number to 189.

If the recommended \$100,000 salary threshold is approved, staff recommend that any staff appointments now requiring Board approval with a salary of \$85,000 to below the updated \$100,000 threshold be included in the monthly delegated authority report to the Board.

BUDGET/FISCAL IMPACT:

None

ATTACHMENTS:

Attachment A-Proposed Revisions to Management Policies (Part II, Human Resources, Section G)

Attachment B- Titles Subject to Board Approval for Staff Appointments Based on Salary Level

Attachment C- Titles Subject to Board Approval for Staff Appointments Based on Classification

Proposed Amendment to Management Policies of the Board of Directors, Human Resources (Article II (G)).

Staff Appointments

Current

The Personnel and Compensation Committee and the Board of Directors shall approve, upon the recommendation of the Executive Director, appointments of employees who earn **\$85,000** or more upon entry, and/or whose positions are in the non-union classification structure or higher than Grade 12 of the Unit 6 classification structure or grade 29 of the Unit 9 classification structure. The Executive Director or his designee may approve appointments to all other established positions. The Executive Director, however, shall have no power hereunder to amend, change, extend or otherwise modify on behalf of the Authority contracts for employment with the Authority.

Proposed

The Personnel and Compensation Committee and the Board of Directors shall approve, upon the recommendation of the Executive Director, appointments of employees who earn **\$100,000** or more upon entry, and/or whose positions are in the non-union classification structure or higher than Grade 12 of the Unit 6 classification structure or grade 29 of the Unit 9 classification structure. The Executive Director or his designee may approve appointments to all other established positions. Appointments by the Executive Director of employees who earn \$85,000 to \$100,000 upon entry shall be included in the report of actions under delegated authority required by Article V.E.4(a). The Executive Director, however, shall have no power hereunder to amend, change, extend or otherwise modify on behalf of the Authority contracts for employment with the Authority.

Amendments to Position Control Register

Current (2nd sentence)

Positions with salaries of **\$85,000** or more will not be advertised until the Personnel and Compensation Committee approves the amendment.

Proposal

Positions with salaries of **\$100,000** or more will not be advertised until the Personnel and Compensation Committee approves the amendment.

ATTACHMENT - B

Titles Subject to Board Approval for Staff Approval Based on Salary Level

Unit 1 Titles	Grade	Unit 6 Titles	Grade
Supervisor, T&T Operations	26	Program Manager, MIS	12
Supervisor, Facility Maint	26	Program Manager, MIS Ops	12
Supervisor, Equipment Maint	26	Program Manager, Tech Info	12
		Program Mgr, Tech Services	12
		Shift Operations Manager	12
		Sr Systems Manager	12
		Systems Administrator III	12
		Warehouse Manager	12
		Work Coordination Center Mgr	12
Unit 3 Titles	Grade	Unit 9 Titles	Grade
Operations Supervisor	24	CADD Drafting Manager	25
		Laboratory Supervisor III	25
		Manager, Envir Compliance	25
		Principal Civil Engineer	25
		Project Manager	25
		Safety Program Coordinator	25
		Sr Sampling Associate	25
		Sr Staff Engineer	25
		Supervisor, Inspection	25
		Program Manager	29
		Regional Manager	29
Unit 6 Titles	Grade		
Assistant Finance Manager	11		
Asst Manager, Employment	11		
Asst Manager, Labor Relations	11		
Asst Mgr, WC & Labor Relations	11		
Database Analyst	11		
Database Analyst/Programmer	11		
Deputy Payroll Manager	11		
Financial IS Project Leader	11		
Insurance Officer	11		
Librarian/Records Manager	11		
Program Manager, Training	11		
Project Manager, Meter Data	11		
Project Manager, MIS	11		
Project Manager, School Ed	11		
Real Property Project Manager	11		
Staff Counsel	11		
Supervisory Auditor	11		
System Analyst/Programmer III	11		
Technical Support Specialist	11		
Accounts Payable Manager	12		
Area Manager	12		
Assistant Contracts Manager	12		
Business Systems Analyst III	12		
Cash Manager	12		
Claims Management Specialist	12		
Deputy Purchasing Manager	12		
Facilities Manager	12		
Financial & Admin Manager	12		
Investment Manager	12		
IT Asset & Configuration Mgr	12		
IT Project Manager III	12		
Manager, Contract Admin	12		
Manager, Fin & Spec Projects	12		
Manager, Finance & Admin	12		
Manager, Power Generation	12		
Manager, Coordination & Control	12		
Materials Coordination Manager	12		
MBE/WBE Program Manager	12		
Mgr, Analysis & Tech Support	12		
Network Administrator III	12		
Prog Mgr, Monitor & Compliance	12		
Program Manager	12		

ATTACHMENT - C

Titles Subject to Board Approval for Staff Appointments
Based on Classification

Unit 6 Titles	Grade
Accounting Manager	13
Assets Manager	13
Assist Mangr Rates, Rev & Fin	13
Community Relations Manager	13
Deputy Contracts Manager	13
Headworks Manager	13
IS Custom Support Manager	13
IT Architect	13
Manager, DI Admin & Finance	13
Manager, Emergency Planning	13
Manager, Facilities Mgmt	13
Manager, Finance	13
Manager, Operations Admin	13
Manager, Risk Management	13
Manager, Vehicle Maintenance	13
Materials Manager	13
Network & Systems Manager	13
Payroll Manager	13
Sr Manager, Coord & Control	13
Sr Program Mgr, IS Security	13
Sr Shift Manager	13
Sr Staff Counsel	13

Unit 9 Titles	Grade
Construction Coordinator	30
Environmental Manager	30
Laboratory Manager	30
Manager, Residuals Operations	30
Manager, Safety & Security	30
Sr Program Manager	30

Non Union Titles	Grade
Asst Director, Internal Audit	13
Manager, Policy & Planning	13
Manager, Policy & Planning Sup	13
App & Sys Development Manager	14
Assist Director, Construction	14
Asst Director, Construction	14
Asst Director, Engineering	14
Budget Manager	14
Dep Dir, Sec & Emer Preparedness	14
Deputy Treasurer	14
Manager, Benefits & HRIS	14
Manager, Compensation	14
Manager, Employment	14
Manager, Energy	14
Manager, Maintenance	14
Manager, Metering & Monitoring	14
Manager, Operations	14
Manager, Operations Engineering	14
Manager, Operations Support	14
Manager, Process Control	14
Manager, Purchasing	14
Manager, Training and Development	14
Manager, Trans/Treatment	14
Manager, Western Maintenance	14
Mgr, IT Security, Arch & Eng	14
Mgr, SCADA & Process Control	14
Mgr, Labor Relat & Workers Comp	14
Superintendent, Clinton	14
Technical Operations Manager	14
Associate General Counsel	15
Controller	15
Deputy Chief Engineer	15
Deputy Director, DIWWTP	15
Deputy Director, Maintenance	15
Director, Emerg Plan & Prepare	15
Director, Intergovernmental Affairs	15
Director, Laboratory Services	15
Director, Metropolitan	15
Director, TRAC	15
Director, Western Operations	15
Director, Environmental Quality	15
Director, WW Operations & Maint	15
Manager, Engineering Services	15
Special Asst to Exec Director	15
Budget Director	16
Chief Engineer	16
Director, Construction	16
Director, DIWWTP	16
Director, Human Resources	16
Director, Internal Audit	16
Director, MIS	16
Director, Planning & Sustainably	16
Director, Procurement	16
Director, Waterworks	16
Special Asst For Affirm Action	16
Treasurer	16
Deputy Chief OO, OE&C	17
Deputy Chief OO, PP&P	17
Director, Administration	17
Director, Finance	17
General Counsel	17

STAFF SUMMARY

TO: Board of Director
FROM: Frederick A Laskey, Executive Director
DATE: October 18, 2017
SUBJECT: October PCR Amendments



COMMITTEE: Personnel and Compensation


Karen Gay-Valente, Director of Human Resources
Joan C. Carroll, Manager Compensation
Preparer/Title

 INFORMATION

 X VOTE


Michele S. Gillen
Director, Administration

RECOMMENDATION:

To approve 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.

October PCR Amendments

There are three PCR amendments, the first is related to a change in the Administrative Division. The second amendment is to create a Non-Union Position to fill a gap in the area of environmental policy and regulatory affairs. An appointment for this position is being recommended under a separate staff summary at this Board meeting. The third amendment is related to a change in the Operations Division due to a union settlement.

The amendments are:

1. Title change to a vacant position in the MIS Department, Administrative Division, Database Analyst Programmer, Unit 6, Grade 11, to Systems Administrator II, Unit 6, Grade 11, to align position with organizational structure as recommended in the MIS Five Year Plan.
2. New position, Director, Environmental & Regulatory Affairs, Non-Union Grade 16, in the Operations Division.

3. Title and grade change to a filled position in the Pipe Maintenance – Wastewater Department, Operations Division, Sewer Maintenance Foreman, Unit 2 Grade 17 to Sewer Maintenance Supervisor Unit 2 Grade 19, due to a union settlement.

The first amendment requires approval by the Personnel and Compensation Committee. The second and third amendments require Board approval after review by the Personnel and Compensation Committee.

BUDGET/FISCAL IMPACT:

The annualized budget impact of these PCR amendments is a cost of \$149,948. Staff will ensure that the cost increase associated with these PCR amendments will not result in spending over the approved FY17 Wages and Salaries budget.

ATTACHMENTS:

New/Old Job Descriptions

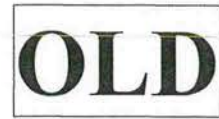
**MASSACHUSETTS WATER RESOURCES AUTHORITY
POSITION CONTROL REGISTER AMENDMENTS
FISCAL YEAR 2018**

PCR AMENDMENTS REQUIRING PERSONNEL & COMPENSATION COMMITTEE APPROVAL - October 18, 2017

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	
P2	Administration MIS 8610048	V	T, G	Database Analyst Programmer	6	11	Systems Administrator II	6	11	N/A	N/A - N/A	N/A - N/A	To align position with organizational structure as recommended in the MIS 5 Year Plan	
PERSONNEL & COMP COMMITTEE TOTAL =											1	SUBTOTAL:		\$0 - \$0

PCR AMENDMENTS REQUIRING BOARD APPROVAL - October 2017

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
B1	Position To Be Added	N/A	N/A	N/A	N/A	N/A	Director, Environmental & Regulatory Affairs	NU	16	N/A	\$142,500 - \$142,500	\$142,500 - \$142,500	To address a staffing need in the Operations Division
B2	Operations Pipe Maint - WW 5434006	F	T, G	Sewer Maintenance Foreman	2	17	Sewer Maintenance Supervisor	2	19	\$75,646	\$83,094 - \$83,094	\$7,448 - \$7,448	Union Settlement
BOARD TOTAL =					2	SUBTOTAL:		\$149,948 - \$149,948					
GRAND TOTAL =					3	TOTAL ESTIMATED COSTS:		\$149,948 - \$149,948					



MWRA
POSITION DESCRIPTION

JOB TITLE: Database Analyst Programmer

DEPARTMENT: MIS

DIVISION: Administration & Finance

BASIC PURPOSE:

Primary technical lead in support of assigned applications including, senior level programming, systems project management, application maintenance and database integrity. Defines and develops new functionality, database structures, application interfaces and the critically shared data elements through a comprehensive understanding of the MWRA's business functions.

SUPERVISION RECEIVED:

Works under the general supervision of the Data Resources Manager.

SUPERVISION EXERCISED:

Exercises close supervision of assigned project staff and technical resources.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Assures the quality and integrity of the production version of assigned applications in compliance with SDM and Change Control Procedures.
- Manages new release and maintenance support activities provided by the assigned applications vendor.
- Identifies new business functions and defines information technology solutions to address the new functions.
- Defines the logical and physical organization of assigned application related data which support targeted business functions.
- Develops database definition and program code required to implement new modules, reports, and interfaces with other systems.
- Coordinates and executes quality assurance and system acceptance procedures.

- Validates the content of data structures for data security and data accuracy.
- Manages assigned technical staff resources and combined user and MIS implementation task forces.
- Analyzes and specifies the operational requirements of assigned applications.
- Participates in the identification and evaluation of the storage medium organization techniques and access methods.

SECONDARY DUTIES:

Performs related duties as required.

DESIRED MINIMUM QUALIFICATIONS:

- (A) A four (4) year college program in computer science or related field. Advance degree preferred.
- (B) Six (6) to eight (8) years of experience with assigned systems and/or environmental software, preferably with vendor supplied packages. Expertise in minicomputer/server application and database programming.
- (C) Any equivalent combination of education and/or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Knowledge of information system design and programming.
- (B) Proficiency with the following required: 3rd and 4th generation languages, Oracle Discover, Crystal Reports, Oracle DBMS, and SQL.
- (C) Proficiency with several of the following preferred: Pretreatment Information Management Systems (IPS), Black and Veatch Legacy PIMS, Beckman Lab Manager, LabWare LIMS, SAMS, Crystal Enterprise XI and GIS. Experience in SQL Server, J2EE, ASP.NET, and Power Builder development methodology is preferred.
- (D) Demonstrated experience in project management techniques and the ability to establish effective relationships with users.

SPECIAL REQUIREMENTS:

None

TOOLS AND EQUIPMENT USED:

Office equipment as normally associated with the use of telephone, personal computers including word processing and other software, copy and fax machines.

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools or controls and reach with hands and arms. The employee frequently is required to sit and talk or hear. The employee is occasionally required to walk; stand; climb or balance; stoop, kneel, crouch, or crawl; taste or smell.

The employee must frequently lift and/or move up to 25 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision and color vision, and the ability to adjust focus.

WORK ENVIRONMENT:

The work characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee occasionally works in various field settings and in an office environment.

The noise level in the work environment is a moderately quiet office setting.

June 2008



MWRA
POSITION DESCRIPTION

POSITION: Systems Administrator II

PCR#:

DEPARTMENT: MIS

DIVISION: Administration & Finance

BASIC PURPOSE:

Responsible for installing, configuring and maintaining operating systems, workstations, and servers. Schedules and performs software installations and upgrades to operating systems and layered software packages. Monitors and tunes systems to achieve optimum performance levels. Evaluates, implements and manages software/hardware solutions to ensure workstation/server data integrity, storage and retrieval. Develops and communicates standard operating procedures. Incorporates long-term system, operations and administration requirements in information systems planning documents.

SUPERVISION RECEIVED:

Works under the general supervision of the Section Manager. On specific IT projects may be supervised by a team lead or project manager.

SUPERVISION EXERCISED:

None

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- System Administration:
 - Servers
 - Supports and performs system management functions for all assigned systems supporting MWRA data processing environments.
 - Development of scripts to perform administrative tasks.
 - Storage
 - Responsible for support of current storage and backup systems
 - Develops and implements backup scripts and jobs for all MWRA systems
 - Conducts backups for current operating environments. Maintains onsite backup records and logs. Restores files and file systems as needed.

- Applications:
 - Provides application administration and technical support for MWRA's email and mobile device systems.
- Participates and prepares for Disaster Recovery planning and test activities.
- Incident and Problem Management
 - Respond to events, and reported outages to correct and resolve issues
 - Investigate root cause and determine systemic solutions for identified environment problems
- System Documentation:
 - Documents operating procedures to conform to MWRA standards
 - Develops capacity management reports for capacity planning efforts
 - Documents system configurations for networks, servers and storage environments
- System Performance Monitoring, Management and Design
 - Keeps abreast of the latest technologies and solutions, and provides expertise to the MIS Management Team in evaluating and selecting appropriate solutions.
 - Monitors networks, servers and storage for event management and coloration

OTHER DUTIES:

- Shares in on-call rotation and emergency response tasks as needed.
- Participates in occasional off-site travel, extended hours and weekend work.
- Perform related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience

- (A) A four (4) year college program in management science, engineering management, computer science or related fields; and
- (B) Three (3) to five (5) years' experience, in network and systems management, or;
- (C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Experience with Backup technology, and entire range of functionality and configuration. Experience with one or more of Backup products, such as Data Protector, Backupexec, Netbackup and or Networker, as well as SDLT and LTO tape libraries.
- (B) Experience with Network Storage, SAN environment, HP Command View interface, virtualized environment and vSphere ESX/ESXi.

- (C) Technical knowledge and experience with large networks, network switching and routing protocols, LANs, WANs, VoIP, TCP/IP Protocol, and Cisco Networking products.
- (D) Experience with MS Windows OS, Active Directory including Group Policy, Kerberos, and LDAP,
- (E) Knowledge of Unix operating systems, VI editor, and shell scripts. HP-UX Itanium experience is preferred.
- (F) Understanding of Building Automation and Control systems and associated set point control, HVAC, Fire Alarm, and UPS systems as applied to the Environmental Alarm System.
- (G) Excellent technical project management, interpersonal, written and oral communication skills are required.

SPECIAL REQUIREMENTS:

Information Technology Infrastructure Library (ITIL) Foundation Certification or the ability to obtain within 6 months.

And at least one of the following certifications within one year:

- Microsoft Certified Solutions Engineer (MCSE)
- SQL Data Management and Analytics
- VMware Data Center Virtualization Certifications: VCAP – Data Center one of the current storage infrastructure certification (e.g. HP, NetApp or EMC).

TOOLS AND EQUIPMENT USED:

Mini-computer consoles, tape and disk storage systems, various network and peripheral devices and office equipment as normally associated with the use of telephone, personal computers including word processing and other software, copy and fax machines.

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform essential functions.

While performing the duties of this job, the employee works is regularly required to use hands to finger, handle, feel or operate objects, tools or controls and reach with hands and arms. The employee frequently is required to sit and talk or hear. The employee is occasionally required to walk; stand; climb or balance; stoop, kneel, crouch, or crawl; taste or smell.

The employee must frequently lift and/or move up to 25 pounds and occasionally lift and/or

move up to 50 pounds. Specific vision abilities required by this job include close vision and color vision, and the ability to adjust focus.

WORK ENVIRONMENT:

The work characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee works in a computer center, network closets and occasionally works in various field settings. The employee regularly works near moving mechanical parts, and is occasionally exposed to risk of vibration and electromagnetic radiation. The employee is occasionally exposed to risk of electrical shock. The Computer Center also uses automatically discharging chemicals to suppress fire.

The noise level in the work environment is a moderately loud office setting.

September 2017

MWRA
POSITION DESCRIPTION

NEW

POSITION: Director, Environmental and Regulatory Affairs

PCR#:

DIVISION: Operations

DEPARTMENT: Operations Administration

BASIC PURPOSE:

Develops and oversees implementation of environmental policy on behalf of the Authority. Represent MWRA at meetings with environmental regulatory agencies and other constituencies to support MWRA programs and objectives. Oversees the Authority's Metropolitan Tunnel Redundancy Environmental Review and Permitting efforts, as well as environmental permitting for all Authority projects.

SUPERVISION RECEIVED:

Works under the general supervision of the Chief Operating Officer and Deputy Chief Operating Programs, Policy and Planning.

SUPERVISION EXERCISED:

Exercise supervision of MWRA and Consultant staff assigned to the MWRA's Tunnel Redundancy Project environmental review efforts, as well as environmental compliance staff in the Operations Division.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Directs the Metropolitan Water Redundancy Planning Project through the environmental review stage and continues to provide oversight and review of the Project's environmental permitting compliance throughout design and construction stages.
- Oversees permitting support and policy guidance on matters of significant concern on projects of agency-wide significance due to their size, scale, sensitivity or complexity.
- Directs and oversees environmental permitting and makes recommendations on Authority permitting and operational decisions based on research of state and federal policy and

trends in approaches.

- Manages Water System expansion initiatives and water and sewer requests from outside the service area.
- Manages Water Supply Contracts and Contract Renewal Process for MWRA's Water Supply Contract Communities.
- Manages the development and implementation of special projects, which require senior level policy involvement and interdepartmental coordination.
- Oversees work among the other Operations departments and other Authority divisions requiring staff coordination regarding inter-agency environmental, regulatory and permitting issues for significant MWRA projects.
- Analyzes a broad range of programmatic, resource and communications issues affecting MWRA projects, activities and constituencies and recommends Authority policy direction.
- Participates in and represents the MWRA at regional and national forums such as NEWEA and NACWA, as appropriate.
- Represents the Authority at public meetings and, as appropriate, speaks publicly at workshops, conferences and events on Authority initiatives.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) Analytical and writing skills as normally attained through a four (4) year college program. Graduate degree in public administration, law or related field preferred; and
- (B) Ten (10) years professional experience with state and federal environmental regulations development and compliance.
- (C) Skills in management and policy analysis as acquired by a minimum of nine (9) to twelve (12) years experience in a public sector environment; or

Necessary Knowledge, Skills and Abilities:

- (A) Familiarity with water and sewer infrastructure issues preferred.
- (B) Excellent interpersonal, oral and written communication skills required.
- (C) Extensive experience with federal and state environmental regulations.

SPECIAL REQUIREMENTS:

A valid Massachusetts Class D Motor Vehicle Operators License.

TOOLS AND EQUIPMENT USED:

Office machines as normally associated, with the use of telephone, personal computer including word processing and other software, copy and fax machine.

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to 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.

September 2017



MWRA
POSITION DESCRIPTION

POSITION: Sewer Maintenance Foreman

PCR#:

DIVISION: Operations

DEPARTMENT: Pipe Maintenance-Wastewater

BASIC PURPOSE:

Assists in the supervision of crew's work in the inspection, operation, and maintenance of the Authority's sewer lines and associated MWRA sewer system facilities, performs related work as required and documents a variety of maintenance activities.

SUPERVISION RECEIVED:

Works under the general supervision of Sewer Maintenance Supervisor.

SUPERVISION EXERCISED:

Exercises close supervision over personnel who comprise the Pipeline Maintenance Crews.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Assists in the preparation of routine and emergency pipeline maintenance plans including work sequencing, scheduling, cost estimating, and assembling work order packages.
- Supervises and participates with work crews on related construction projects.
- Assists in the preparation of daily and weekly job status and time utilization reports to track execution of written work plan. Details include, but are not limited to, crew time productivity, material utilization and costs, equipment utilization and costs, and pipeline data collection and identification information.
- Utilizes computer technology, computerized maintenance management software, and other software to perform work order reporting, time utilization and written work plan completion.
- Supervises and participates with work crews supporting Department and Division projects that involve performing community assistance.

- Inspects applicable equipment and vehicles before and after each assignment.
- Operates applicable equipment such as vector jets, bucket machines, cranes, snow plows, etc as needed.
- Conducts "Tool Box Talks" on applicable safety practices and maintenance procedures.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) Basic reading, writing, mathematical and oral communication skills as normally attained through a high school education; or
- (B) Three (3) to five (5) years of related experience within a large sewer collection system including supervisory experience; or
- (C) Any equivalent combination of education and, experience and MWRA supervisory training.

Necessary Knowledge, Skills and Abilities:

- (A) Working knowledge of methods, practices and techniques used in the maintenance, cleaning and repair of sewers.
- (B) Working knowledge of the mechanical and masonry trades.
- (C) Ability to maintain and repair sewer lines, locate sewer stoppages and leaks, and operate sewer-cleaning equipment.
- (D) Ability to read and understand blueprints.
- (E) Ability to keep accurate records.
- (F) Knowledge of applicable safety equipment and practices.

SPECIAL REQUIREMENTS:

A valid Massachusetts Hoisting License 1B, 2A and 4A.

Grade II Wastewater Collection Systems Operator Certification or the ability to obtain within a year.

A current and valid Massachusetts Class B Commercial Drivers License (CDL). Will be subject to be controlled substances and alcohol testing policy and the random drug-testing program.

TOOLS AND EQUIPMENT USED:

Motor vehicles, sewer maintenance equipment, power and hand tools, mobile radio, portable gas monitors, confined space entry equipment, telephone, beeper.

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential 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 to reach with hands and arms. The employee frequently is required to stoop, kneel, crouch or crawl. The employee is occasionally required to stand, walk, talk, hear, sit, climb or balance.

The employee must frequently lift and/or move up to 25 pounds and occasionally lift and/or move up to 100 pounds. Specific vision abilities required by this job include close, distance and peripheral vision, and the ability to adjust focus.

WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly works near moving mechanical parts and is frequently exposed to wet and/or humid conditions and vibration. The employee occasionally works in precarious places and is occasionally exposed to fumes and airborne particles, toxic or caustic chemicals and risk of electric shock.

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

October 2016



MWRA
POSITION DESCRIPTION

POSITION: Sewer Maintenance Supervisor

PCR#:

DIVISION: Operations

DEPARTMENT: Field Operations

BASIC PURPOSE:

Supervises a crew and participates in the inspection, operation, and maintenance of the Authority's sewer lines and associated MWRA sewer system facilities, documents a variety of maintenance activities and performs related work as required.

SUPERVISION RECEIVED:

Works under the general supervision of the District Supervisor.

SUPERVISION EXERCISED:

Exercises close supervision over personnel who comprise the pipeline maintenance crews.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Supervises assigned staff in the performance of a variety of inspection, operations and maintenance functions.
- Supervises assigned crews including taking disciplinary actions (issuing verbal warnings and initiating written warnings) when necessary, conducting performance reviews, and preparing regular reports, as required, on work accomplished and crew productivity
- Determines the daily assignments for assigned staff and distributes work accordingly. Establishes deadlines and priorities on the basis of the maintenance schedule or emergencies.
- Inspects applicable equipment and vehicles before and after each assignment...
- Operates applicable equipment such as vactor jets, bucket machines, cranes, snow plows, etc as needed.

- Assists in the preparation of pipeline maintenance plans including work sequencing, scheduling, cost estimating, and assembling work order packages.
- Assists in the preparation of daily and weekly job status and time utilization reports to track execution of written work plan. Details include, but are not limited to, crew time productivity, material utilization and costs, equipment utilization and costs, and pipeline data collection and identification information.
- Reviews and distributes computer generated work orders on a daily basis.
- Utilizes computer technology, computerized maintenance management software, and other software to perform work order reporting, time utilization and written work plan completion.
- Conducts applicable training sessions such as "Tool Box Talks" and develops training programs as needed.
- Maintains effective working relationships with municipal officials.
- Works in a supervisory capacity on a pipeline maintenance crew performing required work as needed.
- Responds to and rectifies complaints related to sewer/drain lines within the Authority's Sewer District.
- Assists with the supervision of pipeline maintenance support activities such as community assistance, metering and technical inspection projects.
- Performs related administrative activities as required such as completing personnel actions and generating budgeting reports.
- Performs light maintenance independently or as part of a team. Light maintenance shall include but not limited to:
 - Operates forklift or other light equipment not requiring a special license.
 - Generates inspection lists and maintenance reporting through the Computerized Maintenance Management System.
 - Inspects and troubleshoots various systems and equipment
 - Installs and retrofits/new equipment related to plant systems.
 - Modifies and/or aligns existing equipment to specifications.

- With proper training sets up ladders, staging and rigging and utilizes hoists, jacks, dollies, lifts, etc. for proper access to job and to remove and install equipment.
- Operates portable pumping, ventilation and other equipment necessary to support and accomplish assigned tasks.
- Greases and lubricates, replaces oil reserves, makes minor packing adjustments and opens hatches.
- Installs safety rails, changes light bulbs and replaces HVAC filters.
- Removes snow from immediate work area in order to perform tasks.
- Conducts routine testing, lockout/tagout, operation (startup/shutdown) and adjustment of process equipment.
- Performs necessary cleanup and housekeeping for work area and other light maintenance tasks.

SECONDARY DUTIES:

- Assists employees with preparation of injury/illness reports, safety and maintenance work orders, and assures that they keep high quality, accurate related documents and records.
- Assists in maintaining harmonious labor management relations through proper application of collective bargaining agreement provisions and established personnel policies.
- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) High school education or equivalent. Associates degree in a related engineering field preferred; and
- (B) Three (3) to five (5) years of related experience within a large municipal sewer collection system with a minimum of three (3) years in a supervisory capacity, or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Thorough knowledge of methods, practices, techniques and equipment used in sewer line maintenance.
- (B) Ability to read and understand blueprints.
- (C) Knowledge of construction methods and applicable hydraulics.
- (D) Knowledge of applicable safety practices and equipment.
- (E) Basic computer skills.

SPECIAL REQUIREMENTS:

A valid Massachusetts Hoisting License 1B, 2A, 3A (within 1 year) and 4A.

Grade II Wastewater Collection Systems Operator License or ability to obtain within one year.

A current and valid Massachusetts Class B Commercial Drivers License (CDL). Will be subject to be controlled substances and alcohol testing policy and the random drug-testing program.

TOOLS AND EQUIPMENT USED:

Motor vehicles, sewer maintenance equipment, power and hand tools, mobile radio, portable gas monitors, confined space entry equipment, telephone, beeper.

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential 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 to reach with hands and arms. The employee frequently is required to stoop, kneel, crouch or crawl. The employee is occasionally required to stand, walk, talk, hear, sit, climb or balance.

The employee must frequently lift and/or move up to 25 pounds and occasionally lift and/or move up to 100 pounds. Specific vision abilities required by this job include close, distance and peripheral vision, and the ability to adjust focus.

WORK ENVIRONMENT:


The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly works near moving mechanical parts and is frequently exposed to wet and/or humid conditions and vibration. The employee occasionally works in precarious places and is occasionally exposed to fumes and airborne particles, toxic or caustic chemicals and risk of electric shock.

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

August 2016

STAFF SUMMARY

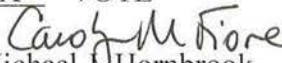

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: October 18, 2017
SUBJECT: Appointment of Director, Environmental and Regulatory Affairs

COMMITTEE: Personnel & Compensation

Karen Gay-Valente, Director, Human Resources
Carolyn M. Fiore, Deputy Chief Operating Officer
Preparer/Title

 INFORMATION

 X VOTE


Michael J. Hornbrook
 Chief Operating Officer

RECOMMENDATION:

To approve the appointment of Ms. Bethany A. Card to the position of Director, Environmental and Regulatory Affairs, (Non-Union, Grade 16) in the Operations Administration Department, at the recommended annual salary of \$142,500, commencing on a date to be determined by the Executive Director.

DISCUSSION:

The position of Director, Environmental and Regulatory Affairs, in the Operations Division, is a new position. The position is being created to fill a gap in the area of environmental policy and regulatory affairs, heightened by the impending retirement of the member of senior staff who is responsible for various permitting issues and the early phases of the new water tunnel redundancy. As the Authority moves forward with the Water Tunnel Redundancy Program, a clear need for a senior level position with high level regulatory policy development and permitting experience has been identified. The position, which will report to the Chief Operating Officer (and the Deputy Chief Operating Officer for Programs, Policy and Planning), will be responsible for developing and overseeing environmental policy as well as environmental permitting under state, local and federal laws and regulations, for all Authority projects. In this capacity, the Director will represent the Authority in various regional and national "clean water" organizations such as the New England Water Environment Association and the National Association of Clean Water Agencies. The responsibilities of the position require high level management and policy analysis skills as well as excellent interpersonal, oral and written communication skills.

Ms. Bethany A. Card currently serves as the Deputy Commissioner for Policy and Planning at the Massachusetts Department of Environmental Protection (DEP). In this position, she plays a key role in implementing DEP's priorities, which include improved protection of public health and the environment as well as permit streamlining and regulatory reform. In addition to exercising oversight of senior leadership in DEP's Bureaus of Planning and Evaluation, Water Resources, Air and Waste, Waste Site Cleanup, and the Clean Energy Results Program, Ms.

Card manages the Commissioner's policy and regulatory initiatives. Her recent experience includes the development and implementation of Governor Baker's regulatory reform process for DEP; the design and preparation of the legislative strategy and materials in support of Governor Baker's proposed legislation for delegation of the National Pollutant Discharge Elimination System from the U.S. EPA; the management of DEP's Lead in Schools Initiative; and the development of DEP's regulatory process to implement the Global Warming Solutions Act and Governor Baker's Integrated Climate Strategy for the Commonwealth.

Prior to her appointment as the Deputy Commissioner for Policy and Planning at DEP, Ms. Card served as DEP's Assistant Commissioner for the Bureau of Water Resources. She was also employed for 13 years at the New England Interstate Water Pollution Control Commission, managing grants and contracts related to Water Quality projects and initiatives, managing staff, and coordinating with various local, state, and federal entities on Clean Water initiatives.

Given Ms. Card's exemplary experience in her DEP roles, she was recruited for this position. Ms. Card will bring extensive environmental policy, permitting and regulatory initiative development skills to the MWRA. She has a notable career in the public policy arena around environmental regulatory affairs, and in addition to adding significant value to MWRA's environmental policy initiatives, she will play a critical role in directing and overseeing MWRA's Metropolitan Tunnel Redundancy Environmental Review and Permitting efforts. For full disclosure, Ms. Card's husband, Michael Altieri, is an Associate General Counsel here at MWRA. Mr. Altieri has had no involvement in the hiring process and will not be working in the same reporting chain as Ms. Card, thus there is not any conflict of interest issue. There is, however, a long-standing management policy that prohibits the hiring of relatives of high ranking MWRA staff. This policy was created administratively and is within the Executive Director's authority to waive, which he has done in making this recommendation to hire Ms. Card.

Ms. Card holds a Bachelor of Arts Degree in Political Science, with a minor in Environmental Conservation and Business Administration, from the University of New Hampshire, and a Juris Doctorate from the Massachusetts School of Law in Andover, Massachusetts.

BUDGET/FISCAL IMPACT:

There are sufficient funds in the FY18 CEB for this position.

ATTACHMENTS:

Resume of Bethany A. Card
Position Description
Organizational Chart

Bethany A. Card

PROFESSIONAL ASSOCIATIONS, AWARDS, AND VOLUNTEER ACTIVITIES

Boston Bar Association – Wetlands, Waterways and Water Quality Committee Co-Chair (2015-PRESENT)

Association of Clean Water Administrators Board Member (2014-2015) and Legal Affairs Task Force Chair (2006 – 2014)

U.S. Environmental Protection Agency Environmental Merit Award Winner (2009)

City of Newburyport – Mayor’s Energy Advisory Committee (2008-2009)

New England Water Environment Association – Wetlands Committee Chair (2003 – 2005)

EXPERIENCE

Massachusetts Department of Environmental Protection, Boston MA

APRIL 2015 – PRESENT: Serve as Deputy Commissioner for Policy and Planning and therefore is responsible for ensuring that all MassDEP policies and programs, from all media, are coordinated, effective, and result in measurable environmental results. The Deputy Commissioner plays a lead role in implementing the Commissioner's priorities (including improved protection of public health and the environment); new approaches (including permit streamlining and regulatory reform; management improvements and organizational changes); environmental/public health risk assessment and standards; and environmental monitoring. The key responsibilities of this position include:

- Oversight of the senior leadership staff managing work in the Bureaus of Planning and Evaluation, Water Resources, Air and Waste, Waste Site Cleanup, and the Clean Energy Results Program.
- Designing a formal process, including proposed regulatory changes, stakeholder involvement, and regulatory proceedings for the purposes of implementing Governor Baker’s Executive Order 562 – To Reduce Unnecessary Regulatory Burden.
- Preparing and presenting to senior officials in the Executive Office of Energy and Environmental Affairs, the background, briefing materials, legislative strategy, and design of the Massachusetts Pollutant Discharge Elimination System program in support of Governor Baker’s legislative filing.
- Advise leadership staff on the regulatory process and preparation of six regulations and amendments for the purposes of implementing the Global Warming Solutions Act in compliance with the Supreme Judicial Court’s decision in *Kain v. MassDEP* and Governor Baker’s Executive Order 569 – Establishing an Integrated Climate Strategy for the Commonwealth.
- Educate legislators about key Department initiatives and programs.
- Manage the Commonwealth’s Lead in Schools Initiative –which involves sample collection, analysis, and communication regarding the results for over 800 schools across the Commonwealth.
- Draft press releases and participate in interviews with the press including newspaper, radio, and television.

- Give presentations on Department priority programs in formal and informal settings on a monthly basis. Example forums include: the Environmental Business Council, Massachusetts Water Works Association, Boston Bar Association, Associated recycling and electric vehicle events, Water Resources Commission, and the Massachusetts Coalition for Water Resource Stewardship.
- Serve as the final decision maker in judicial matters before the Department.

NOVEMBER 2011 - MARCH 2015: Served as the Assistant Commissioner, Bureau of Water Resources, which is responsible for protecting critical inland and coastal water resources by controlling point and nonpoint sources of pollution, safeguarding public drinking water supplies, ensuring public access to the waterfront, and administering revolving loan programs that help the state's towns and cities improve their environmental infrastructure.

New England Interstate Water Pollution Control Commission, Lowell MA

APRIL 2002 - NOVEMBER 2011: Served as the Director of Water Quality Programs, overseeing the New England Interstate Water Pollution Control Commission (NEIWPCC) water quality, watershed and wetlands programs including the Lake Champlain Basin Program, Connecticut River - Long Island Sound TMDL, Stormwater Phase II Rulemaking, and Numeric Nutrient Criteria Development Efforts. This role also involves project and staff management associated with key Clean Water Act programs such as Water Quality Standards, Total Maximum Daily Loads (TMDLs), Monitoring and Assessment, Permitting, Mercury and Public Health, and Wetlands. In the course of this management role the following tasks were performed:

- Managed grants and contracts that combined amount to approximately \$5 - \$7 Million annually and were used to support projects and initiatives in NEIWPCC's Water Quality Division.
- Directly supervised four Masters and/or Doctorate level staff persons and 15 additional staff persons with various experience levels in satellite offices throughout the Northeast.
- Lead and participated on teams of appropriate state and federal partners involved in Water Quality Division projects, develop agendas, facilitate discussions, problem-solve, and effectuate results.
- Coordinated state activities associated with development and implementation of the Northeast Regional Mercury TMDL (U.S. EPA - Approved December 21, 2007).
- Served as leader to the New England states and New York State in the development and submittal of the first Clean Water Act §319(g) Petition intended to foster state and federal agreement and action on the control of out of region contributions of atmospheric deposition of mercury. (*Submitted to U.S. EPA October 28, 2008, §319(g) Management Conference held June 22 - 23, 2010*).
- Responded to State Water Program Director and Commissioner Office requests for information and updates on current Clean Water Act initiatives.
- Prepared position papers regarding federal policies on behalf of the Northeastern states, and research and review current legislative initiatives and judicial rulings at both the state and federal level. Examples of specific policies that were researched and analyzed include the following:
 - *U.S. EPA Response to States' Efforts on the Development of Numeric Nutrient Criteria (January 2011)*

- U.S. EPA Guidance Memorandum related to Establishing Waste Load Allocations for Stormwater Sources (January 2011)
- Various legislative proposals from the U.S. Congress and Executive Branch guidance documents related to the definition of waters of the U.S. and Clean Water Act jurisdiction (2006 - 2011)
- U.S. EPA proposed rulemaking related to Clean Water Act §106 grant funding for National Pollutant Discharge Elimination System (NPDES) permitting programs (February 2007)

- Participated on national and regional working groups for developing federal and regional water quality strategies and initiatives.
- Designed and organized outreach and training programs, for small and large groups, relevant to Clean Water Act programs.
- Provided legal counsel for questions related to NEIWPCC operations and environmental policy.

NOVEMBER 1998 – APRIL 2002: Served as an Environmental Analyst for NEIWPCC. This role involved managing water quality projects and working with State and Federal workgroups.

New Hampshire Department of Environmental Services, Concord, NH

MAY 1996 – NOVEMBER 1998: In the role of Program Planner, performed the following tasks: prepared grant contracts for local entities participating in the state Source Water Protection Grant Program, organized outreach seminars for public water suppliers, generated inventories of source water protection areas using a Geographical Information System.

SEPTEMBER 1995 – APRIL 1996: Worked as a Wetlands Bureau Intern and educated landowners about wetland rules and enforcement actions. Prepared case summaries for Wetlands Board enforcement hearings and investigated sites in response to complaints of wetlands disturbances and violations.

OTHER PROFESSIONAL EXPERIENCE

Guest Lecturer: Boston College, University of Massachusetts at Lowell, Tufts University, and Massachusetts School of Law – state and federal Clean Water Act regulatory programs.

Co-Instructor: Clean Water Act 101 – Portsmouth, NH, Albany, NY, and Hartford, CT.

SELECTED PUBLICATIONS AND PRESENTATIONS

Card B. 2012-2017. 'MassDEP Bureau of Water Resources Regulatory Update' Presentation at the Massachusetts Continuing Legal Education Environmental Seminar, Boston, MA.

Card B. 2011. 'Using the Clean Water Act to solve a Clean Air Act Problem' Presentation at the American Bar Association Section of Environment, Energy, and Resources Annual Conference, San Diego, CA.

Card B. 2010. 'Raining Cats and Dogs and Everything Else: Stormwater Management in the U.S.' Presentation at the *National Association of Clean Water Agencies* Clean Water Law Seminar, Santa Fe, NM.

Card B., and S.King 2010. 'The Northeast Regional Mercury TMDL and CWA §319(g) Petition' Presentation at the CWA §319(g) Conference, Philadelphia, PA.

Card B. and W. Taylor 2007. 'TMDL Development: History, Innovations, Legalities, and How You Can Be Involved' Presentation at the *Maine Rural Water Association* Annual Meeting, Freeport, ME.

EDUCATION

MASSACHUSETTS SCHOOL OF LAW, Andover, MA
J.D. received May 2003

UNIVERSITY OF NEW HAMPSHIRE, Durham, NH
B.A. in Political Science, minor studies in Environmental Conservation and Business Administration, received May 1996

References available upon request.

MWRA
POSITION DESCRIPTION

POSITION: Director, Environmental and Regulatory Affairs

PCR#:

DIVISION: Operations

DEPARTMENT: Operations Administration

BASIC PURPOSE:

Develops and oversees implementation of environmental policy on behalf of the Authority. Represent MWRA at meetings with environmental regulatory agencies and other constituencies to support MWRA programs and objectives. Oversees the Authority's Metropolitan Tunnel Redundancy Environmental Review and Permitting efforts, as well as environmental permitting for all Authority projects.

SUPERVISION RECEIVED:

Works under the general supervision of the Chief Operating Officer and Deputy Chief Operating Programs, Policy and Planning.

SUPERVISION EXERCISED:

Exercise supervision of MWRA and Consultant staff assigned to the MWRA's Tunnel Redundancy Project environmental review efforts, as well as environmental compliance staff in the Operations Division.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Directs the Metropolitan Water Redundancy Planning Project through the environmental review stage and continues to provide oversight and review of the Project's environmental permitting compliance throughout design and construction stages.
- Oversees permitting support and policy guidance on matters of significant concern on projects of agency-wide significance due to their size, scale, sensitivity or complexity.
- Directs and oversees environmental permitting and makes recommendations on Authority permitting and operational decisions based on research of state and federal policy and

trends in approaches.

- Manages Water System expansion initiatives and water and sewer requests from outside the service area.
- Manages Water Supply Contracts and Contract Renewal Process for MWRA's Water Supply Contract Communities.
- Manages the development and implementation of special projects, which require senior level policy involvement and interdepartmental coordination.
- Oversees work among the other Operations departments and other Authority divisions requiring staff coordination regarding inter-agency environmental, regulatory and permitting issues for significant MWRA projects.
- Analyzes a broad range of programmatic, resource and communications issues affecting MWRA projects, activities and constituencies and recommends Authority policy direction.
- Participates in and represents the MWRA at regional and national forums such as NEWEA and NACWA, as appropriate.
- Represents the Authority at public meetings and, as appropriate, speaks publicly at workshops, conferences and events on Authority initiatives.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) Analytical and writing skills as normally attained through a four (4) year college program. Graduate degree in public administration, law or related field preferred; and
- (B) Ten (10) years professional experience with state and federal environmental regulations development and compliance.
- (C) Skills in management and policy analysis as acquired by a minimum of nine (9) to twelve (12) years experience in a public sector environment; or

Necessary Knowledge, Skills and Abilities:

- (A) Familiarity with water and sewer infrastructure issues preferred.
- (B) Excellent interpersonal, oral and written communication skills required.
- (C) Extensive experience with federal and state environmental regulations.

SPECIAL REQUIREMENTS:

A valid Massachusetts Class D Motor Vehicle Operators License.

TOOLS AND EQUIPMENT USED:

Office machines as normally associated, with the use of telephone, personal computer including word processing and other software, copy and fax machine.

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

While performing the duties of this job, the employee is regularly required to 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.

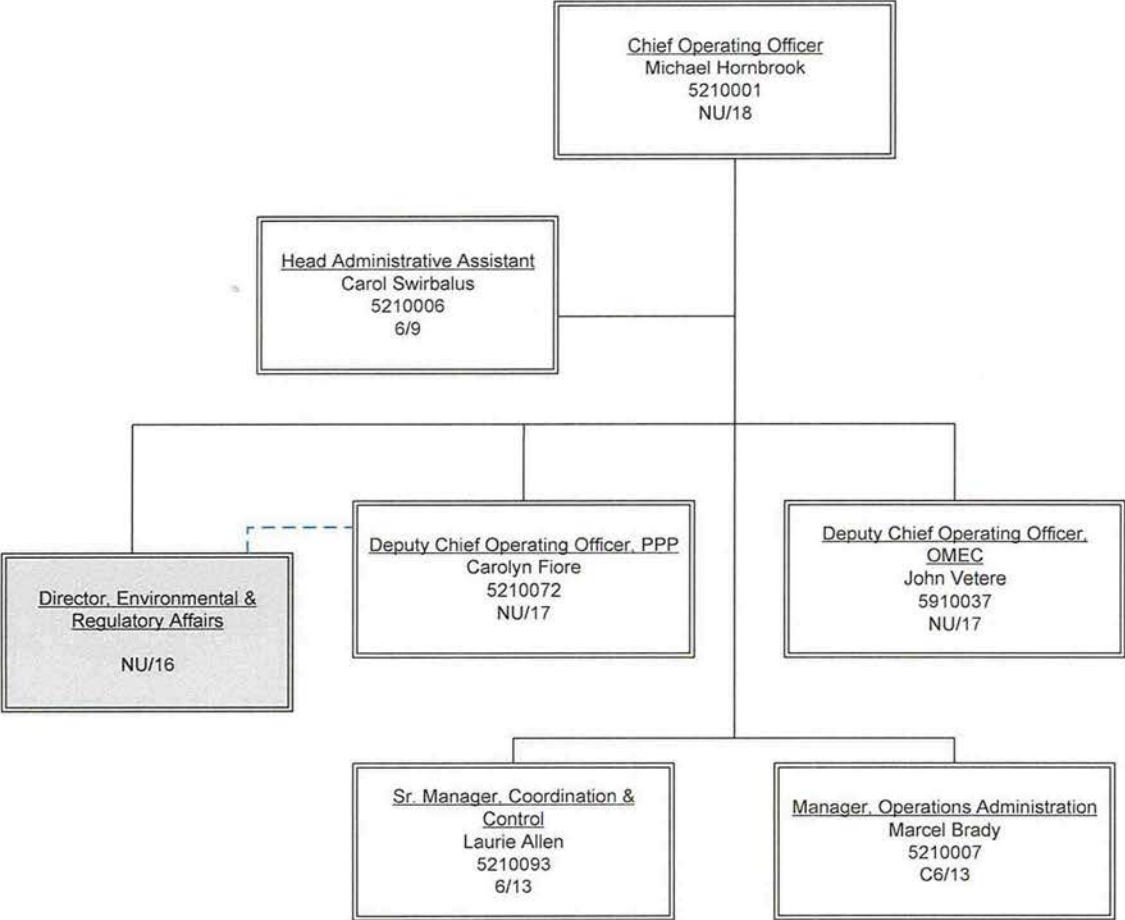
WORK ENVIRONMENT:

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.

September 2017

OPERATIONS DIVISION



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: October 10, 2017
SUBJECT: Appointment of Librarian and Records Manager, MIS Department



COMMITTEE: Personnel and Compensation

INFORMATION
 VOTE

Karen Gay-Valente, Director, Human Resources
Russell J. Murray, Jr., Director, MIS
Preparer/Title


Michele S. Gillen
Director, Administration

RECOMMENDATION:

To approve the appointment of Mr. Patrick Thistle to the position of Librarian and Records Manager (Unit 6, Grade 11), MIS Department, at an annual salary of \$92,416.35 commencing on a date determined by the Executive Director.

DISCUSSION:

The position of Librarian and Records Manager became vacant upon the retirement of the incumbent and reports to IS Custom Support Manager.

This position manages the MWRA Records Center in Marlboro and the MWRA Library in Chelsea and several records and library collections at other MWRA facilities. The Records Center's primary function is the management of inactive physical records in accordance with the Commonwealth of Massachusetts Statewide Records Retention Schedule. The MWRA Library provides information resources and services to MWRA staff, and the public..

Selection Process

This position was posted both internally and externally. A total of 25 candidates applied and four were interviewed. There were two internal and three external applicants referred for the position; one external candidate withdrew after scheduling an interview. The IS Custom Support Manager, former Librarian and Records Manager, and the Manager, Operations Support representing AACU interviewed the candidates and determined that Patrick Thistle was the best qualified candidate based on his experience.

Mr. Thistle has more than 20 years of experience at the MWRA in positions with increasing responsibility. He began working at MWRA in 1995 as a Technical Information Center (TIC) Clerk and was later promoted to an Operations & Maintenance Systems Specialist in 2001, and a Technical IS Administrator in 2006 supporting the records management needs of the Deer Island

Treatment Plant. Mr. Thistle then accepted a position in Chelsea within the Engineering and Construction (E&C) Department's Design Information's Systems Center (DISC) Unit in 2012 supporting records management needs. Prior to working at the MWRA, Mr. Thistle worked as a Document Control Specialist at the Stone and Webster Engineering Corporation.

Mr. Thistle possesses strong and proven customer service skills. He is familiar with the Library operations and services and the MWRA Library Portal application. Having worked for both the DISC Unit of Engineering and Construction Department and the TIC unit of Deer Island's Capital Engineering Department, he has an excellent grasp of the MWRA Operations Division records and their management and underlying data structure.

Mr. Thistle attended Framingham State College and has completed numerous Records Management classes at the MWRA.

BUDGET/FISCAL IMPACT:

There are sufficient funds in the MIS Department FY17 Current Expense Budget to fund this position.

ATTACHMENTS:

Resume of Patrick Thistle
Position Description
Organization Chart

Patrick J. Thistle

Experience:

Massachusetts Water Resources Authority

1995 – Present

100 First Ave, Boston MA

Titles held: Technical Information Systems Administrator, O&M System Specialist and TIC Clerk

Engineering and Construction Department, Design Information Center Systems Center, Chelsea facility

Technical Information Systems Administrator

27/Oct/2012 – Present

- Performs research in conjunction with Library staff to locate and acquire historical and operational information and resources.
- Uses Library Portal to locate O&M manuals, specifications, and perform research.
- Manages new department active records including reports, drawings, microforms, geological materials.
- Performs inventory, research and analysis of department records.
- Department Records Manager (DRM) to manage project turnovers of construction project records working with Contractor, Project Manager, and Records Center staff. Projects included Braintree/Weymouth IPS, East Boston Sewer, North Dorchester Bay (South Boston) and Hultman record turnovers.
- Works closely with Engineering and Construction department personnel on archiving retrieval and disposal of department records from Record Center.
- Supervises departmental staff and interns on the preparation of records for archiving.
- Coordinates with Record Center on the personnel retrieval, archiving, data entry of records. Identifies document types for record series codes for final dispositions.
- Compiles departmental detailed Indices into a searchable format for querying and retrieval.
- Performs Database (InfoStar) Administrator tasks.
- Serve as a Microsoft Access 2016 department test team member.
- Supervises the audit, review, and reorganization of detailed indices and updates and modifies the database for the MWRA archived records collections of MDC Pipelines, Field Books and Shop Drawing Submittals.
- Reviews BHP box archived records collection for Records Manager and recommends boxes for disposal based on client needs and document types.
- Works on special projects such as Shaft 5 break records, Shaft 4 drawing rehabilitation and digitization, Carroll Water Treatment Plant records review, and Construction Photo Project records.

Patrick J. Thistle

*Capital Program Management Dept., Technical Information Center,
Deer Island Treatment Plant facility*

Technical Information Systems Administrator

16/Dec/2016 – 27/Oct/2012

- Supervised TIC staff on the data entry and processing of records and data entry into BHP Infostar records management database system.
- Performed document control functions for all incoming engineering records for DITP.
- Coordinated activities between TIC, Engineering Department and Contractors.
- As a Department Records Officer (DRO), prepared records for archiving, performed research and provided advice on records retention.

O&M System Specialist

25/March/2001 – 16/Dec/2016

- Duties included but not limited to the conversion of DITP documents, microfilm and electronic files.
- Managed vendor contracts, activities and QA/QC of Final Media Turnover of per specifications.

TIC Clerk

20/November/1995 – 25/March/2001

- Receipt, entry, filing and retrieval upon request of all forms of DITP Engineering Documents hard copy and electronic.

Stone & Webster Engineering Corporation

1991 – 1995

Boston MA

Document Control Specialist

- Duties included receipt, cataloging, data entry, query and retrieval upon request. All forms of Engineering project documentation (i.e., specifications, drawings, contractor submittals, reports, studies, calculations).
- Worked closely with Database Development (Infostar) personnel for customization per client needs.
- Performed in a supervisory capacity for contractor submittals, shop drawing control and document to microfilm conversion during the last two years in this position.

Education

- Framingham State College 1980 - 1981
- Everett High School Diploma 1979

Skills

- Comprehensive knowledge of the InfoStar Records Management System
- Fluent in MS Office Applications including MS Access and Excel
- Maximo Enterprise Asset Management System, ESRI GIS, and Autodesk CADD experience

References Furnished Upon Request

**MWRA
POSITION DESCRIPTION**

POSITION: Librarian/Records Manager

PCR#: 8610072

DEPARTMENT: MIS

DIVISION: Administration & Finance

BASIC PURPOSE:

Manages a comprehensive Library Information Research Program and staff, including computer access to source documents, current technical information and reference research that will assist staff and public in having access to MWRA information. Manages a comprehensive Records Management Program assuring compliance with State & Federal statutes, and MWRA requirements.

SUPERVISION RECEIVED:

Reports to the I/S Custom Support Manager.

SUPERVISION EXERCISED:

Exercises close supervision over Library and Records Center staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Develops, recommends and implements Policy and Procedures for both the Library and Records Management Programs.
- Plans, forecasts, implements and manages the budget and cost controls for the Library and Records Management programs including the review and evaluation of all purchases relative to books, subscriptions, microfilm, appropriate equipment and searching services.
- Manages accessibility of information resources including library acquisition, online sources, records identified in corporate records tracking database and provides staff and public, access to appropriate authority information.
- Recommends technological enhancements in coordination with MIS for MWRA staff needs relevant to the Record Management and Library programs.
- Serves as liaison to the Records Conservation Board and serves as the Authority Archivist regarding Record Management issues.
- Oversees the appraisal, disposition and microfilming of all authority records according to the MWRA record retention schedule and the requirements of the Records Conservation Board. Manages the continued standardization, integrity and coordination of the Library and Records Management computerized information

databases that index Library collection, consultant reports, photographs, historical documents and all records in the approved record series.

- Manage the operation and maintenance of the Geologic and Record Center including record protection by providing for offsite storage of micromedia records with vendors.
- Markets Records Management and Library services to all MWRA staff including retrieval of stored information, reference access and information on new technologies.
- Oversees daily operation of the Library and Records Center to assure uninterrupted delivery of services.
- Identifies training and development opportunities for Records Management and Library staff in technical research and appropriate software to assist them in meeting user's needs.

SECONDARY DUTIES:

- Ensures that requests from consultants and the public regarding Authority information are responded to in a timely manner.
- Provides consulting services to departments in the MWRA regarding file organization, document control, and associated equipment costs.
- Perform related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A four (4) year college program in Information Science, Liberal Arts or Science. Masters degree in Library and Information Science preferred.
- (B) Six (6) to eight (8) years experience with a specific understanding of library science and record information management programs, systems and equipment, including at least four (4) years in a management capacity.
- (C) Any equivalent combination of education and/or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Demonstrated ability to plan for and implement new informational technologies including knowledge of computer network usage.
- (B) Proficiencies in computer applications, including electronic media; on-line searching; database and spreadsheet software and electronic communications.
- (C) Excellent written and oral communication skills are required.

SPECIAL REQUIREMENTS:

None

TOOLS AND EQUIPMENT USED:

Office equipment as normally associated with the use of telephone, personal computers including word processing and other software, copy and fax machines.

PHYSICAL DEMANDS:

The physical demands described here are representative of those that must be met by an employee to successfully perform the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform essential functions.

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, tools or controls and reach with hands and arms. The employee frequently is required to sit and talk or hear, climb or balance. The employee is occasionally required to walk; stand; stoop, kneel, crouch, or crawl; taste or smell.

The employee must frequently lift and/or move up to 25 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision and color vision, and the ability to adjust focus.

WORK ENVIRONMENT:

The work characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee frequently works in high, precarious places. The employee occasionally works in various field settings and in an office environment.

The noise level in the work environment is a moderately quiet office setting.

MIS Department

October 2017





MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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

BOARD OF DIRECTORS' MEETING

to be held on

Wednesday, October 18, 2017

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

Time: 1:00 p.m.

AGENDA

I. APPROVAL OF MINUTES

II. REPORT OF THE CHAIR

III. REPORT OF THE EXECUTIVE DIRECTOR

IV. BOARD ACTIONS

A. Approvals

1. Revision to Management Policy for Staff Appointments (ref. P&C B.1)
2. PCR Amendments – October 2017 (ref. P&C B.2)
3. Appointment of Director, Environmental and Regulatory Affairs (ref. P&C B.3)
4. Appointment of Librarian and Records Manager, MIS Department (ref. P&C B.4)

B. Contract Awards

1. CSO Post-Construction Monitoring and Performance Assessment: AECOM Technical Services, Inc., Contract 7572 (ref. WW B.1)

C. Contract Amendments/Change Orders

1. Supply and Delivery of Polymer to the Deer Island Treatment Plant: BASF Corp., Bid WRA-4115, Amendment 1 (ref. WW C.1)
2. Remote Headworks Upgrades: Arcadis U.S., Inc., Contract 7206, Amendment 5 (ref. WW C.2)
3. Chelsea Creek Headworks Upgrade: BHD/BEC JV 2015, A Joint Venture, Contract 7161, Change Order 5 (ref. WW C.3)
4. Northern Intermediate High Section 110 – Reading and Woburn: Albanese D&S, Inc., Contract 7471, Change Order 12 (ref. W B.1)

V. CORRESPONDENCE TO THE BOARD

VI. OTHER BUSINESS

VII. EXECUTIVE SESSION

A. Litigation:

1. DaPrato v. MWRA: Authorization to Increase Budget for Outside Trial Counsel

B. Security:

1. Cyber Security Update

VIII. ADJOURNMENT

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Board of Directors**September 20, 2017**

A meeting of the Board of Directors of the Massachusetts Water Resources Authority was held on September 20, 2017 at the Authority headquarters in Charlestown. Vice-Chair Carroll presided. Present from the Board were Ms. Wolowicz and Messrs. Blackmon, Cotter, Flanagan, Pappastergion, Peña, Vitale and Walsh; Messrs. Beaton and Foti were absent. Among those present from the Authority staff were Frederick Laskey, Executive Director, Steven Remsberg, General Counsel, Michael Hornbrook, Chief Operating Officer, Thomas Durkin, Director of Finance, Michele Gillen, Director of Administration, and Bonnie Hale, Assistant Secretary. The meeting was called to order at 1:00 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 July 19, 2017, as presented and filed with the records of the meeting.

REPORT OF THE EXECUTIVE DIRECTOR

Mr. Laskey reported on various matters, including: offering congratulations to Board member Henry Vitale on his receipt of the Shattuck Chairman's Award for prudent management and inspired leadership of the Boston Water & Sewer Commission, and to Stephen Estes-Smargiassi for his receipt of the American Waterworks Association Fuller Award for distinguished leadership in the water supply field. In addition, Mr. Laskey commented on graphs depicting progress in the recovery of Quabbin Reservoir water levels; advised that Board members would be provided with the specific dates of a

previously-discussed plan to have only one Board meeting in June every year instead of two; and handed out an agenda for an off-site MWRA Managers' Meeting scheduled for September 22, 2017.

BOARD ACTIONS

APPROVALS

Bond Defeasance of Future Debt Service

Upon a motion duly made and seconded, it was

Voted 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 \$9,570,000 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 \$10,601,900 in the FY19 through FY21 timeframe.

PCR Amendment – September 2017

Upon a motion duly made and seconded, it was

Voted to approve an amendment to the Position Control Register as presented and filed with the records of the meeting.

Appointment of Chemist III, Laboratory Services

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Ms. Melissa Sturk to the position of Chemist III (Unit 9, Grade 22) at an annual salary of \$91,416.02, commencing on a date to be determined by the Executive Director.

Appointment of Chemist III, Laboratory Services

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. Kevin Constantino to the position of Chemist III (Unit 9, Grade 22) at an annual salary of \$91,416.02, commencing on a date to be determined by the Executive Director.

Appointment of Regional Manager, Toxic Reduction and Control

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. Alix Pierre-Louis to the position of Regional Manager, Toxic Reduction and Control (Unit 9, Grade 29) at an annual salary of \$110,228.55, commencing on a date to be determined by the Executive Director.

Appointment of Manager, Energy, Operations Division

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. Michael E. McDonald to the position of Manager, Energy (Non-Union, Grade 14) in the Operations Administration Department, at an annual salary of \$129,683, commencing on a date to be determined by the Executive Director.

Appointment of Program Manager, Energy Management, Operations Division

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Ms. Courtney Fairbrother to the position of Program Manager, Energy Management (Unit 9, Grade 29) in the Operations Administration Department, at an annual salary of \$93,061.78, commencing on a date to be determined by the Executive Director.

Appointment of Manager, Metering and Monitoring, Planning Department

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. David A. Liston to the position of Manager, Metering and Monitoring (Non-Union, Grade 14), in the Operations Division, Planning Department, at an annual salary of \$129,682, commencing on a date to be determined by the Executive Director.

Appointment of Manager, SCADA and Process Control

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. Augustin Serino to the position of Manager, SCADA and Process Control (Non-Union, Grade 14) at an annual salary of \$134,769 commencing on a date to be determined by the Executive Director.

Appointment Project Manager, Service Contracts, Metro Maintenance

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Altaf Bhatti to the position of Project Manager, Service Contracts (Unit 9, Grade 25) in the Operations Division, Metropolitan Maintenance Department, at an annual salary of \$90,774.59, commencing on a date to be determined by the Executive Director.

Appointment of Senior Medium Voltage Electrical Specialist, Western Maintenance

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. Robert Bonfiglio to the position of Senior Medium Voltage Specialist (Unit 3, Grade 20) in the Southborough Equipment Maintenance Section at an annual salary of \$86,149.56, commencing on a date to be determined by the Executive Director.

Appointment of Supervisor, Transmission and Treatment Operations, Carroll Water Treatment Plant

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. Thomas Patriarca to the position of Supervisor, Treatment and Transmission Operations (Unit 1, Grade 26) at the John J. Carroll Water Treatment Plant at an annual salary of \$86,746.65, commencing on a date to be determined by the Executive Director.

CONTRACT AWARDS

Supply and Delivery of Sodium Hypochlorite to the Deer Island Treatment Plant: Borden & Remington Corporation, Bid WRA-4413

Upon a motion duly made and seconded, it was

Voted to approve the award of Purchase Order Contract WRA-4413, Supply and Delivery of Sodium Hypochlorite to the Deer Island Treatment Plant, to the lowest eligible and responsible bidder, Borden & Remington Corporation, and to authorize the Executive Director, on behalf of the Authority, to execute and deliver said purchase order contract in an amount not to exceed \$1,285,696.19 for a period of one year, from November 17, 2017 through November 16, 2018.

CONTRACT AMENDMENTS/CHANGE ORDERS

Alewife Brook Pump Station Rehabilitation: Barletta Engineering Corporation, Contract 6797, Change Order 2

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to approve Change Order 2 to increase the amount of Contract 6797 with Barletta Engineering Corporation, Alewife Brook Pump Station Rehabilitation, for a lump sum amount of \$690,000, and to extend the contract term by 180 calendar days to November 27, 2018; further, to authorize the Executive Director to approve

additional change orders as may be needed to Contract 6797 in amounts not to exceed the aggregate of \$250,000 and 180 days in accordance with the Management Policies and Procedures of the Board of Directors.

Wachusett Aqueduct Pumping Station Design, Construction Administration and Resident Inspection Services: Stantec Consulting Services, Inc., Contract 7156, Amendment 4

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to approve Amendment 4 to increase the amount of Contract 7156 with Stantec Consulting Services, Inc., Wachusett Aqueduct Pumping Station Design, Construction Administration and Resident Inspection Services, in the amount of \$711,617.02, with no change in the contract term.

Wachusett Aqueduct Pumping Station, BHD/BEC JV 2015, A Joint Venture: Contract 7157, Change Order 21

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to approve Change Order 21 to increase the amount of Contract 7157 with BHD/BEC JV 2015, A Joint Venture, Wachusett Aqueduct Pumping Station, for a lump sum amount of \$285,385, 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 amounts not to exceed the aggregate of \$250,000 in accordance with the Management Policies and Procedures of the Board of Directors.

EXECUTIVE SESSION

It was moved to enter executive session to discuss litigation.

Upon a motion duly made and seconded, it was, upon a roll call vote in which the members were recorded as follows:

Yes

No

Abstain

Blackmon
Cotter
Flanagan
Pappastergion
Peña
Vitale
Walsh
Wolowicz
Carroll

Voted to enter executive session for the purpose of discussing 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

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The meeting returned to open session at 1:25 p.m. and adjourned.