



MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard
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Boston, MA 02129

Frederick A. Laskey
Executive Director

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ADMINISTRATION, FINANCE & AUDIT COMMITTEE MEETING

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

to be held on

Wednesday, December 20, 2017

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

Time: *11:00 a.m.*

AGENDA

A. Information

- 1 Delegated Authority Report – November 2017
- 2 Update on Procurement Procedure for Contract 7581, John J. Carroll Water Treatment Plant – SCADA System Improvements
- 3 FY2018 Financial Update and Summary as of November 2017

B. Approvals

- 1 Transmittal of FY2019 Proposed Capital Improvement Program and FY2019-2023 Spending Cap to the MWRA Advisory Board
- 2 Approval of Seventy-Sixth Supplemental Resolution

C. Contract Awards

- 1 Financial and Swap Advisory Services: PFM Financial Advisors, LLC, Contract F247
- 2 Dental Insurance: Delta Dental of Massachusetts, Contract A613

D. Contract Amendments/Change Orders

- 1 Security Guard Services for Various MWRA Facilities: Universal Protection Service, LLC, d/b/a Allied Universal Security Services, Contract EXE-033, Amendment 2

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Administration, Finance and Audit Committee

November 15, 2017

A meeting of the Administration, Finance and Audit Committee was held on November 15, 2017 at the Authority headquarters in Charlestown. Chairman Vitale presided. Present from the Board were Ms. Wolowicz and Messrs. Foti, Pappastergion, Peña, and Walsh; Messrs. Flanagan, Carroll and Blackmon joined the meeting in progress. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Michele Gillen, Mike Hornbrook, Tom Durkin, Steve Perry, Cori Barrett, Andrew Hildick-Smith, Carolyn Francisco Murphy, Dave Coppes, Emily Dallman, Paul Whelan, and Bonnie Hale. The meeting was called to order at 10:10 a.m.

Information

Delegated Authority Report – October 2017

There was question and answer on some of the items in the report.

First Quarter FY18 Orange Notebook

Staff gave a presentation highlighting some of the water-related indicators. (Mr. Flanagan joined the meeting during the discussion.)

FY2018 Financial Update and Summary as of October 2017

Staff provided a brief summary of the October financials. (Messrs. Carroll and Blackmon joined the meeting during the discussion.)

New Technical Assistance Contracts for As-Needed Resident Engineering/Resident Inspection Services

Staff summarized the new procurement process for the above services, and there was general discussion and question and answer.

Procedure for Procuring Contract 7581 - Carroll Water Treatment Plant SCADA System Improvements

Staff summarized the proposed procedure for procuring the above contract, which focused on security concerns. There was detailed discussion and question and answer, and suggestions were made. There was no action taken.

Approvals

***Dental Insurance**

Staff described the request for authorization to seek prices for dental insurance raising the annual maximum benefit from \$1,250 to \$1,500 to mirror the benefit offered by the Commonwealth. There was general discussion, and the Committee recommended approval of the authorization (ref. agenda item B.1).

Contract Awards

***Insurance Consultant Services: Kevin F. Donoghue Insurance Advisors Inc. (d/b/a KFDA), Contract F246**

Staff summarized the procurement process and the services to be performed. There was general discussion and question and answer. The Committee recommended approval of the contract award (ref. agenda item C.1).

The meeting adjourned at 11:35 a.m.

* Approved as recommended at November 15, 2017 Board of Directors meeting.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: December 20, 2017
SUBJECT: Delegated Authority Report – November 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 November 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 NOVEMBER 1 - 30, 2017

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMEND/CO	COMPANY	FINANCIAL IMPACT
C-1.	11/02/17	INSTALLATION OF ENERGY-EFFICIENT EXPLOSION-PROOF LED INTERIOR AND SITE LIGHTING AT THE CLINTON WASTEWATER TREATMENT PLANT AWARD OF ENERGY EFFICIENT CONTRACT UNDER GREEN COMMUNITIES ACT TO NGRID PREQUALIFIED VENDOR FOR INSTALLATION OF ENERGY-EFFICIENT EXPLOSION-PROOF LED INTERIOR AND SITE LIGHTING AT THE CLINTON WASTEWATER TREATMENT PLANT FOR A TERM OF 150 CALENDAR DAYS. REBATE TOTALING \$10,405.25 WILL BE RECEIVED FROM NGRID UPON PROJECT COMPLETION, RESULTING IN A PAYBACK PERIOD OF 8.2 YEARS.	S572	AWARD	HORIZON SOLUTIONS, LLC	\$51,898.00
C-2.	11/02/17	NUT ISLAND HVAC INSULATION AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE NUT ISLAND HVAC INSULATION REMOVAL AND REPLACEMENT FOR A TERM OF 90 CALENDAR DAYS.	OP-344	AWARD	MARINE INSULATION SERVICES, INC.	\$82,058.00
C-3.	11/08/17	SPOT POND WATER STORAGE FACILITY DESIGN/BUILD PROJECT FINAL BALANCING CHANGE ORDER TO DECREASE THE FOLLOWING BID ITEMS TO REFLECT ACTUAL QUANTITIES USED: AUTHORITY REQUESTED DISINFECTION; FIRE DEPARTMENT BLAST MONITORING; WORK BY UTILITY COMPANIES; RESTORATION OF EASEMENT AREAS.	6457	16	WALSH CONSTRUCTION COMPANY	(\$993,760.22)
C-4.	11/08/17	REPLACEMENT OF EXTERIOR DOORS AT THE DEER ISLAND TREATMENT PLANT AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE REPLACEMENT OF EXTERIOR DOORS AND RELATED WORK AT THE DEER ISLAND TREATMENT PLANT FOR A TERM OF 540 CALENDAR DAYS.	S554	AWARD	G.V.W., INC.	\$759,840.00
C-5.	11/13/17	WACHUSETT AQUEDUCT PUMPING STATION CONSTRUCTION ADD RESTRAINING RODS BETWEEN FLEX JOINT AND FLANGED COUPLING TO PRESSURE TEST 84-INCH DIAMETER PIPE SO THAT IT CAN WITHSTAND DESIGN PRESSURE OF 75 PSI.	7157	24	BHD/BED, JOINT VENTURE 2015	\$183,838.00
C-6.	11/17/17	DENTAL INSURANCE EXTEND CONTRACT TERM FROM JANUARY 1, 2018 TO MARCH 31, 2018.	A591	4	DENTAL SERVICE OF MASSACHUSETTS, INC. D/B/A DELTA DENTAL OF MASSACHUSETTS	\$95,000.00
C-7.	11/22/17	NORTHERN INTERMEDIATE HIGH SECTION 110 - READING AND WOBURN ADJUST PRICE FOR CHANGE ORDER NUMBER 10 TO REFLECT ACTUAL TIME AND MATERIALS FURNISHED FOR REVISED LAYOUT ON OAK STREET; FURNISH AND INSTALL CONCRETE THRUST BLOCKS/STEEL ROD RESTRAINTS BEHIND 45-DEGREE HORIZONTAL AND VERTICAL BENDS OF 36-INCH WATER MAIN AT SIX LOCATIONS; REMOVE SECTION OF 36-INCH WATER MAIN WITH 45-DEGREE BEND FROM TRENCH, DISASSEMBLE 45-DEGREE BEND FROM PIPE, FURNISH AND INSTALL A 22-DEGREE BEND AND REINSTALL PIPE.	7471	13	ALBANESE D & S, INC.	\$75,133.78

PURCHASING DELEGATED AUTHORITY ITEMS NOVEMBER 1 - 30, 2017

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-1.	11/02/17	PURCHASE OF 350 ADOBE ACROBAT PROFESSIONAL 2017 LICENSES AWARD OF A PURCHASE ORDER UNDER STATE BLANKET CONTRACT ITS58 TO THE LOWEST RESPONSIVE BIDDER FOR 350 ADOBE ACROBAT PROFESSIONAL 2017 LICENSES THAT WILL BE SUPPORTED UNTIL JUNE 2022.	WRA-4434Q		PCMG, INC.	\$46,891.11
P-2.	11/02/17	PURCHASE OF TWENTY-ONE LOW VOLTAGE VARIABLE FREQUENCY DRIVES AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR TWENTY-ONE LOW VOLTAGE VARIABLE FREQUENCY DRIVES FOR THE DEER ISLAND TREATMENT PLANT.	WRA-4402		U.S. ELECTRICAL SERVICES, INC.	\$498,000.00
P-3	11/06/17	SYSTEM AUDITS OF THE CONTINUOUS EMISSIONS MONITORING SYSTEM AWARD OF A THREE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR SYSTEM AUDITS OF THE CONTINUOUS EMISSIONS MONITORING SYSTEM AT THE DEER ISLAND TREATMENT PLANT.	WRA-4439Q		MONTROSE AIR QUALITY SERVICES, LLC	\$29,850.00
P-4	11/06/17	ACTIVE DIRECTORY ENGINEERING IV SERVICES AWARD OF A PURCHASE ORDER UNDER STATE BLANKET CONTRACT ITS63 TO THE LOWEST RESPONSIVE BIDDER TO PROVIDE ACTIVE DIRECTORY ENGINEERING IV SERVICES FOR A PERIOD OF 1,040 BILLABLE HOURS.	WRA-4422Q		M&R CONSULTANTS CORPORATION	\$109,200.00
P-5	11/13/17	PURCHASE OF TWENTY-THREE MULTI-FUNCTION DEVICES AWARD OF A PURCHASE ORDER UNDER STATE BLANKET CONTRACT ITC66 TO THE LOWEST RESPONSIVE BIDDER FOR TWENTY-THREE MULTI-FUNCTION DEVICES FOR MULTIPLE FACILITIES.	WRA-4440Q		TOSHIBA BUSINESS SOLUTIONS, INC.	\$167,494.20
P-6	11/22/17	MOBILE MASSACHUSETTS STATE VEHICLE INSPECTIONS AWARD OF A ONE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR MOBILE MASSACHUSETTS STATE VEHICLE INSPECTIONS AT THE CHELSEA FACILITY.	WRA-4446Q		BAYSTATE MOBILE INSPECTIONS	\$27,500.00
P-7	11/22/17	PURCHASE OF ONE TRACKED COMPACT SKID LOADER AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR ONE TRACKED COMPACT SKID LOADER.	WRA-4427		SOUTHWORTH MILTON, INC.	\$61,900.00
P-8	11/22/17	PURCHASE OF TWO FREESTANDING MEZZANINE UNITS AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR TWO FREESTANDING MODULAR MEZZANINE UNITS FOR THE CHELSEA FACILITY.	WRA-4436Q		WARNER SPECIALTY PRODUCTS	\$38,870.00
P-9	11/22/17	PURCHASE OF PROPANE GAS AWARD OF A PURCHASE ORDER UNDER STATE BLANKET CONTRACT ENE46 FOR PROPANE GAS FOR WESTERN OPERATIONS FOR THE TIME PERIOD DECEMBER 1, 2017 THROUGH JULY 31, 2020.			OSTERMAN PROPANE, LLC	\$150,000.00
P-10	11/22/17	SUPPLY AND DELIVERY OF HYDROGEN PEROXIDE AMENDMENT NO. 1 TO PURCHASE ORDER FOR THE SUPPLY AND DELIVERY OF HYDROGEN PEROXIDE TO THE DEER ISLAND TREATMENT PLANT.	WRA-4147	1	US PEROXIDE, LLC	\$191,000.00
P-11	11/22/17	MAINTENANCE AND SUPPORT FOR MAXIMO SOFTWARE AWARD OF PURCHASE ORDER UNDER STATE BLANKET CONTRACT ITS55 FOR MAXIMO SOFTWARE MAINTENANCE AND SUPPORT FOR THE TIME PERIOD OF JANUARY 1, 2018 THROUGH DECEMBER 31, 2018.			IBM CORPORATION	\$270,095.39


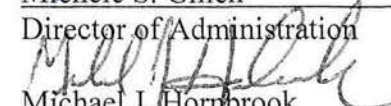
STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: December 20, 2017
SUBJECT: Update on Procurement Procedure for Contract 7581, John J. Carroll Water Treatment Plant – SCADA System Improvements

COMMITTEE: Administration, Finance & Audit

X INFORMATION
VOTE

Andrew Hildick-Smith, Director, Emergency
Planning and Preparation
David Coppes, Director, Waterworks
Carolyn Francisco Murphy, Director of Procurement
Preparer/Title


Michele S. Gillen
Director of Administration

Michael J. Hornbrook
Chief Operating Officer

An informational staff summary was presented at the November 15, 2017 Board Meeting, which outlined an alternative process that staff was considering for the design and programming services for the Carroll Water Treatment Plant programmable logic controllers and other Supervisory Control and Data Acquisition system components. Board members had a number of questions and concerns. Based on feedback from Board members, this staff summary describes a modified plan for this procurement.

RECOMMENDATION:

For information only.

DISCUSSION:

Contract 7581 will include design and programming services for replacing the original Carroll Water Treatment Plant programmable logic controllers (PLCs) and other Supervisory Control and Data Acquisition (SCADA) system components commissioned in 2005 as part of the original construction. These components are nearing the end of their useful life and/or are becoming obsolete. Staff have also identified some proposed modifications to optimize operation and maintenance of the SCADA system to increase the reliability of the Carroll Plant. The system consists of 34 PLCs with thousands of inputs and outputs, interconnected to each other through a fiber optic local area network and the Operations Control Center. Each redundant pair of PLCs controls different processes in the plant; they work in conjunction with each other and with other critical off-site PLCs to control the entire treatment plant and western water transmission and treatment system.

On November 15, 2017 staff presented an informational staff summary to the Board of Directors which outlined an alternative procurement process for consideration for this contract. The objective of the alternative process was, to the greatest extent possible, protection of security

sensitive SCADA information while maintaining a competitive procurement for the contract. The proposed process was qualifications based where the cost was not an element of competitive evaluation, but rather negotiated with the highest ranked firm.

Board members had a number of concerns and questions including what procurement practices are utilized by other utilities with security sensitive information. Staff made inquiries through the Water and Wastewater Chief Information Officer Forum and Water-Information Sharing and Analysis Center. To date, seventeen utilities responded to staff's request for information. Typically, all the responding utilities short list firms through a qualifications process and require the execution of a non-disclosure agreement before sharing the security sensitive information. Two utilities utilize a ShareFile to distribute the information and one added cyber security language to its contract. Additional measures by some utilities include requiring on-site review of sensitive information, performing background checks and releasing the security sensitive information to only the winning contractor. A 2008 publication by the American Water Works Association Research Foundation and the EPA entitled *Critical Information Policies for Water Utilities* identified the following procurement options for security sensitive information: non-disclosure agreements; background checks; controlled Web access; and provision for on-site review of the information.

Mindful of the Board's inquiries and comments regarding the proposed alternative process, staff have modified the proposed procurement process for Contract 7581, including added safeguards for the Authority's security sensitive information as set forth below.

Procurement Process

Staff now plan to procure Contract 7581 utilizing the Authority's two step Request for Qualifications (RFQ) followed by a Request for Proposals (RFP) process. In the first step, firms would submit a response to the RFQ focused on qualifications-based criteria (e.g., similar experience, past performance, qualifications of key personnel and capacity). The evaluation of the firms would include documented experience and procedures for handling and protecting security sensitive information. The Selection Committee would then evaluate the responses and short-list the firms to the three (or two with the Executive Director's approval) most qualified proposers, including with respect to handling and protecting security sensitive information.

The short-listed firms would be invited to submit a response to the RFP. In the RFP phase, firms will be evaluated on proposed cost, key personnel, technical approach, organization and management approach, and any proffered MBE and WBE participation. Certain information furnished by the Authority to the short-listed firms for preparation of the response to the RFP will be deemed security sensitive information. This information will be furnished to the short-listed firms via a password protected ShareFile. ShareFile is a secure content, file sharing platform that provides the necessary security controls for the Authority's security sensitive information. The short-listed firms will have to identify all individuals who are granted access to the ShareFile; and all such individuals must pass a comprehensive local, state and federal background check, and execute a non-disclosure/confidentiality agreement prior to gaining access to the ShareFile.

Documents on the ShareFile would be encrypted and view-only rights would be provided. Firms would have no ability to directly print, save or forward any documents from the ShareFile. A watermark distinctive to each firm will be applied to ShareFile documents to easily identify the source of any breaches. Access to the ShareFile will be terminated upon submission of the response to the RFP. Short-listed firms must agree to comply with the Authority's contractual requirements


with respect to security sensitive information during and after completion of the project if awarded the contract. Staff have utilized a ShareFile in past procurements as a means to disclose information to proposing firms. The process for Contract 7581 has been enhanced by an evaluation of a firm's procedures for handling and protecting security sensitive information in the RFQ stage, distinctive watermarking of the documents containing security sensitive information, background checks, a revised non-disclosure agreement and additional contractual requirements.

After proposals have been submitted, each Selection Committee member will review and score the proposals by assigning a percentage of available points for each criterion, including costs, and rank the firms by order of preference. A staff summary will ultimately be presented to the Board, which will include the details of the Selection Committee's evaluation and ranking and a recommendation and request for award. This procurement process comports with the Authority's policies and procedure while providing reasonable safeguards for the Authority's security sensitive information.



BUDGET/FISCAL IMPACT:

There are sufficient funds for this contract in the FY18 CIP.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: December 20, 2017
SUBJECT: FY18 Financial Update and Summary through November

COMMITTEE: Administration, Finance & Audit


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

INFORMATION

VOTE


Thomas J. Durkin
Director, Finance

RECOMMENDATION:

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

DISCUSSION:

Total year-to date variance for the FY18 CEB is \$12.1 million due to lower direct expenses of \$3.0 million, lower debt service of \$3.4 million, lower indirect expenses of \$503,000, and higher revenues of \$5.2 million.

Total year-to-date variance for the FY18 CIP is \$172,000 or 0.2%, over budget.

FY18 Current Expense Budget

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

- Net Lower Direct Expenses of \$3.0 million, or 3.3% under budget. Spending was lower for Wages & Salaries, Worker's Compensation, Utilities, Maintenance, Chemicals, Professional Services and Fringe Benefits. This is offset by higher spending on Other Services, Overtime, and Other Materials.
- Lower Debt Service of \$3.4 million, or 1.8%, due to favorable short-term interest rates.
- Lower Indirect Expenses of \$503,000, or 3.1%, due to lower Watershed reimbursements, Insurance costs and expenses for the existing HEEC cable.

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

	FY18 Budget YTD	FY18 Actual YTD	\$ Variance	% Variance
Direct Expenses	\$90.1	\$87.1	-\$3.0	-3.3%
Indirect Expenses	\$16.2	\$15.7	-\$0.5	-3.1%
Debt Service	\$188.0	\$184.6	-\$3.4	-1.8%
Total	\$294.3	\$287.4	-\$6.9	-2.3%

Totals may not add due to rounding

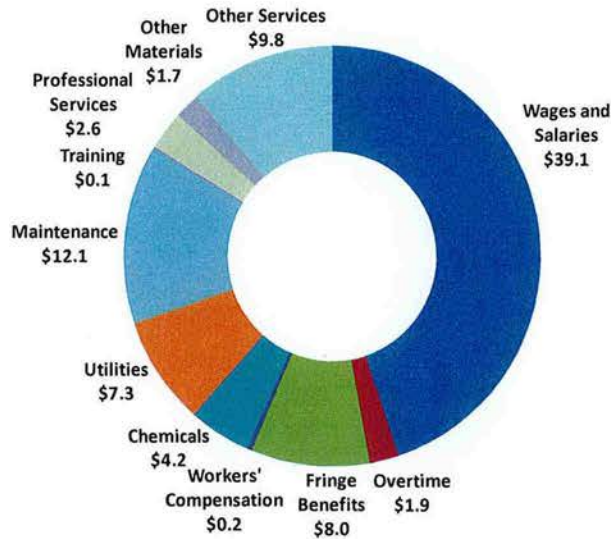
Year-to-date Revenues of \$320.8 million were \$5.2 million over budget reflecting a \$4.2 million receipt from the settlement between various State Attorneys General and Barclays PLC for attempting to manipulate the LIBOR market. LIBOR is a standard financial index used to set the cost of various variable-rate loans. Revenues were also over budget by \$456,000 for favorable returns on investment income, \$228,000 for the final payment of a class action lawsuit settlement for derivative agreements, \$241,000 for revenue attributable to renewable energy credits and energy rebates, and \$157,000 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

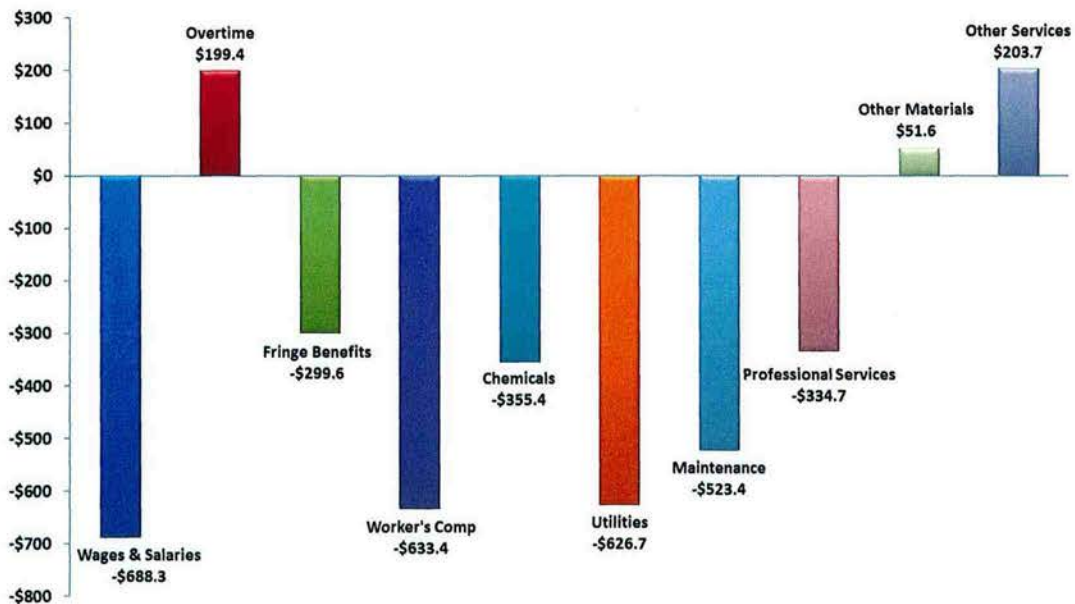
Year-to-date direct expenses totaled \$87.1 million, \$3.0 million, or 3.3%, less than budgeted.

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



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

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

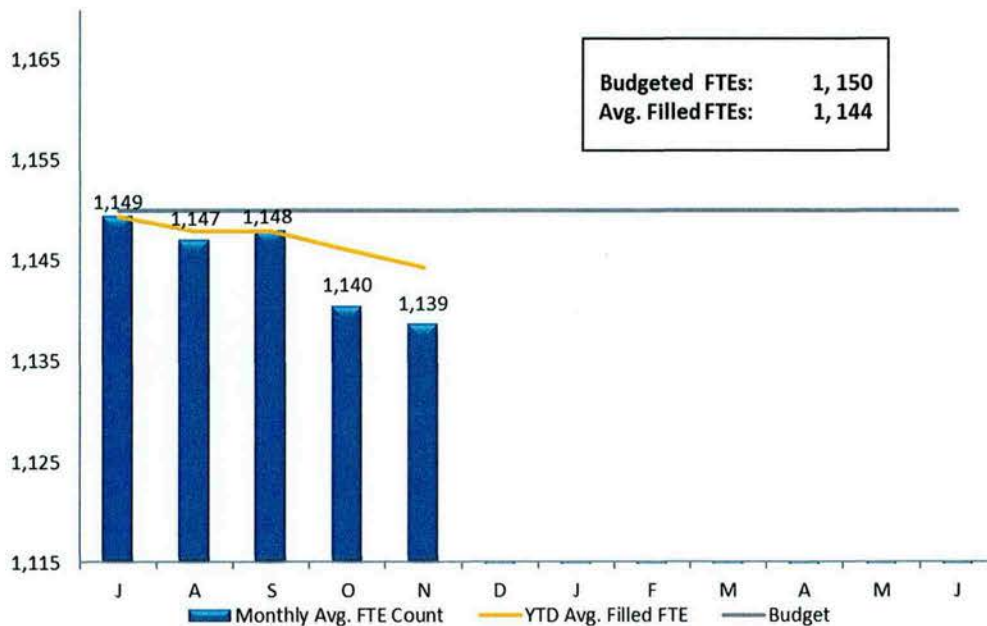


Wages and Salaries

Wages and Salaries are under budget by \$688,000. Regular Pay is under budget by \$652,000; however, if the impact of \$649,000 higher than budgeted “leave balance accruals” are netted out, the variance is \$1.3 million under budget. The “leave balance accruals” represent the value of the monthly change of accrued leave time for employees, which includes vacation, sick time, holiday pay and compensation time.

Year to date, there have been 6 fewer average FTEs (1,144 versus 1,150 budget), lower average new hire salaries versus retirees and the timing of backfilling vacant positions, which has contributed to Regular Pay being under budget.

FY18 MWRA Full Time Equivalent (FTE) Position Trend



Worker’s Compensation

Through November, Worker’s Compensation expenses were lower than budget by \$633,000, or 65.4%. Indemnity payments and reserves were lower than budget by \$436,000 year-to-date primarily as the result of the settlement of five claims, and the resolution of a number of other claims through return to work. Medical payments and reserves were lower than budget by \$172,000 for lower medical expenses and a reduction in medical reserves for the same claims. Expense payments and reserves were lower than budget by \$26,000 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.

Utilities

Utilities were under budget by \$627,000 or 7.9%, primarily due to lower electricity bills of \$381,000 due to favorable pricing for Field Operations facilities and the Deer Island Wastewater Treatment Plant and \$139,000 lower diesel expense in Field Operations.

Maintenance

Maintenance was under budget by \$523,000, or 4.2%. \$447,000 of the underspending is at Deer Island and \$195,000 in Field Operations. There were numerous components to the underspending for Maintenance year-to date, including timing of the HVAC upgrades to the Braintree/Weymouth Pump Station and Chelsea facility, timing of door replacement at Deer Island Treatment Plant; offset by overspending for timing of the Headworks HVAC duct cleaning contract, which is being done ahead of schedule.

Chemicals

Year-to-date, Chemicals were lower than budget by \$355,000 or 7.8%. The variance for Chemicals was the result of lower flows both at Deer Island and the Carroll Plant, 13% and 5% respectively, the quality of the influent at Deer Island and the water quality at the Carroll Plant. Underspending of \$190,000 for Soda Ash, \$154,000 for Sodium Hypochlorite, and \$151,000 for Activated Carbon is offset by overspending of \$295,000 for Hydrogen Peroxide. It is important to note that Chemical variances are also based on deliveries which in general reflect the usage patterns. However, the timing of deliveries is an important factor. For instance, the underspending for Activated Carbon is due to the timing of the change out of carbon beds at Deer Island later in the year than budgeted.

Professional Services

Professional Services were under budget by \$335,000, or 11.5%. Professional Services were underspent in MIS for timing of network application and design services, in the Law Division for outside legal fees for litigation and expert fees, and in the Finance Division due to timing of the need for services. 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 related to the security of the system.

Fringe Benefits

Fringe Benefit spending was lower than budgeted by \$300,000, or 3.6%, primarily for lower Health Insurance costs of \$229,000 due to fewer employees and retirees than budgeted participating in health insurance plans, and the shift from family to individual plans.

Other Services

Other Services spending was higher than budgeted by \$204,000, or 2.1%. There were numerous components to the overspending in Other Services, including Sludge Pelletization of \$201,000 due to higher year-to-date quantities related to struvite control during the cleaning of one digester.

Overtime

Overtime expenses were higher than budgeted by \$199,000 or 11.4%, mainly in Water Operations for maintenance and emergency leak repairs and Wastewater Operations for wet weather events. Field Operations performed off-hours maintenance work to alleviate project backlogs due to staff vacancies in Western water operations, replaced manhole covers and frames prior to a major repaving project, and hoisted a replacement HVAC unit at the Chelsea facility.

Other Materials

Other Materials were higher than budgeted by \$52,000 or 3.1%. A variety of items are over budget including computer hardware in MIS and lab and testing materials at Deer Island due to timing of purchases. There were various items under budget, including Vehicle Expenses due to lower than budgeted fuel prices.

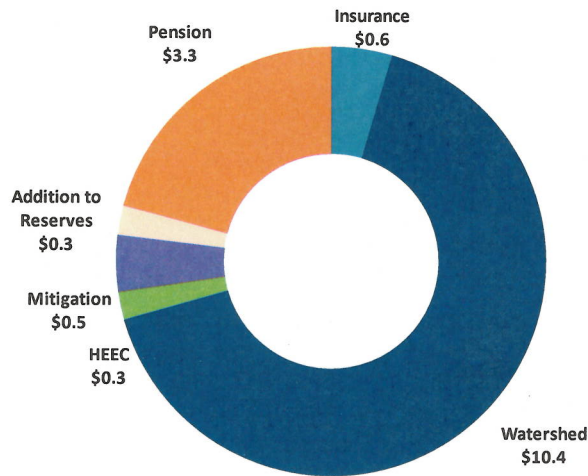
Training & Meetings

Training & Meetings expenses were slightly higher than budgeted by \$2,000 or 1.7%, essentially on budget.

Indirect Expenses

Year-to-date Indirect Expenses totaled \$15.7 million, \$503,000 or 3.1% 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 \$135,000 due to lower than budgeted claims of \$110,000 and lower than budgeted premiums of \$24,000; and lower HEEC charges than budgeted of \$73,000 for the existing cross-harbor cable.

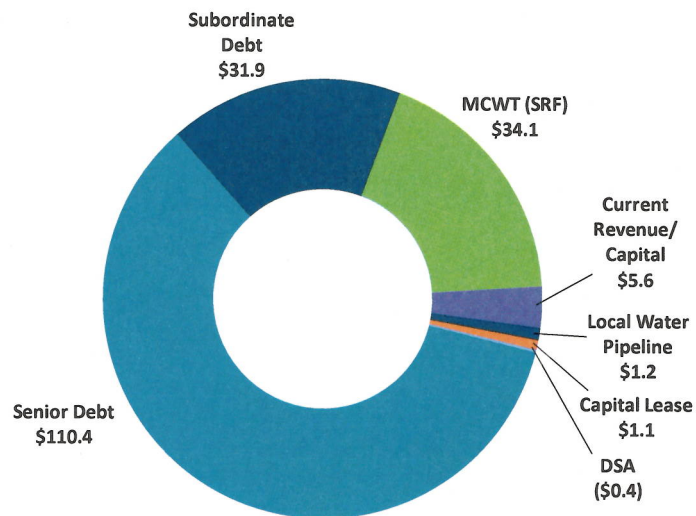
**FY18 Year-to-date Indirect Expenses-YTD
(in millions)**



Capital Financing

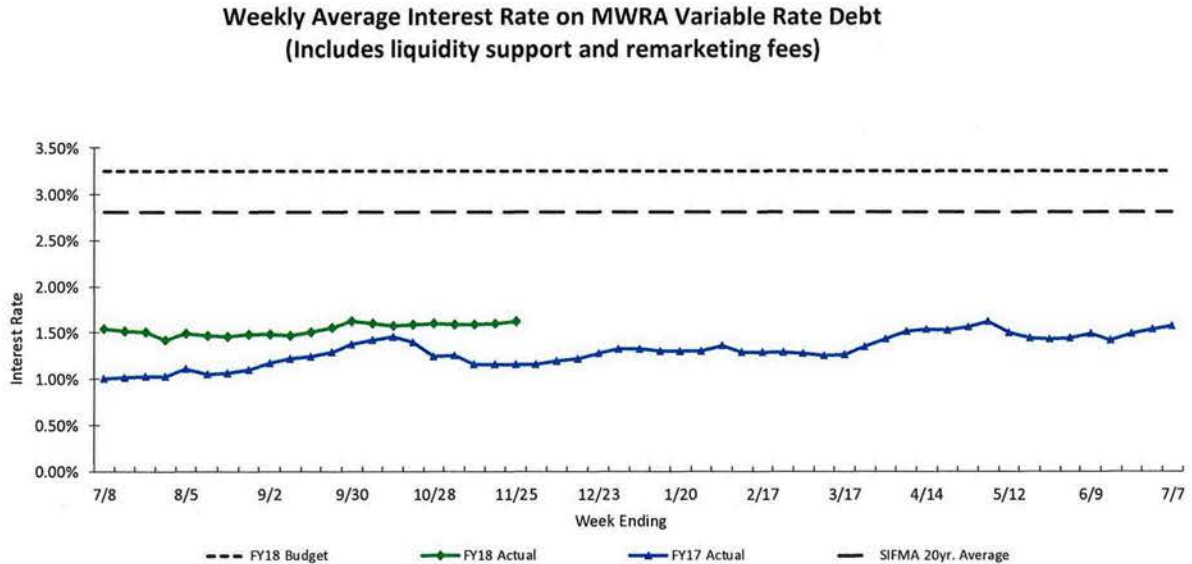
Capital Financing expenses include the principal and interest payment for fixed debt, the variable subordinate debt, the Massachusetts Clean Water Trust (SRF) obligation, the commercial paper program for the local water pipeline projects, current revenue for capital, and the Chelsea facility lease payment.

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



Year-to-date Capital Financing expenses for FY18 totaled \$185.0 million, which was \$3.4 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.



Revenue & Income

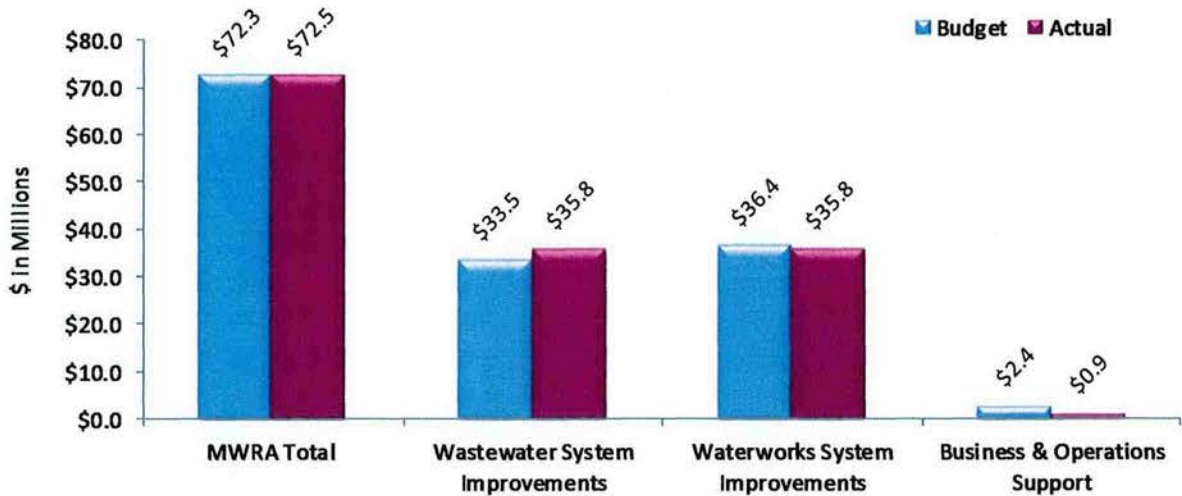
Year-to-date Revenues of \$320.8 million were \$5.2 million over budget reflecting a \$4.2 million receipt from the settlement between various State Attorneys General and Barclays PLC for attempting to manipulate the LIBOR market. LIBOR is a standard financial index used to set the cost of various variable-rate loans. Revenues were also over budget by \$456,000 for favorable returns on investment income, \$228,000 for the final payment of a class action lawsuit settlement for derivative agreements, \$241,000 for revenue attributable to renewable energy credits and energy rebates, and \$157,000 for disposal of surplus material.

FY18 Capital Improvement Program

Capital expenditures in Fiscal Year 2018 through November total \$72.5 million, \$172,000, or 0.2%, over budget.

After accounting for programs which are not directly under MWRA's control, most notably the Inflow and Infiltration (I/I) grant/loan program, the Local Water Pipeline loan program, and the community managed Combined Sewer Overflow (CSOs) projects, capital spending totaled \$57.7 million, \$313,000, or 0.5%, under budget.

**FY18 CIP Spending
Year-To-Date
November**



Overall overspending reflects the overspending of \$2.4 million in Wastewater Improvements, underspending of \$0.7 million in Waterworks Improvements, and \$1.6 million in Business and Operations Support.

FY18 Year-to-date Spending by Program:

\$ in Millions	Budget	Actuals	\$ Var.	% Var.
Wastewater System Improvements				
Interception & Pumping	16.7	16.1	(0.6)	-3.8%
Treatment	6.6	5.1	(1.6)	-23.4%
Residuals	0.0	0.1	0.1	N/A
CSO	1.5	1.3	(0.2)	-13.6%
Other	8.7	13.3	4.6	53.6%
Total Wastewater System Improvements	\$33.5	\$35.8	\$2.4	7.1%
Waterworks System Improvements				
Drinking Water Quality Improvements	1.3	1.7	0.4	31.6%
Transmission	12.8	13.3	0.4	3.3%
Distribution & Pumping	17.8	20.5	2.7	14.9%
Other	4.5	0.3	(4.2)	N/A
Total Waterworks System Improvements	\$36.4	\$35.8	(\$0.7)	-1.8%
Business & Operations Support	\$2.4	\$0.9	(\$1.6)	-63.8%
Total MWRA	\$72.3	\$72.5	\$0.2	0.2%

Totals may not add due to rounding

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

Other Wastewater: Net overspending of \$4.6 million

- \$4.6 million for Community Infiltration/Inflow (I/I) due to greater than anticipated requests for grants and loans.

Other Waterworks: Net underspending of \$4.2 million

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

Wastewater Treatment: Net underspending of \$1.6 million

- Clinton: \$0.3 million for Phosphorus Reduction Construction due to less than anticipated progress including preliminary testing delays.
- Deer Island: \$0.4 million for Digester Sludge Pump Phase 2, \$0.3 million for Power System Improvements, and \$0.1 million for North Main Pump Station and Winthrop Terminal Facility Butterfly Valve Replacements due to work scheduled for FY18 performed in FY17. Also, \$0.3 million for lead time for equipment for the Winthrop Terminal Facility VFD Replacement Construction and less than anticipated progress of \$0.2 million for the Clarifier Rehabilitation Phase 2 Design.
- The underspending was partially offset by overspending of \$0.2 million for the Personnel Dock Rehabilitation due to additional work required.

Water Distribution and Pumping: Net overspending of \$2.7 million

- \$4.9 million for Section 89/29 Redundancy Phase 1C Construction and \$0.9 million for SEH Redundancy Pipeline Section 111 Phase 1 Construction due to contractor progress. Also, \$0.2 million for Section 80 Replacement due to earlier construction.
- The overspending was partially offset by underspending of \$1.3 million for SEH Redundancy Pipeline Section 111 Phase 2, \$0.5 million for Chestnut Hill Gatehouse #1 Repairs, and \$0.1 million for Section 89/29 Redundancy Phase 2 due to later than budgeted notices-to-proceed, \$0.2 million for Section 89/29 Redundancy Phase 1B due to work scheduled for FY18 performed in FY17, and \$0.3 million Section 14 Water Pipe Relocation (Malden) due to delay in commencing pipe installation.

Interception & Pumping: Net underspending of \$0.6 million

- \$1.0 million for Alewife Brook Pumping Station Construction due to bypass pumping delays.
- This underspending was partially offset by overspending of \$0.3 million for Nut Island Odor Control & HVAC Improvements - Design/CA/REI, \$0.2 million on Study of Sections 4, 5, 6, 186, \$0.2 million for Prison Point Design/CA/REI due to consultant progress.

Waterworks Transmission: Net overspending of \$0.4 million

- \$0.7 million for Watershed Land due to timing of land purchases and \$0.3 million for Wachusett Aqueduct Pump Station Construction due to contractor progress.
- This overspending was partially offset by underspending of \$0.2 million for CVA Motorized Screen Replacement due to work scheduled for FY18 performed in FY17 and balancing credit change order pending, and \$0.1 million for work completed under budget for the Evaluation of Farm Pond Buildings and Waban Arches.

Drinking Water Quality Improvements: Net overspending of \$0.4 million

- \$0.4 million for contractor progress for the Marlborough Maintenance Facility.

Combined Sewer Overflow: Net underspending of \$0.2 million

- Underspending of \$0.2 million for Cambridge Sewer Separation Project due to updated final cost of restoration work.

Residuals: Net overspending of \$0.1 million

- \$0.1 million for timing of initial payments for sludge tank and silo coating and mechanical work.

Construction Fund Balance

The construction fund balance was \$60.4 million as of the end of November. Commercial Paper/Revolving Loan availability was \$172.0 million to fund construction projects.

Attachment 1 – Variance Summary November 2018

Attachment 2 – Current Expense Variance Explanations

Attachment 3 – Capital Improvement Program Variance Explanations

ATTACHMENT 1
FY18 Actuals vs. FY18 Budget

	November 2017 Year-to-Date					
	Period 5 YTD Budget	Period 5 YTD Actual	Period 5 YTD Variance	%	FY18 Approved	%
					Expended	
EXPENSES						
WAGES AND SALARIES	\$ 39,782,940	\$ 39,094,597	\$ (688,343)	-1.7%	\$ 104,286,370	37.5%
OVERTIME	1,748,327	1,947,766	199,439	11.4%	4,110,637	47.4%
FRINGE BENEFITS	8,307,621	8,008,015	(299,606)	-3.6%	20,997,975	38.1%
WORKERS' COMPENSATION	967,908	334,528	(633,380)	-65.4%	2,322,980	14.4%
CHEMICALS	4,540,982	4,185,609	(355,373)	-7.8%	9,836,933	42.5%
ENERGY AND UTILITIES	7,920,973	7,294,237	(626,736)	-7.9%	21,735,222	33.6%
MAINTENANCE	12,577,056	12,053,637	(523,419)	-4.2%	32,200,785	37.4%
TRAINING AND MEETINGS	125,284	127,359	2,075	1.7%	406,269	31.3%
PROFESSIONAL SERVICES	2,903,512	2,568,835	(334,677)	-11.5%	7,221,622	35.6%
OTHER MATERIALS	1,657,553	1,709,159	51,606	3.1%	6,692,660	25.5%
OTHER SERVICES	9,609,329	9,813,037	203,708	2.1%	22,764,526	43.1%
TOTAL DIRECT EXPENSES	\$ 90,141,485	\$ 87,136,779	\$ (3,004,706)	-3.3%	\$ 232,575,979	37.5%
INSURANCE	\$ 851,845	\$ 716,959	\$ (134,886)	-15.8%	\$ 2,013,452	35.6%
WATERSHED/PILOT	10,646,310	10,360,492	(285,818)	-2.7%	25,164,006	41.2%
BECo PAYMENT	405,073	331,844	(73,229)	-18.1%	957,445	34.7%
MITIGATION	675,633	666,300	(9,333)	-1.4%	1,596,950	41.7%
ADDITIONS TO RESERVES	347,396	347,396	-	0.0%	821,116	42.3%
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	\$ 16,203,626	\$ 15,700,360	\$ (503,266)	-3.1%	\$ 38,865,760	40.4%
STATE REVOLVING FUND	\$ 34,116,022	\$ 34,116,022	\$ -	0.0%	\$ 84,931,906	40.2%
SENIOR DEBT	110,448,575	110,448,575	-	0.0%	264,560,267	41.7%
CORD FUND	-	-	-	---	-	---
DEBT SERVICE ASSISTANCE	(391,580)	(391,580)	-	0.0%	(391,580)	100.0%
CURRENT REVENUE/CAPITAL	5,584,615	5,584,615	-	0.0%	13,200,000	42.3%
SUBORDINATE MWRA DEBT	35,250,191	35,250,191	-	0.0%	85,443,447	41.3%
LOCAL WATER PIPELINE CP	1,605,553	1,605,553	-	0.0%	3,794,944	42.3%
CAPITAL LEASE	1,361,064	1,361,064	-	0.0%	3,217,060	42.3%
DEBT PREPAYMENT	-	-	-	---	10,900,000	0.0%
VARIABLE DEBT	-	(3,399,231)	(3,399,231)	---	-	0.0%
HEEC CABLE CAPACITY RESERV	-	-	-	---	6,532,146	---
DEFEASANCE ACCOUNT	-	-	-	---	-	---
TOTAL DEBT SERVICE	\$ 187,974,441	\$ 184,575,210	\$ (3,399,231)	-1.8%	\$ 472,188,190	39.1%
TOTAL EXPENSES	\$ 294,319,552	\$ 287,412,349	\$ (6,907,202)	-2.3%	\$ 743,629,929	38.6%
REVENUE & INCOME						
RATE REVENUE	\$ 303,369,000	\$ 303,369,000	\$ -	0.0%	\$ 717,054,000	42.3%
OTHER USER CHARGES	4,155,001	4,105,532	(49,469)	-1.2%	9,011,070	45.6%
OTHER REVENUE	4,097,485	8,932,168	4,834,683	118.0%	7,359,078	121.4%
RATE STABILIZATION	-	-	-	---	-	---
INVESTMENT INCOME	3,950,593	4,406,998	456,405	11.6%	10,205,781	43.2%
TOTAL REVENUE & INCOME	\$ 315,572,079	\$ 320,813,698	\$ 5,241,618	1.7%	\$ 743,629,929	43.1%

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY18 Budget YTD November	FY18 Actuals YTD November	FY18 YTD Actual vs. FY18 Budget		Explanations
			\$	%	
Direct Expenses					
Wages & Salaries	39,782,940	39,094,597	(688,343)	-1.7%	Regular Pay is under budget by \$652,000, however if we net out the impact of \$649,000 higher than budgeted "leave balance accruals" the variance is \$1.3 million 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 \$1.3 million underspending is in part due to 6 fewer average FTE's (1,144 versus 1,150 budgeted), lower average new hire salaries replacing retirees and the timing of backfilling vacant positions.
Overtime	1,748,327	1,947,766	199,439	11.4%	Higher spending mainly in Water Operations of \$124,000 and Metro Maintenance of \$98,000, both for off-hours maintenance, and Wastewater Operations of \$48,000 for wet weather events. Some examples of off-hour maintenance work include off-hours work to alleviate a project backlog in western ops due to staff vacancies, replacement of manholes in a community prior to a major repaving job, and crane rigging to hoist replacement HVAC units into place at the Chelsea maintenance facility.
Fringe Benefits	8,307,621	8,008,015	(299,606)	-3.6%	Lower than budget mainly in Health Insurance of \$229,000, due to fewer than budgeted participants in health insurance plans, and the shift from family to individual plans; and lower Medicare payments of \$35,000.
Worker's Compensation	967,908	334,528	(633,380)	-65.4%	Underspending due to lower compensation payments of \$436,000, medical payments of \$172,000 and management costs of \$26,000. Compensation payments were lower due to a reductions of reserves primarily due to settlements of five claim and lower reserves for claims resolved through returns to work. Medical payments were lower due to adjustments to reserves for claims resolved through return to work. Management Costs were adjusted as well to reflect resolution of outstanding cases. It is important to note that spending on this line item can change significantly depending on future claims and severity of cases.

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY18 Budget YTD November	FY18 Actuals YTD November	FY18 YTD Actual vs. FY18 Budget		Explanations
			\$	%	
Chemicals	4,540,982	4,185,609	(355,373)	-7.8%	Underspending for Soda Ash of \$190,000 primarily at JCWTP; Sodium Hypochlorite of \$154,000 primarily at DITP; Activated Carbon of \$151,000 at DITP; Carbon Dioxide of \$55,000 at JCWTP; and Sodium Bisulfite primarily at DITP. This is offset by over spending on Hydrogen Peroxide of \$295,000 at DITP and on Ferric Chloride of \$42,000 also at DITP. The majority of underspending for Chemicals is the result of lower flows both at DITP and JCWTP, 13% and 5% respectively through November and the quality of the influent both at DITP and JCWTP. It is important to note that Chemicals variances are also based on deliveries which in general reflect the usage patterns. However, the timing of deliveries is an important factor. For instance, the underspending for Activated Carbon is due to the timing of the change out of carbon beds at DITP later in the year than budgeted.
Utilities	7,920,973	7,294,237	(626,736)	-7.9%	Underspending in Electricity of \$381,000 primarily in FOD due to favorable pricing (approx. 2¢ under budget per kwh) and DITP; Diesel Fuel of \$139,000 due to time of deliveries at Wastewater Ops facilities and JCWTP; and Water of \$77,000 primarily at JCWTP and DITP.
Maintenance	12,577,056	12,053,637	(523,419)	-4.2%	Materials were underspent by \$459,000 and Services were underspent by \$67,000. Underspending in HVAC Materials of \$607,000 in FOD for the timing of the B/W IPS and Chelsea HVAC upgrades and DITP for timing of purchases; Building & Grounds Services of \$370,000 for timing of door replacement contract at DITP, and for invasive control contract at various reservoirs; Specialized Equipment Services of \$132,000 in OEP, FOD & DLS; Building & Grounds Materials of \$62,000 for Metro Maintenance, Water Western Ops, and at the Chelsea Facility; Computer Materials of \$58,000 for an inventory issuance credit in MIS; Overspending in Plant & Machinery Services of \$238,000 mostly at DITP for Boiler/STG maintenance; HVAC Services of \$96,000 for timing of the Headworks duct cleaning contract and Western Ops HVAC services; Computer Software Licenses/Upgrades of \$78,000 in MIS; Pipeline Materials of \$56,000 in FOD; and Computer Services in MIS and SCADA Maintenance.

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY18 Budget YTD November	FY18 Actuals YTD November	FY18 YTD Actual vs. FY18 Budget		Explanations
			\$	%	
Training & Meetings	125,284	127,359	2,075	1.7%	
Professional Services	2,903,512	2,568,835	(334,677)	-11.5%	Other Professional Services was under spent \$215,000 primarily in MIS for timing of network, application and design services, Op Admin due to timing of Mystic River Modeling Project, and Treasury for timing of financial services; Legal Services was underspent \$127,000 in the Law Division for outside legal fees for litigation and in Human Resources; and Resident Inspection of \$47,000 related to lower spending on Diver Assisted Suction Harvesting (DASH) Quality Assurance/Quality Control diver associated with the invasive species control of the water reservoirs. This is offset by higher spending for Lab & Testing of \$63,000 in Dept. Lab Services for unplanned algae testing for Chestnut Hill Reservoir and ENQUAL for unplanned red tide study.
Other Materials	1,657,553	1,709,159	51,606	3.1%	Higher budgeted spending for Computer Hardware of \$106,000 in MIS due to timing of purchases; Postage of \$65,000 due to timing of filling postage meters in Admin, and Lab & Testing Supplies of \$58,000 primarily in Dept. of Lab Services. This is offset by lower spending for Health and Safety of \$58,000 primarily at DITP and Op Support; and Vehicle Expenses of \$57,000 due to lower prices for fuel than budgeted.
Other Services	9,609,329	9,813,037	203,708	2.1%	Higher than budgeted spending for Sludge Pelletization of \$201,000 due to higher year to date quantities related to Struvite control; Space Lease/Rentals of \$100,000 primarily due to Internal Audit's completing their annual audit of CY16 operating expenses and FY17 property taxes which determined we owe the landlord \$41,000 and increased the common area maintenance and property taxes portions of the monthly bill for FY18; and Telephone of \$47,000. This is offset by lower spending in Other Services of \$114,000 for a number of services, including timing of remediation projects managed by Real Property/Environmental Management and timing of Technical Assistance for Lead issues; and Police Details of \$28,000 primarily in Meter Maintenance and Water Pipeline Maintenance.
Total Direct Expenses	90,141,485	87,136,779	(3,004,706)	-3.3%	

**ATTACHMENT 2
Current Expense Variance Explanations**

Total MWRA	FY18 Budget YTD November	FY18 Actuals YTD November	FY18 YTD Actual vs. FY18 Budget		Explanations
			\$	%	
Indirect Expenses					
Insurance	851,845	716,959	(134,886)	-15.8%	Lower Claims than budgeted of \$110,000 and lower premiums of \$24,000.
Watershed/PILOT	10,646,310	10,360,492	(285,818)	-2.7%	Lower Watershed Reimbursement of \$286,000 due to over accrual at the end of FY17 as compared to the actual amount paid in the first quarter of FY18.
HEEC Payment	405,073	331,844	(73,229)	-18.1%	Lower than budgeted charges for O&M charges for existing HEEC cable.
Mitigation	675,632	666,300	(9,332)	-1.4%	Actual inflation rate was 2.08% vs. 2.5% used for the budget.
Addition to Reserves	347,396	347,396	-	0.0%	
Pension Expense	3,277,369	3,277,369	-	0.0%	
Post Employee Benefits	-	-	-		
Total Indirect Expenses	16,203,625	15,700,360	(503,265)	-3.1%	
Debt Service					
Debt Service	188,366,020	184,966,789	(3,399,231)	-1.8%	\$3.4 million for lower variable rate than budgeted.
Debt Service Assistance	(391,580)	(391,580)	-	0.0%	
Total Debt Service Expenses	187,974,440	184,575,209	(3,399,231)	-1.8%	
Total Expenses					
Total Expenses	294,319,550	287,412,348	(6,907,202)	-2.3%	
Revenue & Income					
Rate Revenue	303,369,000	303,369,000	-	0.0%	
Other User Charges	4,155,001	4,105,532	(49,469)	-1.2%	
Other Revenue	4,097,485	8,932,168	4,834,683	118.0%	\$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; \$241,000 for revenue attributable to renewable energy credits and energy rebates; and \$157,000 for disposal of surplus material.
Rate Stabilization	-	-	-		
Investment Income	3,950,593	4,406,998	456,405	11.6%	Investment Income is over budget as result of higher short term rates (1.30% vs. 1.05% budget)
Total Revenue	315,572,079	320,813,698	5,241,619	1.7%	
Net Revenue in Excess of Expenses	21,252,529	33,401,350	12,148,821		

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

	FY18 Budget YTD November	FY18 Actuals YTD November	YTD Actuals vs. Budget		Explanations
			\$	%	
Wastewater					
Interception & Pumping (I&P)	\$16,703	\$16,063	(\$640)	-3.8%	<u>Underspending</u> Alewife Brook Pump Station Rehab - Construction: \$1.0M (testing of dry and wet weather bypass pumps delayed) Other smaller projects totaling \$177k. <u>Offset Overspending</u> Nut Island Odor Control & HVAC Improvements - Design/CA/REI: \$319k, Sections 4, 5, 6, 186 - Study: \$227k, and Prison Point Rehab - Design/CA/RI: \$179k (all due to consultant progress)
Treatment	\$6,636	\$5,082	(\$1,554)	-23.4%	<u>Underspending</u> Digested Sludge Pump Replacement - Phase 2: \$396k and Power System Improvements - Construction: \$288k (for work scheduled for FY18 performed in FY17) WTF VFD Replacement - Construction: \$321k (due to lead times on equipment) Clinton Wastewater Treatment Plant Phosphorus Reduction - Construction: \$296k (up to a six-month time extension due to delays including preliminary testing) Clarifier Rehab Phase 2 - Design: \$185k (delayed pending staff review and comment on 60% design) Other smaller projects totaling \$224k <u>Offset Overspending</u> Personnel Dock Rehab: \$156k (additional rehab work required)
Residuals	\$0	\$124	\$124	-	Sludge Tank & Silo Coating: \$97k (due to timing of initial payments)
CSO	\$1,457	\$1,259	(\$198)	-13.6%	<u>Underspending</u> Cambridge Sewer Separation: \$198k (pending final cost reconciliation)
Other Wastewater	\$8,672	\$13,320	\$4,648	53.6%	<u>Overspending</u> I/I Local Financial Assistance: \$4.6M (greater than budgeted requests for grants and loans)
Total Wastewater	\$33,468	\$35,848	\$2,380	7.1%	


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

	FY18 Budget YTD November	FY18 Actuals YTD November	YTD Actuals vs. Budget		Explanations
			\$	%	
Waterworks					
Drinking Water Quality Improvements	\$1,311	\$1,726	\$415	31.6%	<u>Overspending</u> CP7 Existing Facilities: \$403k (contractor progress on the Marlborough Maintenance Facility)
Transmission	\$12,830	\$13,253	\$423	3.3%	<u>Overspending</u> Watershed Land Acquisition: \$666k (timing of land purchases) Wachusett Aqueduct Pump Station - Design/ESDC and Construction: \$277k (due to project progress) <u>Offset Underspending</u> CVA Motorized Screens Replacement - Construction: \$217k (work scheduled for FY18 performed in FY17) Evaluation of Farm Pond Buildings - Waban Arches: \$122k (project is substantially complete and will be less than budgeted) Comm. Ave. Pump Station Improvements - Design/CA/RI: \$96k (Preliminary Design ran 11 weeks behind schedule. Recovery schedule established to catch up during Final Design phase) Other smaller projects totaling \$85k
Distribution & Pumping	\$17,840	\$20,502	\$2,662	14.9%	<u>Overspending</u> NIH Section 89/29 Redundancy Phase 1C: \$4.8M, SEH Redundancy Pipeline Section 111 Phase 1 - Construction: \$883k, and Section 80 Replacement - Construction: \$209k (all due to project progress) <u>Offset Underspending</u> SEH Redundancy Pipeline Section 111 Construction 2: \$1.3M, Chestnut Hill Gatehouse No. 1 Repair - Construction: \$500k, and Sections 89 & 29 Redundancy - Construction Phase 2: \$114k (all due to delayed notices-to-proceed) NIH Section 89/29 Redundancy Phase 1B Construction: \$233k (work scheduled for FY18 performed in FY17) NIH Redundancy & Storage Easements: \$500k (timing of payment for the meter vault based on MOA with Town of Stoneham) Section 14 Water Pipe Relocation (Malden): \$313k (delay in commencing pipe installation) CP3, Sections 23, 24, 47 Rehab - Final Design/CA/RI: \$81k (delay due to coordination of field work to determine pipe condition and establish test pits) Other smaller projects totaling \$279k

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

	FY18 Budget YTD November	FY18 Actuals YTD November	YTD Actuals vs. Budget		Explanations
			\$	%	
Other Waterworks	\$4,456	\$305	(\$4,151)	-93.2%	Underspending Local Water System Assistance Program: \$3.9M (less than budgeted community requests for Phase 3 loans) Quabbin Power, Communication & Security - Construction: \$122k (partially due to reimbursement from DCR Office of Watershed Management for work at boat cove)
Total Waterworks	\$36,437	\$35,786	(\$651)	-1.8%	
Business & Operations Support					
Total Business & Operations Support	\$2,442	\$885	(\$1,558)	-63.8%	Underspending Security Equipment: \$680k (delay in implementing equipment initiatives) FY14-18 Vehicle Purchases: \$332k (timing of vehicle purchases) MIS Projects: \$249k (timing of IT Strategic Plan implementation) Fish Hatchery Pipeline Hydro: \$130k (timing of final work. Project is substantially complete) Other smaller projects totaling \$167k
Total MWRA	\$72,348	\$72,519	\$172	0.2%	

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: December 20, 2017
SUBJECT: Transmittal of the FY19 Proposed Capital Improvement Program and Proposed FY19-23 Spending Cap to the MWRA Advisory Board

COMMITTEE: Administration, Finance & Audit

VOTE

INFORMATION


Kathy Soni, Budget Director


Louise Miller, Budget Manager

Preparer/Title


Thomas J. Durkin

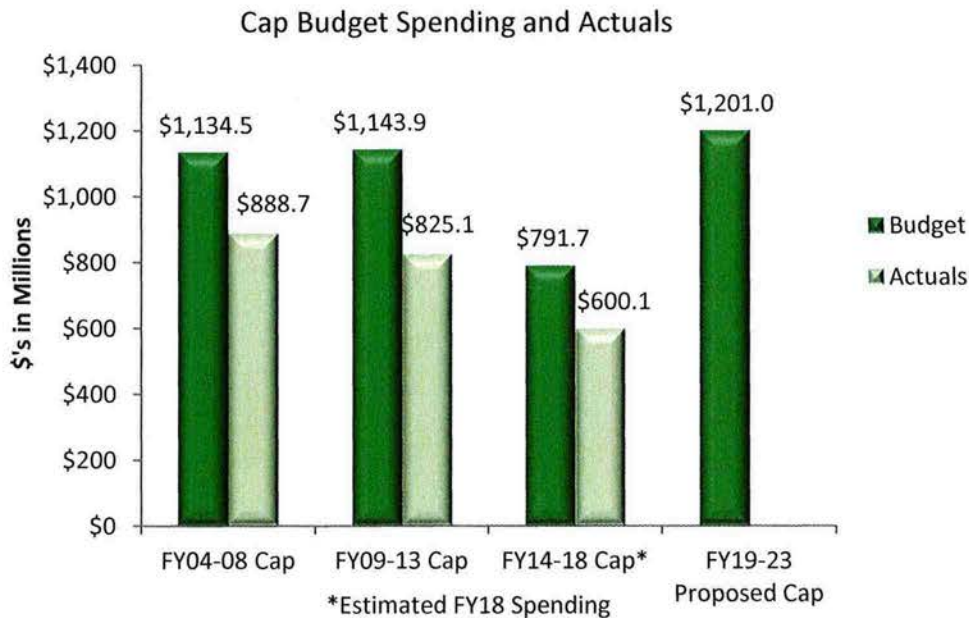
Director, Finance

RECOMMENDATION:

To approve the transmittal of the FY19 Proposed Capital Improvement Program and the Proposed FY19-23 Cap spending to the MWRA Advisory Board for its 60-day review and comment period.

DISCUSSION:

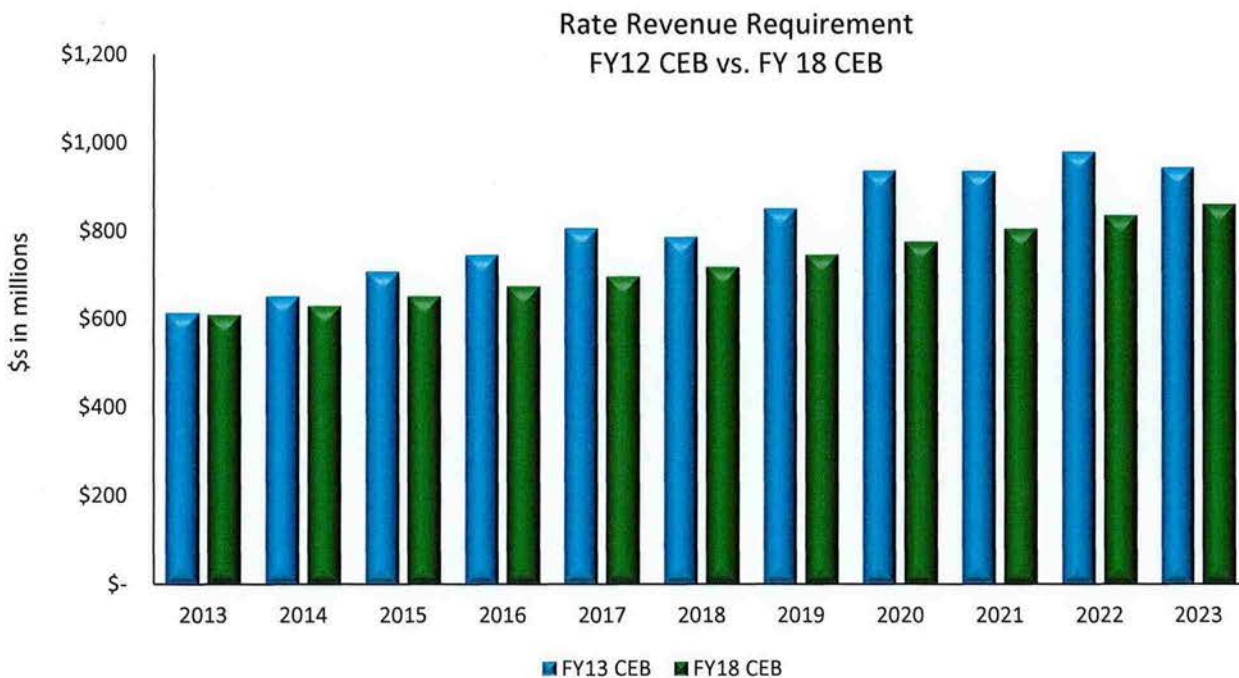
The concept of a five-year spending Cap was first introduced at the Advisory Board's recommendation in 2003 for the FY04-08 period. The Cap represents targeted spending levels to ensure adequate capital program funding and to serve as a guide for long-term planning estimates and community assessments. The graph below describes the history of the past three five-year caps and the Proposed FY19-23 Cap, both in terms of the Cap levels and actual spending.



The current Cap (FY14-18) was significantly less than the prior two Caps for a variety of reasons: to meet the Authority's goal of reducing outstanding debt, the largest driver of assessment increases, to recognize the nearing of the CSO program completion, to address the economic challenges facing our communities and ratepayers, and to satisfy the Advisory Board recommendation of less than \$800 million spending for the FY14-18 Cap period.

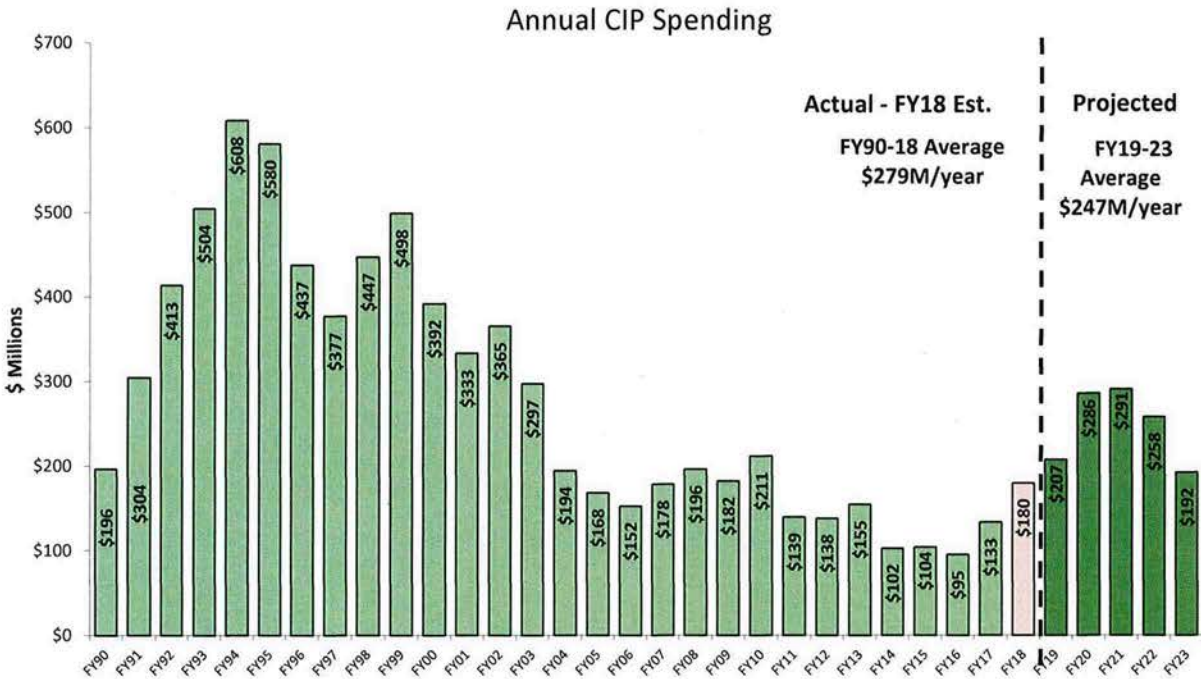
It is important to note that the spending on capital programs is largely determined by the nature, magnitude, and number of upcoming projects. In the prior five-year Caps, specifically FY04-08 and FY09-13, the majority of spending was driven by court-mandated projects and building new facilities. Based on the FY18 approved budget, the spending projection for the FY19-23 period was \$1.35 billion, which was already built into the long-term planning estimates.

Today, the Authority is positioned much better than a few years ago to reinvest in rehabilitation and replacement of aging facilities, as result of conservative fiscal management which includes judicious control of expenses, and that MWRA has implemented the practice of defeasances. The debt service associated with the reduction in total bonded indebtedness has contributed to the majority of the \$804.0 million or 9.1% reduction in the Rate Revenue Requirement based on the FY18 budget versus the projections in FY12.



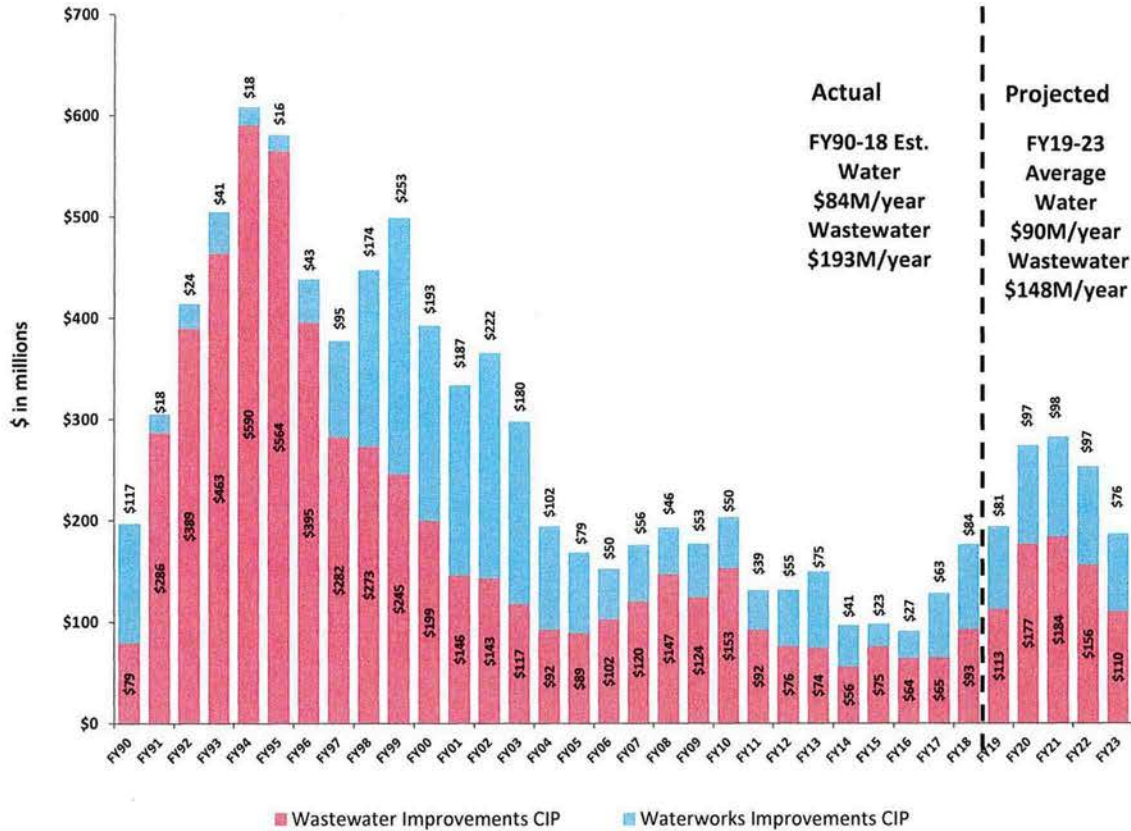
During the FY14-18 Cap, the Authority reached substantial completion on its court-mandated CSO Control Plan at an approximate total cost of \$910.0 million. The Authority's main focus going forward is asset protection and water system redundancy. The FY19 Proposed CIP includes approximately \$1.0 billion in future expenditures for asset protection and continues to fund the critical redundancy for the Metropolitan Tunnels System at approximately \$1.4 billion over a seventeen-year period. However, the FY19-23 period includes only \$17.0 million related to the tunnels.

The chart below captures the historical CIP spending through FY17 and projects spending through FY23 based on the FY19 Proposed CIP. Average annual CIP spending through FY18 was \$279 million. Average annual CIP spending for the proposed FY19-23 Cap is projected to be \$247 million.



The following chart shows the historical CIP spending from FY90 through FY17 by utility with projections through FY23. Average annual CIP spending through FY18 was \$84 million for Waterworks and \$193 million for Wastewater. Average annual CIP spending for the proposed FY19-23 Cap is projected to be \$90 million for Waterworks and \$148 million for Wastewater.

Annual CIP Spending by Utility



Actual
 FY90-18 Est.
 Water
 \$84M/year
 Wastewater
 \$193M/year

Projected
 FY19-23
 Average
 Water
 \$90M/year
 Wastewater
 \$148M/year

The spending projection set forth here includes updates to the approved FY18 CIP with the latest cost estimates, revised schedules, and new projects.

The FY19 Proposed CIP reaffirms MWRA’s commitment to the community financial assistance programs on both the water and wastewater side and includes the addition of Phases 11 and 12 of the Infiltration/Inflow (I/I) Program with funding of \$120.0 million.

FY19-23 Five-Year Spending Cap

Spending during the FY19-23 timeframe is planned to be \$1.2 billion, including local community spending of \$111.8 million for the I/I loan and grant program and \$52.3 for the water pipeline loan program.

Annual cash flows for the proposed Cap period are shown below in millions:

FY19 Proposed		FY19	FY20	FY21	FY22	FY23	Total FY19-23
	Projected Expenditures	\$207.2	\$285.8	\$290.8	\$258.0	\$192.3	\$1,234.1
	I/I Program	(14.0)	(23.2)	(27.2)	(22.4)	(25.0)	(111.8)
	Water Loan Program	(13.3)	(14.0)	(10.7)	(8.7)	(5.5)	(52.3)
	MWRA Spending	179.9	248.6	252.9	226.9	161.8	\$1,070.1
	Contingency	12.5	17.2	17.5	15.9	11.3	74.2
	Inflation on Unawarded Construction	0.0	8.2	15.1	18.9	15.7	58.0
	Chicopee Valley Aqueduct Projects	0.0	0.0	0.0	(0.3)	(1.0)	(1.3)
FY19 Proposed FY19-23 Spending	\$192.4	\$274.0	\$285.4	\$261.4	\$187.7	\$1,201.0	

The format of the Cap table has changed to account separately for MWRA spending, which excludes the local I/I grant and loan program and the local water pipeline loan spending which are both outside of MWRA's control. As in past Caps, contingency for each fiscal year is incorporated into the CIP to fund the uncertainties inherent to construction. The contingency budget is calculated as a percentage of budgeted expenditure outlays. Specifically, contingency is 7% for non-tunnel projects and 15% for tunnel projects. Inflation is added for unawarded construction contracts. Finally, the Cap excludes Chicopee Valley Aqueduct system projects.

Yearly Projected Expenditures for the Proposed FY19-23 Cap period by program are shown below in millions:

	FY19	FY20	FY21	FY22	FY23	Total FY19-23
Wastewater System Improvements	\$112.7	\$176.6	\$183.9	\$156.1	\$110.1	\$739.5
Interception & Pumping	47.1	64.5	61.6	41.1	26.6	240.9
Treatment	46.7	82.9	91.8	91.7	57.4	370.4
Residuals	4.0	3.1	0.8	1.0	1.1	10.0
CSO	0.9	2.8	2.6	-	-	6.3
Other Wastewater	14.0	23.2	27.2	22.4	25.0	111.8
Waterworks System Improvements	\$81.2	\$97.2	\$98.3	\$96.7	\$76.5	\$449.8
Drinking Water Quality Improvements	1.7	1.6	2.8	2.2	0.5	8.9
Transmission	8.3	7.3	7.9	6.6	9.2	39.3
Distribution & Pumping	49.4	68.4	66.8	67.3	57.5	309.4
Other Waterworks	21.8	19.8	20.7	20.6	9.3	92.3
Business & Operations Support	13.3	12.0	8.6	5.2	5.7	44.9
Total MWRA	\$207.2	\$285.8	\$290.8	\$258.0	\$192.3	\$1,234.1

It is important to emphasize that the majority of spending within the Wastewater and Waterworks programs is concentrated in several larger projects with significant spending in the FY19-23 timeframe. Project contracts with expenditures greater than \$15 million for the FY19-23 Cap total \$733.7 million, including local community assistance programs, accounting for nearly 60% of spending.

Project	Contract	Projected FY19-23 Expenditures \$s in millions
206 DI Treatment Plant Asset Protection	Clarifier Rehab Phase 2 - Construction	\$129.9
765 Local Water Pipeline Improvement Loan Program	LWSAP Phase 3 Distributions	90.0
765 Local Water Pipeline Improvement Loan Program	LWSAP Phase 2 Distributions	63.5
145 Facility Asset Protection	Chelsea Creek Headworks Upgrades - Construction	42.7
206 DI Treatment Plant Asset Protection	HVAC Equipment Replacement - Construction	38.8
132 Corrosion & Odor Control	NI Odor Control HVAC Improvement - Construction Phase 2	38.5
145 Facility Asset Protection	Prison Point Rehab - Construction	34.1
128 I/I Local Financial Assistance	Phase 10 Grants	32.9
128 I/I Local Financial Assistance	Phase 11 Grants	28.5
723 Northern Low Service Rehabilitation Section 8	Sec 50 & 57 Water & 21/20/19 Sewer Rehab - Construction	25.5
765 Local Water Pipeline Improvement Loan Program	Lead Service Line Replacement Loans	25.0
128 I/I Local Financial Assistance	Phase 9 Grants	22.0
128 I/I Local Financial Assistance	Phase 12 Grants	21.0
206 DI Treatment Plant Asset Protection	Fire Alarm System Replacement - Construction	20.0
628 Metro Redundancy Interim Improvement	WASM 3 - Construction 1	19.8
206 DI Treatment Plant Asset Protection	SSPS VFD Replace Construction	19.6
206 DI Treatment Plant Asset Protection	Gravity Thickener Rehab	18.0
727 Southern Extra High Redundancy & Storage	Redundancy Pipeline Sect 111 - Construction 3	17.3
722 NIH Redundancy & Storage	Section 89 & 29 Replacement - Construction	16.0
722 NIH Redundancy & Storage	Section 89 & 29 Redundancy - Construction Phase 2	15.3
628 Metro Redundancy Interim Improvement	WASM/Spot Pond Supply Mains West PRV - Construction	15.2
	Total Contracts > \$15 million	\$733.7
	% of FY19-23 Spending	59.4%
	Excluding Community Loan Programs	\$450.8
	% of FY19-23 Spending	36.5%
	Total FY19-23 Spending	\$1,234.1

Asset Protection accounts for the largest share of capital expenditures for the FY19-23 period. The FY19 Proposed CIP includes \$891.8 million for asset protection initiatives, representing 72.3% of total MWRA spending in this timeframe. Wastewater and Waterworks Asset Protection are \$728 million and \$153 million, respectively. The Deer Island Treatment Plant Asset Protection accounts for over \$366 million in spending. Spending for water system redundancy projects totals \$229.5 million in the same FY19-23 period, accounting for 18.6% of total spending.

Changing nature of the CIP by Category
(\$s in millions)

Project Category	FY14-18	FY19-23	FY24-28
Asset Protection	\$312.0	\$891.8	\$789.0
Carroll WTP	11.8	3.3	9.3
Water Redundancy	174.6	229.5	505.5
CSO	66.1	6.3	0.0
Other	49.1	103.2	-145.6
Total	\$613.6	\$1,234.1	\$1,158.2
Asset Protection	50.8%	72.3%	68.1%
Carroll WTP	1.9%	0.3%	0.8%
Water Redundancy	28.5%	18.6%	43.6%
CSO	10.8%	0.5%	0.0%
Other	8.0%	8.4%	-12.6%
Total	100.0%	100.0%	100.0%

FY19 New Projects

The FY19 Proposed CIP adds \$234.7 million in new projects of which Wastewater projects added total \$105 million while Waterworks projects total \$125.2 million.

(\$s in millions)

Division	Total Contract Amount	FY19-23 Spending
Wastewater	\$105.0	\$77.0
Waterworks	\$125.2	\$27.7
Business and Ops Support	\$4.5	\$4.5
Total New Projects	\$234.7	\$109.2

The following table shows the new projects added by the major programs:

(\$s in millions)

Project	Total Contract Amount	FY19-23 Spending
Deer Island Asset Protection	\$15.0	\$13.3
I/I Local Financial Assistance Program	\$90.0	\$63.7
Carroll Water Treatment Plant Asset Protection	\$38.3	\$2.3
Dam Projects	\$1.8	\$1.8
Sudbury/Weston Aqueduct Repairs	\$3.9	\$0.0
Watershed Land	\$5.0	\$5.0
Cathodic Protection	\$62.2	\$18.1
NHS Revere & Malden Pipeline Improvements	\$12.9	\$0.0
Waterworks Facility Asset Protection	\$0.6	\$0.0
Distribution System Facilities Mapping	\$0.5	\$0.5
Capital Maintenance Planning & Support	\$4.5	\$4.5
Total New Projects	\$234.7	\$109.2

New projects with anticipated contract amounts of \$10 million or more for Wastewater are:

Infiltration/Inflow Local Financial Assistance - Phases 11 & 12 - \$120 million (\$60 million each new phase - \$90 million of expenditures net of repayments) for rehabilitation of local sewer collection systems.

Deer Island Wastewater Treatment Plant - Hydroturbine Replacements - \$12.0 million to replace the two 1.1 megawatt hydroturbine generators (HTGs) at Deer Island. Electricity is generated using the gravitational force of plant effluent as it drops down the outfall shaft from the disinfection basins. Effluent flows into the intake channel beneath each HTG by opening computer-operated wicket gates. The hydroturbines came on line in July 2001. Because of the harsh environment at Deer Island, the equipment has reached the end of its useful life. The average savings generated by the hydroturbines is approximately \$458,000 per year.

New projects with anticipated contract amounts of \$10 million or more for Waterworks are:

Cathodic Protection (Metropolitan System) - \$57.0 million to replace the existing cathodic protection systems in order to maintain pipe and steel storage tank integrity.

Carroll Water Treatment Plant Ozone Generator Replacement - \$20.0 million to replace the ozone generators, which are currently scheduled to be rebuilt in 2022 and replaced by 2030.

Sections 13 & 48 Rehabilitation - \$12.9 million rehabilitation of 7,300 linear feet of Section 13 (36-inch cast-iron) and 7,300 linear feet of Section 48 (38-inch diameter riveted steel) in Stoneham, Malden and Melrose from the Gate House at Fells Reservoir to Pleasant Street in Malden. This project will improve hydraulics and water quality. Malden meters 16 and 187 and Medford meters 65 and 159 are connected to the distribution system via Sections 13 and 48. These four meters supply areas of the two communities at a generally higher elevation than the remaining community meters. Sections 13 and 48 are unlined cast-iron and steel water mains, respectively. Portions of these mains were disconnected from the Fells Reservoir in 1988 due to hydraulic and water quality problems, and to meet the Safe Drinking Water Act requirements.

Carroll Water Treatment Plant Ultraviolet (UV) Reactor Replacement - \$10.0 million for replacement of the UV reactors which will likely be required by 2034.

A complete list of new projects with cash flows and descriptions is attached as Attachment A.

FY19 Spending

The FY19 Proposed CIP forecasts \$207.2 million spending for FY19, of which \$112.7 million supports Wastewater System Improvements, \$81.2 million supports Waterworks System Improvements, and \$13.3 million is for Business and Operations Support. Included in the \$207.2 million are net expenditures of \$27.3 million for community assistance programs, \$14 million for local I/I program and \$13.3 million for local water pipeline program.

Project	Contract	Projected FY19 Expenditures \$s in millions
145 Facility Asset Protection	Chelsea Creek Headworks Upgrades - Construction	\$25.8
765 Local Water Pipeline Improvement Loan Program	LWSAP Phase 2 Distributions	20.3
206 DI Treatment Plant Asset Protection	Clarifier Rehab Phase 2 - Construction	16.2
722 NIH Redundancy & Storage	Section 89 & 29 Redundancy Construction Phase 2	11.0
765 Local Water Pipeline Improvement Loan Program	LWSAP Phase 3 Distributions	10.0
727 Southern Extra High Redundancy & Storage	Redundancy Pipeline Sect 111 - Construction 2	8.4
206 DI Treatment Plant Asset Protection	HVAC Equipment Replacement - Construction	7.8
128 I/I Local Financial Assistance	Phase 9 Grants	7.5
727 Southern Extra High Redundancy & Storage	Redundancy Pipeline Sect 111 - Construction 3	7.1
132 Corrosion & Odor Control	NI Odor Control HVAC Improvement - Construction 2	6.5
766 Waterworks Facility Asset Protection	Steel Tank Painting Deer Island, Bellevue 2 & Turkey Hill	5.5
765 Local Water Pipeline Improvement Loan Program	Lead Service Line Replacement Loans	5.0
	Total Contracts > \$5.0 million	\$131.1
	% of FY19 Spending	63.3%
	Excluding Community Loan Programs	\$88.3
	% of FY19 Spending	42.6%
	Total projected FY19 Spending	\$207.2

Projects with spending greater than \$5 million in FY19, excluding local community assistance programs, account for nearly 43% of the total spending and include:

Chelsea Creek Headworks Upgrade Construction - \$25.8 million (\$77.5 million total construction cost). This major rehabilitation project includes replacement/upgrade to the screens, grit collection system, grit and handling systems, odor control systems, HVAC, mechanical, plumbing and instrumentation. Solids handling systems are being automated and the building's egress and fire suppressions systems are also being upgraded.

Northern Intermediate High (NIH) Section 89 & 29 Redundancy Construction Phase 2 - \$11.0 million (\$22.7 million total construction cost). This is a redundancy project for MWRA's

Northern Intermediate High service area. Currently, this area is primarily supplied by a single 48-inch diameter pipeline, the Gillis Pump Station, and water distribution storage from the Bear Hill Tank. This project includes a new seven-mile redundant pipeline under four construction phases. This project will provide uninterrupted water supply to the service area in the event of a failure of the existing single supply pipe and will allow the existing pipe to be removed from service for inspection, maintenance, and repair. Phase 1A was completed; Phase 1B began in January 2016. Phase 1C was awarded in November 2016 and Phase 2 was awarded in June 2017.

Southern Extra High (SEH) Redundancy Section 111 Phase 2 & 3 Construction - \$13.1 million (\$35.5 million total construction cost). This is a redundancy project for MWRA's Southern Extra High service area. This project will provide redundancy to Sections 77 and 88 serving Boston, Norwood, Stoughton, and Dedham-Westwood, through construction of a redundant pipeline. Phase 1 will be substantially complete in September 2018. Phase 2 began in October 2017 and Phase 3 is anticipated to be awarded in April 2018.

Nut Island Odor Control & HVAC Improvements - Construction Phase 2 - \$6.5 million (\$38.5 million total construction cost). Improvements to the Nut Island Headworks odor control, HVAC and energy management systems. These are the long-term improvements project following the January 2016 fire and the odor control, HVAC and energy management systems evaluation contract completed in February 2017.

Steel Tanks Repainting: Deer Island, Bellevue 2, Turkey Hill - \$5.5 million (\$7.0 million total project cost). This contract includes the repainting of three (Deer Island, Bellevue 2 and Turkey Hill) out of six steel water distribution storage tanks. The remaining three steel tanks (Bellevue 1, Arlington Heights and Walnut Hill) require structural and SCADA improvements and repainting will be included with these improvements under a future contract.

Deer Island Wastewater Treatment Plant Asset Protection:

Clarifier Rehabilitation Phase 2 Construction - \$16.2 million (\$129.9 million total construction cost). This project will rehabilitate the sludge removal system in the primary tanks and the aeration/recirculation systems in the secondary tanks. The influent gates, effluent launders and aeration systems, and concrete corrosion in primary clarifiers will also be addressed and repaired. This contract is anticipated to be awarded in June 2018.

HVAC Equipment Replacement Construction - \$7.8 million (\$38.8 million total construction cost). This project will replace two obsolete HVAC control systems and one manufacturer's system, reducing replacement parts and improving automation. This contract is anticipated to be awarded in March 2018.

FY19 Anticipated Contract Awards

Future CIP spending is based on current and future contract awards. 46 contracts totaling \$265.7 million are projected to be awarded in FY19. The largest ten projected contract awards total \$178.0 million and are listed below, accounting for 67% of expected awards:

Project	Subphase	Contract Budget (\$s in millions)	FY19-23 Spending
132 Corrosion & Odor Control	NI Odor Control HVAC Improvement - Construction 2	\$38.5	\$38.5
145 Facility Asset Protection	Prison Point Rehabilitation - Construction	\$34.1	\$34.1
723 Northern Low Service Rehab Sec8	Sec 50 & 57 Water & 21/20/19 Sewer Rehab Construction	\$25.5	\$25.5
206 DI Treatment Plant Asset Protection	Fire Alarm System Replacement - Construction	\$20.0	\$20.0
145 Facility Asset Protection	Ward Street & Columbus Park Headworks Des/CA/REI	\$12.0	\$6.4
625 Metro Tunnel Redundancy	Conceptual Design - Environmental Impact Review	\$10.6	\$10.6
206 DI Treatment Plant Asset Protection	MCC & Switchgear Replacement Construction	\$10.6	\$10.6
618 Peabody Pipeline Project	Peabody Pipeline Construction	\$9.4	\$9.4
702 New Connect Mains-Shaft 7	CP3-Sect 23,24,47 Rehabilitation	\$9.4	\$9.4
206 DI Treatment Plant Asset Protection	Switchgear Relay Replacement Construction	\$8.0	\$8.0
Top 10 Contract Awards FY19		\$178.0	\$172.4
% of Total Awards		67%	68%
Total 46 Contracts for FY19		\$265.7	\$253.5

Future Spending

The following table depicts CIP projected spending for the FY19-23 Cap period and FY24-28 Cap period by major program categories for Wastewater Systems Improvements, Waterworks System Improvements and Business and Operations Support. The Metropolitan Tunnels Redundancy projects accounts for the increase in Transmission spending for Waterworks in the FY24-28 Cap period. The \$200 million credit in the same period for Other Waterworks represents the repayment of community water loans. Any new phase of the loan program would offset the credit.

Projected FY19-23 CAP spending and FY24-28 projected spending

Project Category	Total FY19-23	Total FY24-28
Wastewater System Improvements	\$739.5	\$597.8
Interception & Pumping	240.9	200.6
Treatment	370.4	318.8
Residuals	10.0	47.3
CSO	6.3	-
Other Wastewater	111.8	31.1
Waterworks System Improvements	\$449.8	\$554.4
Drinking Water Quality Improvements	8.9	14.5
Transmission (excluding Metro Tunnels)	22.3	54.1
Metro Tunnels Redundancy	17.0	348.0
Distribution & Pumping	309.4	338.2
Other Waterworks	92.3	(200.4)
Business & Operations Support	44.9	-
Total MWRA	\$1,234.1	\$1,152.2

CIP Review and Adoption Process

The Advisory Board will have 60 days from the transmittal of the FY19 Proposed CIP and proposed FY19-23 spending Cap to review the budget and prepare comments and recommendations. During the review period, Advisory Board and MWRA staff will continue to meet and discuss the changes to the capital budget. The Advisory Board will then transmit its comments and recommendations to MWRA in the spring after their review. Staff will prepare draft responses to the Advisory Board’s recommendations for discussion at the budget hearing. During the spring, MWRA will update the CIP to incorporate the latest information into the Final budget. In June, staff will present the FY19 Final CIP and final FY19-23 Cap to the Board for adoption.

ATTACHMENTS:

- A. New Capital Projects Added to the FY19 Proposed CIP
- B. FY19 Proposed Project Level Expenditure Forecast
- C. Overview of the FY19 Proposed CIP and Changes from the FY18 Final CIP
- D. FY19 Proposed Contract Awards

**Attachment A
FY19 New Capital Projects Added to the FY19 Proposed CIP**

Program	Project	Subphase	Total Contract Amount	NTP	SC	FY19	FY20	FY21	FY22	FY23	FY19-23	Beyond FY23
Treatment	DITP Asset Protection	Hydroturbine Replacements Design/ESDC/REI	\$ 2,000,000	Sep-18	Jun-24	\$ 280,000	\$ 420,000	\$ 230,380	\$ 394,936	\$ 394,937	\$ 1,720,253	\$ 279,747
		Hydroturbine Replacements Construction	\$ 10,000,000	Jun-20	Jun-23			\$ 1,944,444	\$ 3,333,333	\$ 3,333,334	\$ 8,611,111	\$ 1,388,889
		DI Radio Repeater System Upgrade	\$ 3,000,000	Apr-18	Oct-19	\$ 1,501,500	\$ 1,498,500				\$ 3,000,000	
Other Wastewater	I/I Local Financial Assistance Program	Phases 11 and 12	\$ 90,000,000	Aug-18	Aug-35	\$ 4,000,000	\$ 9,900,000	\$ 13,650,000	\$ 17,300,000	\$ 18,850,000	\$ 63,700,000	\$ 26,300,000
Drinking Water Quality Improvements	Carroll Water Treatment Asset Protection	HVAC Equipment Replacement	\$ 2,300,000	Jul-19	May-22		\$200,000	\$1,000,000	\$1,100,000		\$ 2,300,000	
		CWTP Chemical Pipe System Pipe, Pumps and Tank Replacement	\$ 4,000,000	Jul-27	Jun-29						\$ -	4,000,000
		CWTP Water Pump Replacement	\$ 2,000,000	Jul-27	Jul-30						\$ -	2,000,000
		Ozone Generator Replacement	\$ 20,000,000	Oct-27	Oct-30						\$ -	20,000,000
		Ultra Violet Reactor Replacement	\$ 10,000,000	Oct-32	Oct-34						\$ -	10,000,000
Transmission	Dam Projects	Sudbury/Foss Dam Impr/Wach North Dike Overtopping Protection Design CA/RI	\$ 210,000	Jul-18	Jun-20	79,000	105,000	26,000			\$ 210,000	
		Sudbury/Foss Dam Impr/Wach North Dike Overtopping Protection Construction	\$ 1,600,000	Jul-19	Jun-20		1,200,000	400,000			\$ 1,600,000	

Attachment A
FY19 New Capital Projects Added to the FY19 Proposed CIP

Program	Project	Subphase	Total Contract Amount	NTP	SC	FY19	FY20	FY21	FY22	FY23	FY19-23	Beyond FY23
Transmission	Sudbury/Weston Aqueduct Repairs	Waban Arches Bridge - Rehabilitation Design CA/RI	\$ 300,000	Oct-23	Oct-28						\$ -	300,000
		Waban Arches Bridge - Rehabilitation Construction	\$ 1,200,000	Oct-25	Oct-27						\$ -	1,200,000
		Farm Pond Inlet Chamber and Gate House - Rehabilitation Design CA/RI	\$ 400,000	Oct-24	Oct-29						\$ -	400,000
		Farm Pond Inlet Chamber and Gate House - Rehabilitation Construction	\$ 2,000,000	Oct-26	Oct-28						\$ -	2,000,000
	Watershed Land	Watershed Land Acquisition	\$ 5,000,000	Jul-19	Jun-23	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	\$ 5,000,000	
Distribution and Pumping	Cathodic Protection	Cathodic Protection (Western System) Design CA/RI	\$ 930,000	Jul-19	Jun-23		186,000	248,000	248,000	227,000	\$ 909,000	21,000
		Cathodic Protection (Western System) Construction	\$ 4,300,000	Jul-21	Jun-23				1,612,000	2,150,000	\$ 3,762,000	538,000
		Cathodic Protection (Metro System) Design CA/RI	\$ 9,900,000	Jul-20	Jun-26			1,256,000	1,673,000	1,673,000	\$ 4,602,000	5,298,000
		Cathodic Protection (Metro System) Construction	\$ 47,100,000	Jul-22	Jun-26					8,831,000	\$ 8,831,000	38,269,000
	NHS Revere & Malden Pipeline Improvements	Sections 13 & 48 Rehabilitation Design CA/RI	\$ 2,150,000	Jul-24	Jul-29						\$ -	2,150,000
		Sections 13 & 48 Rehabilitation Construction	\$ 10,750,000	Jul-26	Jul-28						\$ -	10,750,000

Attachment A
FY19 New Capital Projects Added to the FY19 Proposed CIP

Program	Project	Subphase	Total Contract Amount	NTP	SC	FY19	FY20	FY21	FY22	FY23	FY19-23	Beyond FY23
Other Waterworks	Waterworks Facility Asset Protection	New Roofs at Water Pumping Stations Design CA/RI	\$ 100,000	Jul-24	Jun-27						\$ -	100,000
		New Roofs at Water Pumping Stations Construction	\$ 500,000	Jul-25	Jun-26						\$ -	500,000
	Distribution System Facilities Mapping	Water System Hydraulic Model	\$ 500,000	Jul-19	Jun-20		375,000	125,000			\$ 500,000	
Business & Operations Support	Capital Maintenance Planning & Support	As-Needed CA/REI Contract 1	\$ 2,250,000	Sep-18	Sep-21	375,000	750,000	750,000	375,000		\$ 2,250,000	
		As-Needed CA/REI Contract 2	\$ 2,250,000	Sep-18	Sep-21	375,000	750,000	750,000	375,000		\$ 2,250,000	

SUMMARY:

Total Wastewater Projects	\$ 105,000,000			\$ 5,781,500	\$ 11,818,500	\$ 15,824,824	\$ 21,028,269	\$22,578,271	\$ 77,031,364	\$ 27,968,636
Total Waterworks Projects	\$ 125,240,000			\$ 1,079,000	\$ 3,066,000	\$ 4,055,000	\$ 5,633,000	\$13,881,000	\$ 27,714,000	\$ 97,526,000
Business & Operations Support	\$ 4,500,000			\$ 750,000	\$ 1,500,000	\$ 1,500,000	\$ 750,000	\$ -	\$ 4,500,000	\$ -
Total Projects	\$ 234,740,000			\$ 7,610,500	\$ 16,384,500	\$ 21,379,824	\$ 27,411,269	\$36,459,271	\$ 109,245,364	\$ 125,494,636

**ATTACHMENT B
FY19 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

Project	FY19 Budget	FY17 LTD	Remaining Balance	FY18	FY14 - FY18 Expenditures	FY19	FY20	FY21	FY22	FY23	FY19-FY23 Expenditures	Beyond FY23
Total MWRA	\$ 7,941,539,829	\$ 4,122,238,679	\$ 3,819,301,150	\$ 179,493,636	\$ 613,607,398	\$ 207,198,891	\$ 285,790,945	\$ 290,785,342	\$ 258,019,018	\$ 192,325,519	\$ 1,234,119,714	\$ 2,405,687,781
Wastewater	\$ 3,524,304,290	\$ 1,996,065,482	\$ 1,528,238,807	\$ 92,649,448	\$ 352,714,275	\$ 112,727,408	\$ 176,595,188	\$ 183,906,601	\$ 156,122,658	\$ 110,116,060	\$ 739,467,915	\$ 696,121,461
Interception & Pumping	1,089,548,545	562,049,108	527,499,436	47,029,822	88,538,867	47,132,369	64,534,984	61,565,683	41,091,076	26,595,967	240,920,079	239,549,531
102 Quincy Pump Facilities	25,907,202	25,907,203	-									
104 Braintree-Weymouth Relief Facilities	237,017,570	227,704,621	9,312,949		689	291,000	318,000	2,606,000	2,814,000	471,000	6,500,000	2,812,948
105 New Neponset Valley Relief	30,300,303	30,300,303	-									
106 Wellesley Externsion Replacement Sewer	64,358,543	64,358,543	-									
107 Framingham Extension Relief Sewer	47,855,986	47,855,986	-									
127 Cummingsville Replacement Sewer	8,998,768	8,998,767	-									
130 Siphon Structure Rehabilitation	7,092,405	939,770	6,152,634			268,291	415,277	1,531,329	1,525,339	2,412,398	6,152,634	
131 Upper Neponset Valley Sewer System	54,174,078	54,174,078	-									
132 Corrosion & Odor Control	62,301,378	3,700,377	58,601,001	2,658,181	3,357,152	7,928,833	20,610,279	16,341,226	3,602,488	3,703,000	52,185,826	3,756,995
136 West Roxbury Tunnel	11,313,573	10,313,573	1,000,000						700,000	300,000	1,000,000	
137 Wastewater Central Monitoring	27,482,036	19,782,036	7,700,000	140,000	139,835	400,000	480,000	526,666	526,667	526,667	2,460,000	5,100,000
139 South System Relief Project	4,939,244	3,439,244	1,500,000					187,500	750,000	562,500	1,500,000	
141 Wastewater Process Optimization	10,305,995	1,501,768	8,804,228		296,588		40,000	172,976	1,149,229		1,362,205	7,442,023
142 Wastewater Meter System - Equipment Replacement	28,437,912	5,137,912	23,300,000	1,192,619	1,192,619	1,306,762	7,109,745	4,735,566	13,462		13,165,535	8,941,846
143 Regional I/I Management Planning	168,987	168,987	-									
145 Facility Asset Protection	463,144,565	57,765,941	405,378,624	43,039,021	83,551,983	36,937,483	35,561,683	35,183,170	29,634,891	18,526,652	155,843,880	206,495,719
146 D.I. Cross Harbor Tunnel	5,000,000	-	5,000,000									5,000,000
147 Randolph Trunk Sewer Relief	750,000	-	750,000					281,250	375,000	93,750	750,000	

**ATTACHMENT B
FY19 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

Project	FY19 Budget	FY17 LTD	Remaining Balance	FY18	FY14 - FY18 Expenditures	FY19	FY20	FY21	FY22	FY23	FY19-FY23 Expenditures	Beyond FY23
Treatment	1,024,128,016	291,824,298	732,303,718	12,117,160	119,218,688	46,721,237	82,941,403	91,765,523	91,664,124	57,357,579	370,449,867	349,736,691
182 DI Primary and Secondary Treatment	(957,878)	(957,878)	-									
200 DI Plant Optimization	33,278,599	33,278,599	-		(148,080)							
206 DI Treatment Plant Asset Protection	961,241,372	244,876,489	716,364,883	8,424,300	105,800,215	44,880,008	82,070,569	90,873,856	90,939,124	56,840,912	365,604,470	342,336,111
210 Clinton Wastewater Treatment Plant	28,354,249	12,415,413	15,938,836	3,692,860	13,582,553	1,841,229	870,834	891,667	725,000	516,666	4,845,396	7,400,580
211 Laboratory Services	2,211,674	2,211,674	-		(16,000)							
Residuals	167,642,622	64,642,623	103,000,000	2,069,043	2,175,850	3,986,904	3,088,922	799,636	977,718	1,133,333	9,986,513	90,944,444
261 Residuals	63,810,848	63,810,848	-									
271 Residuals Asset Protection	103,831,775	831,775	103,000,000	2,069,043	2,175,850	3,986,904	3,088,922	799,636	977,718	1,133,333	9,986,513	90,944,444
CSO	910,119,246	900,500,660	9,618,584	3,287,187	66,081,522	929,250	2,808,533	2,593,609			6,331,392	
MWRA Managed	433,534,309	433,534,308	-		3,655,831							
339 North Dorchester Bay	221,509,794	221,509,793	-		(110,812)							
347 East Boston Branch Sewer Relief	85,637,164	85,637,164	-		(8,831)							
348 BOS019 Storage Conduit	14,287,581	14,287,581	-									
349 Chelsea Trunk Sewer	29,779,319	29,779,319	-									
350 Union Park Detention Treatment Facility	49,583,406	49,583,406	-									
353 Upgrade Existing CSO Facilities	22,385,200	22,385,200	-									
354 Hydraulic Relief Projects	2,294,549	2,294,549	-									
355 MWR003 Gate & Siphon	4,424,219	4,424,219	-		3,775,474							
357 Charles River CSO Controls	3,633,077	3,633,077	-									

**ATTACHMENT B
FY19 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

Project	FY19 Budget	FY17 LTD	Remaining Balance	FY18	FY14 - FY18 Expenditures	FY19	FY20	FY21	FY22	FY23	FY19-FY23 Expenditures	Beyond FY23
Community Managed	423,775,023	418,758,098	5,016,925	1,259,162	61,553,824		1,878,879	1,878,878			3,757,757	
340 Dorchester Bay Sewer Separation (Fox Point)	55,028,985	55,028,985	-		876,689							
341 Dorchester Bay Sewer Separation (Commercial Point)	63,619,398	59,861,640	3,757,758		(1,285,510)		1,878,879	1,878,878			3,757,757	
342 Neponset River Sewer Separation	2,491,746	2,491,746	-		47,352							
343 Constitution Beach Sewer Separation	3,731,315	3,731,315	-		(37,573)							
344 Stony Brook Sewer Separation	44,319,314	44,319,313	-		120,929							
346 Cambridge Sewer Separation	104,552,056	103,297,502	1,254,553	1,254,553	54,067,851							
351 BWSC Floatables Controls	945,936	945,936	-		12,957							
352 Cambridge Floatables Controls	1,126,708	1,126,708	-		39,783							
356 Fort Point Channel Sewer Separation	11,507,257	11,507,256	-		(499,452)							
358 Morrissey Boulevard Drain	32,181,035	32,181,034	-		(165,754)							
359 Reserved Channel Sewer Separation	70,524,407	70,519,798	4,609	4,609	10,484,506							
360 Brookline Sewer Separation	24,715,291	24,715,290	-		(1,282,073)							
361 Bulfinch Triangle Sewer Separation	9,031,576	9,031,575	-		(825,881)							
CSO Planning & Support	52,809,914	48,208,254	4,601,659	2,028,025	871,867	929,250	929,654	714,731			2,573,635	
324 CSO Support	52,809,914	48,208,254	4,601,659	2,028,025	871,867	929,250	929,654	714,731			2,573,635	
Other Wastewater	332,865,861	177,048,794	155,817,067	28,146,235	76,699,349	13,957,648	23,221,346	27,182,149	22,389,740	25,029,181	111,780,064	15,890,796
128 I/I Local Financial Assistance	332,584,985	176,767,918	155,817,067	28,146,235	76,699,349	13,957,648	23,221,346	27,182,149	22,389,740	25,029,181	111,780,064	15,890,796
138 Sewerage System Mapping Upgrades	280,876	280,876	-									

**ATTACHMENT B
FY19 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

Project	FY19 Budget	FY17 LTD	Remaining Balance	FY18	FY14 - FY18 Expenditures	FY19	FY20	FY21	FY22	FY23	FY19-FY23 Expenditures	Beyond FY23
Waterworks	\$ 4,265,405,668	\$ 2,028,390,120	\$ 2,237,015,548	\$ 83,645,982	\$ 237,353,699	\$ 81,200,102	\$ 97,193,763	\$ 98,262,035	\$ 96,656,619	\$ 76,487,347	\$ 449,799,866	\$ 1,703,569,670
Drinking Water Quality Improvements	704,191,204	645,948,583	58,242,621	4,082,228	54,823,260	1,723,574	1,612,010	2,824,807	2,200,000	500,000	8,860,391	45,300,000
542 Carroll Water Treatment Plant	435,619,623	419,264,339	16,355,284	3,764,894	11,820,707	1,723,574	1,062,010	554,807			3,340,391	9,250,000
543 Brutsch Water Treatment Plant	19,972,883	19,972,879	-		7,204,638							
544 Norumbega Covered Storage	106,674,146	106,674,146	-									
545 Blue Hills Covered Storage	40,082,837	40,082,837	-		120,000							
550 Spot Pond Covered Storage Facility	60,271,716	59,954,382	317,333	317,334	35,677,915							
555 Carroll Water Treatment Plant Asset Protection	41,570,000	-	41,570,000				550,000	2,270,000	2,200,000	500,000	5,520,000	36,050,000
Transmission	2,512,196,960	799,016,095	1,713,180,865	25,158,321	69,136,259	15,398,225	28,958,148	31,753,264	34,367,920	41,353,828	151,831,385	1,536,191,137
597 Winsor Station Pipeline Improvements	48,739,416	5,760,423	42,978,994	375,084	4,739,916	13,293			217,500	870,000	1,100,793	41,503,104
601 Sluice Gate Rehabilitation	9,158,411	9,158,411	-									
604 MetroWest Tunnel	700,184,180	697,180,659	3,003,521	1,696	1,783,847							3,001,822
615 Chicopee Valley Aqueduct Redundancy	8,666,292	8,666,292	-									
616 Quabbin Transmission System	16,798,914	8,322,493	8,476,420	376,420	1,496,449	240,000	740,000	2,440,000	2,640,000	490,000	6,550,000	1,550,000
617 Sudbury/Weston Aqueduct Repairs	10,393,399	2,580,287	7,813,112	188,580	2,108,919	51,042	87,500	554,167	420,833	36,458	1,150,000	6,474,531
620 Wachusett Reservoir Spillway Improvements	9,287,460	9,287,461	-									
621 Watershed Land	29,000,000	20,482,400	8,517,600	1,500,000	4,640,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	5,000,000	2,017,600
622 Cosgrove Tunnel Redundancy	57,237,697	30,106,010	27,131,688	21,172,923	50,103,489	5,202,645	753,697	2,424			5,958,766	
623 Dam Projects	5,876,316	3,115,745	2,760,571	566	31,129	79,000	1,305,000	468,858	282,143	357,143	2,492,144	267,856
625 Metropolitan Tunnel Redundancy	1,404,925,794	3,442,599	1,401,483,195	18,746	1,794,889	1,721,245	3,442,491	3,442,491	2,008,123	6,424,475	17,038,825	1,384,425,624
628 Metropolitan Redundancy Interim Improvements	194,629,080	913,315	193,715,765	1,064,306	1,977,621	5,251,000	21,579,460	23,638,324	27,111,321	31,010,752	108,590,857	84,060,600

**ATTACHMENT B
FY19 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

Project	FY19 Budget	FY17 LTD	Remaining Balance	FY18	FY14 - FY18 Expenditures	FY19	FY20	FY21	FY22	FY23	FY19-FY23 Expenditures	Beyond FY23
630 Watershed Division Capital Improvements	17,300,000	-	17,300,000	460,000	460,000	1,840,000	50,000	207,000	688,000	1,165,000	3,950,000	12,890,000
Distribution and Pumping	961,581,855	423,476,742	538,105,113	42,942,691	93,715,857	42,318,104	46,780,909	42,960,774	39,454,171	25,322,639	196,836,597	298,325,817
618 Peabody Pipeline Project	12,908,857	30,300	12,878,557	971,557	1,001,857	2,204,000	9,403,000	298,000	2,000		11,907,000	
677 Valve Replacement	21,401,715	12,016,378	9,385,337									9,385,332
678 Boston Low Service - Pipe & Valve Rehabilitation	23,690,864	23,690,863	-									
683 Heath Hill Road Pipe Replacement	19,358,036	19,358,036	-									
689 James L. Gillis Pump Station	33,419,006	33,419,007	-									
692 Northern High Service - Section 27 Improvement	1,294,099	123,646	1,170,453	1,950	1,950	5,750	5,750	5,750	205,750	802,050	1,025,050	143,453
693 NHS - Revere & Malden Pipeline Improvements	79,673,893	27,057,513	52,616,379	1,535,224	1,759,998	2,712,203	1,707,000	13,707,500	11,396,958	707,557	30,231,218	20,849,937
702 New Connecting Mains -Shaft 7 to WASM 3	44,731,690	12,268,490	32,463,200	725,643	2,033,326	2,848,957	5,331,045	8,618,489	4,444,081	936,167	22,178,739	9,558,818
704 Rehab of Other Pump Stations	50,257,852	30,057,852	20,200,000				180,000	240,000	244,167	656,667	1,320,834	18,879,166
706 NHS - New Connecting Mains from Section 91	2,360,194	2,360,194	-									
708 Northern Extra High Service - New Pipelines	10,720,937	3,632,119	7,088,818	53,364	53,364	3,000	2,700	1,950	75,100	315,000	397,750	6,637,704
712 Cathodic Protection of Distribution Mains	63,823,334	245,869	63,577,465	122,544	227,500	375,116	611,117	1,679,000	3,708,000	12,955,688	19,328,921	44,126,000
713 Spot Pond Supply Mains Rehabilitation	66,870,147	65,509,308	1,360,839	23,495	4,550,803		100,000	75,000	875,000	250,000	1,300,000	37,344
714 Southern Extra High Sections 41 & 42	3,657,243	3,657,243	-									
719 Chestnut Hill Connecting Mains	33,400,559	17,486,675	15,913,884	781,500	781,500							15,132,384
720 Warren Cottage Line Rehab	1,204,822	1,204,821	-									
721 Southern Spine Distribution Mains	77,575,549	36,683,101	40,892,448	381	(8,166)	526,698	474,064	301,201	453,257	456,910	2,212,130	38,679,936
722 NIH Redundancy & Storage	118,003,131	27,275,695	90,727,436	23,851,010	45,152,340	14,919,293	5,435,800	4,980,550	7,592,000	7,437,000	40,364,643	26,511,783
723 Northern Low Service Rehabilitation - Section 8	67,465,531	2,320,986	65,144,545	1,086,400	1,086,400	1,847,837	9,591,600	9,308,600	9,708,600	8,600	30,465,237	33,592,909

**ATTACHMENT B
FY19 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

Project	FY19 Budget	FY17 LTD	Remaining Balance	FY18	FY14 - FY18 Expenditures	FY19	FY20	FY21	FY22	FY23	FY19-FY23 Expenditures	Beyond FY23
725 Hydraulic Model Update	598,358	598,358	-									
727 SEH Redundancy & Storage	127,693,767	15,416,203	112,277,565	12,024,437	20,683,670	16,873,000	13,937,583	3,743,609	434,133	378,000	35,366,325	64,886,802
730 Weston Aqueduct Supply Mains	80,559,420	80,488,104	71,316	71,314	14,516,125							
731 Lynnfield Pipeline	5,625,829	5,625,828	-		(51,693)							
732 Walnut St. & Fisher Hill Pipeline Rehabilitation	2,717,140	2,717,141	-									
735 Section 80 Rehabilitation	12,569,883	233,012	12,336,871	1,693,872	1,926,884	2,250	1,250	1,125	315,125	419,000	738,750	9,904,249
Other Waterworks	87,435,649	159,948,700	(72,513,051)	11,462,742	19,678,323	21,760,199	19,842,696	20,723,190	20,634,528	9,310,880	92,271,493	(176,247,283)
753 Central Monitoring System	39,017,210	20,609,110	18,408,100	160,246	4,965,627	700,000	1,975,000	3,950,000	2,800,000	775,000	10,200,000	8,047,855
763 Distribution Systems Facilities Mapping	2,798,919	1,036,368	1,762,551				875,000	510,956	276,595	100,000	1,762,551	
764 Local Water Infrastructure Rehabilitation	7,487,762	7,487,762	-									
765 Local Water Pipeline Assistance Program	-	128,447,970	(128,447,970)	11,237,479	12,826,208	13,297,199	14,006,307	10,735,469	8,705,885	5,523,645	52,268,505	(191,953,953)
766 Waterworks Facilities Asset Protection	38,131,758	2,367,490	35,764,268	65,016	1,886,487	7,763,000	2,986,389	5,526,765	8,852,048	2,912,235	28,040,437	7,658,815
Business & Operations Support	\$ 151,829,871	\$ 97,783,076	\$ 54,046,795	\$ 3,198,206	\$ 23,539,424	\$ 13,271,381	\$ 12,001,994	\$ 8,616,706	\$ 5,239,741	\$ 5,722,112	\$ 44,851,934	\$ 5,996,652
881 Equipment Purchase	33,166,756	20,323,331	12,843,425	1,500,368	9,716,370	2,240,000	2,142,500	2,012,500	\$ 2,022,500	\$ 2,925,556	\$ 11,343,056	
925 Technical Assistance	1,150,000	-	1,150,000			383,333	383,333	383,334			\$ 1,150,000	
930 MWRA Facility - Chelsea	9,812,071	9,812,071	-		(1,563)							
931 Business Systems Plan	24,562,604	24,562,603	-		111,373							
932 Environmental Remediation	1,478,602	1,478,602	-		(200)							
933 Capital Maintenance Planning & Development	23,693,251	13,151,947	10,541,304	1,232,948	4,260,654	3,558,356	3,400,000	1,600,000	750,000		9,308,356	
934 MWRA Facilities Management	2,150,535	370,533	1,780,002			140,000	888,002	752,000			1,780,002	
935 Alternative Energy Initiatives	23,131,330	18,052,832	5,078,499	20,179	876,207							5,058,319

**ATTACHMENT B
FY19 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

Project	FY19 Budget	FY17 LTD	Remaining Balance	FY18	FY14 - FY18 Expenditures	FY19	FY20	FY21	FY22	FY23	FY19-FY23 Expenditures	Beyond FY23
940 Application Improvement Program	12,348,230	2,670,409	9,677,821	311,089	2,908,373	1,366,954	1,895,348	872,430	1,676,111	2,617,556	8,428,399	938,333
942 Information Security Program (ISP)	3,726,636	1,681,336	2,045,300		1,146,146	1,028,266	594,333	120,000	295,701	7,000	2,045,300	
944 Information Technology Management Program	635,640	-	635,640			200,000	385,640	50,000			635,640	
946 IT Infrastructure Program	15,974,217	5,679,412	10,294,805	133,623	4,522,064	4,354,472	2,312,838	2,826,442	495,429	172,000	10,161,181	

Attachment C
Overview of the Proposed FY19 CIP and Changes from the Final FY18 CIP

Program and Project	FY18 Final			
	Total Budget Amount	FY14-18	FY19-23	Beyond 23
Total MWRA	7,383,674	617,006	1,346,792	1,731,752
Wastewater	3,241,687	351,327	745,938	408,417
Interception & Pumping	1,003,457	88,222	281,760	112,936
102 Quincy Pump Facilities	25,907	-	-	-
104 Braintree-Weymouth Relief Facilities	234,493	201	6,588	-
105 New Neponset Valley Relief Sewer	30,300	-	-	-
106 Wellesley Extension Replacement Sewer	64,359	-	-	-
107 Framingham Extension Relief Sewer	47,856	-	-	-
127 Cummingsville Replacement Sewer	8,999	-	-	-
130 Siphon Structure Rehabilitation	6,881	-	5,941	-
131 Upper Neponset Valley Sewer	54,174	-	-	-
132 Corrosion & Odor Control	48,323	3,220	42,102	-
136 West Roxbury Tunnel	11,314	-	1,000	-
137 Wastewater Central Monitoring	27,482	200	2,400	5,100
139 South System Relief Project	4,939	-	1,500	-
141 Wastewater Process Optimization	10,416	297	5,195	3,719
142 Wastewater Meter System-Equipment	28,438	1,000	14,625	7,675
143 Regional I/I Management Planning	169	-	-	-
145 Facility Asset Protection	393,657	83,304	196,659	96,442
146 D.I. Cross Harbor Tunnel Inspection	5,000	-	5,000	-
147 Randolph Trunk Sewer Relief	750	-	750	-
Treatment	917,148	121,222	391,894	219,307
182 DI Primary and Secondary	(958)	-	-	-
200 DI Plant Optimization	33,279	(148)	-	-
206 DI Treatment Plant Asset Protection	859,105	108,305	383,991	219,308
210 Clinton Wastewater Treat Plant	23,494	13,065	7,903	-
211 Laboratory Services	2,228	-	-	-
Residuals	167,643	2,958	13,565	86,583
261 Residuals	63,811	-	-	-
271 Residuals Asset Protection	103,832	2,958	13,565	86,583

FY19 Proposed			
Total Budget Amount	FY14-18	FY19-23	Beyond 23
7,941,540	613,606	1,234,119	2,405,689
-	-	-	-
3,524,304	352,714	739,468	696,122
1,089,549	88,540	240,921	239,550
25,907	-	-	-
237,018	1	6,500	2,813
30,300	-	-	-
64,359	-	-	-
47,856	-	-	-
8,999	-	-	-
7,092	-	6,153	-
54,174	-	-	-
62,301	3,357	52,186	3,757
11,314	-	1,000	-
27,482	140	2,460	5,100
4,939	-	1,500	-
10,306	297	1,362	7,442
28,438	1,193	13,166	8,942
169	-	-	-
463,145	83,552	155,844	206,496
5,000	-	-	5,000
750	-	750	-
1,024,128	119,219	370,449	349,735
(958)	-	-	-
33,279	(148)	-	-
961,241	105,800	365,604	342,336
28,354	13,583	4,845	7,400
2,212	(16)	-	-
167,643	2,176	9,987	90,946
63,811	-	-	-
103,832	2,176	9,987	90,946

Change from Final FY18			
Total Budget Amount	FY14-18	FY19-23	Beyond 23
516,296	(3,400)	(118,193)	637,887
-	-	-	-
282,617	1,387	(6,470)	287,705
86,092	318	(40,839)	126,614
-	-	-	-
2,525	(200)	(88)	2,813
-	-	-	-
-	-	-	-
-	-	-	-
211	-	212	-
-	-	-	-
13,978	137	10,084	3,757
-	-	-	-
-	(60)	60	-
-	-	-	-
(110)	-	(3,833)	3,723
-	193	(1,459)	1,267
-	-	-	-
69,488	248	(40,815)	110,054
-	-	(5,000)	5,000
-	-	-	-
106,980	(2,003)	(21,445)	130,428
-	-	-	-
-	-	-	-
102,136	(2,505)	(18,387)	123,028
4,860	518	(3,058)	7,400
(16)	(16)	-	-
-	-	-	-
-	(782)	(3,578)	4,363
-	-	-	-
-	(782)	(3,578)	4,363

Attachment C
Overview of the Proposed FY19 CIP and Changes from the Final FY18 CIP

Financial Assistance	FY18 Final				FY19 Proposed				Change from Final FY18				
	Program and Project	Total Budget Amount	FY14-18	FY19-23	Beyond 23	Total Budget Amount	FY14-18	FY19-23	Beyond 23	Total Budget Amount	FY14-18	FY19-23	Beyond 23
CSO		910,573	66,260	6,605	-	910,118	66,080	6,331	-	(455)	(180)	(274)	-
340 Dorchester Bay Sewer Separation (Fox Point)		54,626	473	-	-	55,029	877	-	-	403	404	-	-
341 Dorchester Bay Sewer Separation (Commercial Point)		64,009	(896)	3,758	-	63,619	(1,286)	3,758	-	(390)	(390)	-	-
342 Neponset River Sewer Separation		2,549	105	-	-	2,492	47	-	-	(57)	(58)	-	-
343 Constitution Beach Sewer Separation		3,731	(38)	-	-	3,731	(38)	-	-	-	-	-	-
344 Stony Brook Sewer Separation		44,268	70	-	-	44,319	121	-	-	51	51	-	-
346 Cambridge Sewer Separation		104,552	54,068	-	-	104,552	54,068	-	-	-	-	-	-
351 BWSC Floatables Controls		946	13	-	-	946	13	-	-	-	-	-	-
352 Cambridge Floatables Control		1,127	40	-	-	1,127	40	-	-	-	-	-	-
356 Fort Point Channel Sewer Separation		11,872	(134)	-	-	11,507	(499)	-	-	(365)	(365)	-	-
358 Morrissey Boulevard Drain		32,186	(161)	-	-	32,181	(166)	-	-	(5)	(5)	-	-
359 Reserved Channel Sewer Separation		70,517	10,477	-	-	70,524	10,485	-	-	7	8	-	-
360 Brookline Sewer Separation		24,715	(1,282)	-	-	24,715	(1,282)	-	-	-	-	-	-
361 Bulfinch Triangle Sewer Separation		9,054	(803)	-	-	9,032	(826)	-	-	(22)	(23)	-	-
339 North Dorchester Bay		221,510	(111)	-	-	221,510	(111)	-	-	-	-	-	-
347 East Boston Branch Sewer Relief		85,637	(9)	-	-	85,637	(9)	-	-	-	-	-	-
348 BOS019 Storage Conduit		14,288	-	-	-	14,288	-	-	-	-	-	-	-
349 Chelsea Trunk Sewer		29,779	-	-	-	29,779	-	-	-	-	-	-	-
350 Union Park Detention Treatment Facility		49,583	-	-	-	49,583	-	-	-	-	-	-	-
353 Upgrade Existing CSO Facilities		22,385	-	-	-	22,385	-	-	-	-	-	-	-
354 Hydraulic Relief Projects		2,295	-	-	-	2,295	-	-	-	-	-	-	-
355 MWR003 Gate & Siphon		4,425	3,776	-	-	4,424	3,775	-	-	(1)	(1)	-	-
357 Charles River CSO Controls		3,633	-	-	-	3,633	-	-	-	-	-	-	-
324 CSO Support		52,886	673	2,848	-	52,810	872	2,574	-	(76)	199	(274)	-
Other Wastewater		242,866	72,665	52,114	(10,409)	332,866	76,699	111,780	15,891	90,000	4,034	59,666	26,300
128 I/I Local Financial Assistance		242,585	72,665	52,114	(10,409)	332,585	76,699	111,780	15,891	90,000	4,034	59,666	26,300
138 Sewerage System Mapping Upgrade		281	-	-	-	281	-	-	-	-	-	-	-
Total Waterworks		4,010,951	236,427	576,515	1,323,338	4,265,407	237,353	449,804	1,703,573	212,886	926	(132,231)	344,185
Drinking Water Quality		666,791	54,972	6,195	10,417	704,192	54,824	8,860	45,300	(4,169)	(148)	(2,855)	(1,167)
542 Carroll Water Treatment Plant		439,799	11,979	6,195	10,417	435,620	11,821	3,340	9,250	(4,179)	(158)	(2,855)	(1,167)
543 Quabbin Water Treatment Plant		19,973	7,205	-	-	19,973	7,205	-	-	-	-	-	-
544 Norumbega Covered Storage		106,674	-	-	-	106,674	-	-	-	-	-	-	-
545 Blue Hills Covered Storage		40,083	120	-	-	40,083	120	-	-	-	-	-	-
550 Spot Pond Storage Facility		60,262	35,668	-	-	60,272	35,678	-	-	10	10	-	-
555 CWTP Asset Protection		0	0	0	0	41,570	-	5,520	36,050	41,570	-	5,520	36,050

**Attachment C
Overview of the Proposed FY19 CIP and Changes from the Final FY18 CIP**

Financial Assistance	FY18 Final			
	Total Budget Amount	FY14-18	FY19-23	Beyond 23
Transmission	2,423,540	65,671	276,132	1,326,706
597 Winsor Station Pipeline	34,243	4,837	24,950	3,061
601 Sluice Gate Rehabilitation	9,158	-	-	-
604 MetroWest Tunnel	701,189	1,791	4,000	-
615 Chicopee Valley Aqueduct Redundancy	8,666	-	-	-
616 Quabbin Transmission System	16,419	1,316	7,900	-
617 Sudbury/Weston Aqueduct Repairs	6,477	2,109	3,248	460
620 Wachusett Reservoir Spillway Improvement	9,287	-	-	-
621 Watershed Land	24,000	4,732	1,926	-
622 Cosgrove/Wachusett Redundancy	54,316	46,659	6,482	-
623 Dam Projects	4,066	31	951	-
625 Metro Tunnel Redundancy	1,357,686	1,749	95,972	1,258,298
628 Metro Redundancy Interim Improvement	180,731	1,935	114,161	64,635
630 Watershed Division Capital Improvement	17,300	510	16,540	250
Distribution & Pumping	839,544	92,306	208,134	166,403
618 Northern High NW Tran Sections 70 & 71	12,910	1,006	11,904	-
677 Valve Replacement	20,115	-	3,558	4,540
678 Boston Low Service-Pipe & Valve Rehabilitation	23,691	-	-	-
683 Heath Hill Road Pipe Replacement	19,358	-	-	-
689 James L. Gillis Pump Station Rehabilitation	33,419	-	-	-
692 NHS - Section 27 Improvements	1,134	-	1,010	-
693 NHS - Revere & Malden Pipeline Improvement	65,373	2,064	36,409	67
702 New Connect Mains-Shaft 7 to WASM 3	38,841	2,301	21,691	3,889
704 Rehabilitation of Other Pump Stations	50,258	-	1,321	18,879
706 NHS-Connecting Mains from Section 91	2,360	-	-	-
708 Northern Extra High Service New Pipelines	8,045	56	3,600	757
712 Cathodic Protection Of Distribution Mains	1,704	218	1,345	-
713 Spot Pond Supply Mains Rehabilitation	66,858	4,551	1,326	-
714 Southern Extra High Sections 41 & 42	3,657	-	-	-
719 Chestnut Hill Connecting Mains	33,094	1,000	14,602	6
720 Warren Cottage Line Rehabilitation	1,205	-	-	-
721 South Spine Distribution Mains	76,281	69	4,342	35,179
722 NIH Redundancy & Storage	113,121	41,648	42,516	22,982
723 Northern Low Service Rehabilitation Section 8	56,889	1,028	31,827	21,714
724 Northern High Service - Pipeline Rehabilitation	-	-	-	-
725 Hydraulic Model Update	598	-	-	-
727 Southern Extra High Redundancy & Storage	109,410	21,928	24,051	56,673
730 Weston Aqueduct Supply Mains	80,696	14,573	80	-
731 Lynnfield Pipeline	5,626	(52)	-	-
732 Walnut St. & Fisher Hill Pipeline Rehabilitation	2,717	-	-	-

FY19 Proposed			
Total Budget Amount	FY14-18	FY19-23	Beyond 23
2,512,197	69,138	151,834	1,536,193
48,739	4,740	1,101	41,503
9,158	-	-	-
700,184	1,784	-	3,002
8,666	-	-	-
16,799	1,496	6,550	1,550
10,393	2,109	1,150	6,475
9,287	-	-	-
29,000	4,640	5,000	2,018
57,238	50,103	5,959	-
5,876	31	2,492	268
1,404,926	1,795	17,039	1,384,425
194,629	1,978	108,591	84,060
17,300	460	3,950	12,890
961,582	93,714	196,838	298,326
12,909	1,002	11,907	-
21,402	-	-	9,386
23,691	-	-	-
19,358	-	-	-
33,419	-	-	-
1,294	2	1,025	143
79,674	1,760	30,231	20,850
44,732	2,033	22,179	9,559
50,258	-	1,321	18,879
2,360	-	-	-
10,721	53	398	6,637
63,823	227	19,329	44,126
66,870	4,551	1,300	37
3,657	-	-	-
33,401	782	-	15,132
1,205	-	-	-
77,576	(8)	2,212	38,680
118,003	45,152	40,365	26,512
67,466	1,086	30,465	33,594
598	-	-	-
127,694	20,684	35,366	64,887
80,559	14,516	-	-
5,626	(52)	-	-
2,717	-	-	-

Change from Final FY18			
Total Budget Amount	FY14-18	FY19-23	Beyond 23
88,657	3,467	(124,298)	209,487
14,496	(97)	(23,849)	38,442
-	-	-	-
(1,005)	(7)	(4,000)	3,002
-	-	-	-
380	180	(1,350)	1,550
3,916	-	(2,098)	6,015
-	-	-	-
5,000	(92)	3,074	2,018
2,922	3,444	(523)	-
1,810	-	1,541	268
47,240	46	(78,933)	126,127
13,898	43	(5,570)	19,425
-	(50)	(12,590)	12,640
122,038	1,408	(11,296)	131,923
(1)	(4)	3	-
1,287	-	(3,558)	4,846
-	-	-	-
-	-	-	-
160	2	15	143
14,301	(304)	(6,178)	20,783
5,891	(268)	488	5,670
-	-	-	-
-	-	-	-
2,676	(3)	(3,202)	5,880
62,119	9	17,984	44,126
12	-	(26)	37
-	-	-	-
307	(218)	(14,602)	15,126
-	-	-	-
1,295	(77)	(2,130)	3,501
4,882	3,504	(2,151)	3,530
10,577	58	(1,362)	11,880
-	-	-	-
-	-	-	-
18,284	(1,244)	11,315	8,214
(137)	(57)	(80)	-
-	-	-	-
-	-	-	-

Attachment C
Overview of the Proposed FY19 CIP and Changes from the Final FY18 CIP

Financial Assistance	FY18 Final				FY19 Proposed				Change from Final FY18				
	Program and Project	Total Budget Amount	FY14-18	FY19-23	Beyond 23	Total Budget Amount	FY14-18	FY19-23	Beyond 23	Total Budget Amount	FY14-18	FY19-23	Beyond 23
	733 NHS Pipeline Rehabilitation 13-18 & 48	-	-	-	-	-	-	-	-	-	-	-	-
	734 Southern Extra High Pipelines-Sections 30, 39,40, & 44	-	-	-	-	-	-	-	-	-	-	-	-
	735 Section 80 Rehabilitation	12,185	1,917	8,551	1,717	12,570	1,927	739	9,904	385	10	(7,812)	8,187
	Other	81,076	23,478	86,054	(180,190)	87,436	19,677	92,272	(176,248)	6,360	(3,801)	6,218	3,942
	753 Central Monitoring System	39,040	5,542	5,457	12,237	39,017	4,966	10,200	8,048	(23)	(576)	4,743	(4,189)
	763 Distribution Systems Facilities Mapping	2,299	-	1,263	-	2,799	-	1,763	-	500	-	500	-
	764 Local Water Infrastructure Rehabilitation Assistance	7,488	-	-	-	7,488	-	-	-	-	-	-	-
	765 Local Water Pipeline Improvement Loan Program	-	15,106	51,224	(193,189)	-	12,826	52,269	(191,954)	-	(2,280)	1,045	1,235
	766 Waterworks Facility Asset Protection	32,249	2,831	28,110	762	38,132	1,886	28,040	7,658	5,883	(945)	(70)	6,896
	Business & Operations Support	131,036	29,250	24,344	-	151,829	23,537	44,852	5,997	20,793	(5,713)	20,508	5,997
	881 Equipment Purchase	29,408	11,354	5,946	-	33,167	9,716	11,343	-	3,759	(1,638)	5,397	-
	925 Technical Assistance	1,150	383	767	-	1,150	-	1,150	-	-	(383)	383	-
	930 MWRA Facility - Chelsea	9,812	(2)	-	-	9,812	(2)	-	-	-	-	-	-
	931 Business Systems Plan	24,563	111	-	-	24,563	111	-	-	-	-	-	-
	932 Environmental Remediation	1,479	-	-	-	1,479	-	-	-	-	-	-	-
	933 Capital Maintenance Planning	15,208	4,505	579	-	23,693	4,261	9,308	-	8,485	(244)	8,729	-
	934 MWRA Facilities Management	2,151	-	1,780	-	2,151	-	1,780	-	-	-	-	-
	935 Alternative Energy Initiatives	23,271	1,191	4,883	-	23,131	876	-	5,058	(140)	(315)	(4,883)	5,058
	940 Applicat Improv Program	9,980	4,347	5,560	-	12,348	2,908	8,428	939	2,368	(1,439)	2,868	939
	942 Info Security Program ISP	2,822	1,741	546	-	3,727	1,146	2,045	-	905	(595)	1,499	-
	944 Info Tech Mgmt Program	923	-	923	-	636	-	636	-	(287)	-	(287)	-
	946 IT Infrastructure Program	10,271	5,621	3,359	-	15,974	4,522	10,161	-	5,703	(1,099)	6,802	-

**Attachment D
FY19 Proposed CIP Planned Contract Awards**

Project	Contract Number	Subphase	NTP	SC	FY19 Budget
933 Capital Maintenance Planning & Support	98489_7498	As-Needed Design Contract 16	Jul-18	Jul-20	\$ 2,000,000
933 Capital Maintenance Planning & Support	98490_7604	As-Needed Design Contract 17	Jul-18	Jul-20	\$ 2,000,000
934 MWRA Facilities Management	92389_6983	Design/Engineering Services	Jul-18	Sep-19	\$ 150,000
940 Application Improvements Program	92435_7286	Lawson Enhancements	Jul-18	Sep-25	\$ 2,702,830
940 Application Improvements Program	98475_7438	Enterprise Content Mgmt	Jul-18	Jun-20	\$ 1,313,437
944 Information Technology Mgmt Program	98472_7408	IT Project Management Methodology	Jul-18	Jun-19	\$ 200,000
616 Quabbin Transmission Syst.	60113_7333	Rehab Wach Gate House/Bastion Lower Gate HouseGeo-Thermal Design	Jul-18	Jun-23	\$ 1,200,000
623 Dam Projects	60190_7614	Sudbury/Foss Dam Design/Construction Administration/Resident Inspection	Jul-18	Jun-20	\$ 210,000
628 Metro Redu Interim Improvements	60208_7575	Weston Aqueduct Supply Mains/Spot Pond Supply Mains Pressure Reducing Valves Design/Construction Administration/Resident Inspection	Jul-18	Jul-23	\$ 3,000,000
766 Waterworks Facility Asset	75535_7425	Electrical Distrib. Upgrades at Southborough	Aug-18	Aug-19	\$ 1,500,000
881 Equipment Purchase	88108_7631	Contaminant Monitoring Equipment	Sep-18	Jun-23	\$ 2,690,000
933 Capital Maintenance Planning & Support	98491_7629	As-Needed Construction Services/Resident Engineer Inspection Contract 1	Sep-18	Sep-21	\$ 2,250,000
933 Capital Maintenance Planning & Support	98492_7630	As-Needed Construction Services/Resident Engineer Inspection Contract 2	Sep-18	Sep-21	\$ 2,250,000
206 DI Treatment Plant Asset Protection	19289_7051	Fire Alarm System Replacement - Construction	Sep-18	Mar-22	\$ 20,000,000
206 DI Treatment Plant Asset Protection	19351_7397	Clarifier Rehab Phase 2 - Resident Engineer Inspection	Sep-18	Jun-22	\$ 3,000,000
206 DI Treatment Plant Asset Protection	19563_7426	Fire System Replacement - Resident Engineer Inspection	Sep-18	Jun-22	\$ 2,300,000

Attachment D
FY19 Proposed CIP Planned Contract Awards

Project	Contract Number	Subphase	NTP	SC	FY19 Budget
206 DI Treatment Plant Asset Protection	19603_7570	Hydroturb Replacement Design/Engineering Services During Construction/Resident Engineer Inspection	Sep-18	Jun-24	\$ 2,000,000
766 Waterworks Facility Asset protection	75497_6832	Steel Tank/Inpr Des CA/RI	Sep-18	Jun-23	\$ 3,100,000
766 Waterworks Facility Asset protection	75554_7542	Water Meter Upgrade Design Construction Administration/Resident Inspection	Sep-18	Jun-24	\$ 200,000
617 Sudbury/Weston Aqued. Repairs	60152_7491	Weston Aqueduct Sluice Gates - Design	Sep-18	Sep-22	\$ 350,000
628 Metro Redu Interim Impr	60207_7574	Chestnut Hill Emergency Pump Station Design/Construction Administration/Resident Inspection	Sep-18	Sep-25	\$ 6,700,000
206 DI Treatment Plant Asset Protection	19315_7125	Misc. VFD Replacements FY19-FY23	Oct-18	Jun-23	\$ 4,834,000
702 New Connect Mains-Shaft 7 to WASM 3	68119_6392	CP3-Sect 23,24,47, Rehabilitation	Oct-18	Sep-21	\$ 9,368,419
702 New Connect Mains-Shaft 7 to WASM 3	68255_6955	Repl Sect 25, 75, 59 & 60 Design Construction Administration/Resident Inspection	Oct-18	Dec-25	\$ 3,500,000
625 Metro Tunnel Redundancy	60092_7159	Conceptual Design Environmental Impact Report	Oct-18	Oct-21	\$ 10,614,350
145 Facility Asset Protection	10505_7421	Sections 4, 5, 6, 186 - Design Construction Administration/Resident Inspection	Nov-18	Nov-22	\$ 1,000,000
132 Corrosion & Odor Control	10498_7548	NI Odor Control HVAC Improvements Construction Phase 2	Dec-18	Dec-20	\$ 38,500,000
130 Siphon Structure Rehabilitation	10293_6224	Design/Construction Services/Resident Inspection	Jan-19	Dec-22	\$ 1,480,242
145 Facility Asset Protection	10457_7216	Malden & Melrose Hydraulic & Structural-Study/Design	Jan-19	Dec-19	\$ 300,000
206 DI Treatment Plant Asset Protection	19290_7052	Digester & Storage Tank Rehabilitation Design/Engineering Services During Construction	Jan-19	Jan-26	\$ 4,360,000
712 Cathodic Protection Of Distribution Mains	68131_6440	Cathodic Protection Shafts E & L	Jan-19	Jan-20	\$ 550,233
628 Metro Redundancy Interim Improvements	75581_7524	Commonwealth Ave Pump Station Improvements Construction	Jan-19	Jan-21	\$ 7,563,000

**Attachment D
FY19 Proposed CIP Planned Contract Awards**

Project	Contract Number	Subphase	NTP	SC	FY19 Budget
145 Facility Asset Protection	10510_7429	Ward St & Columbus Park Headworks Deigns/Construction Administration/Resident Engineer Inspection	Feb-19	Nov-26	\$ 11,959,163
145 Facility Asset Protection	10535_7554	Fuel Oil Tank Repl Construction Ph 1	Feb-19	Feb-21	\$ 3,615,185
206 DI Treatment Plant Asset Protection	19335_7169	Gas Protection System Replacement Ph 2	Feb-19	May-20	\$ 1,000,000
206 DI Treatment Plant Asset Protection	19561_7420	Motor Control Center & Switchgear Replacement Construction	Feb-19	Aug-21	\$ 10,585,725
618 Peabody Pipeline Project	60061_6893	Peabody Pipeline Construction	Feb-19	Aug-20	\$ 9,400,000
145 Facility Asset Protection	10467_7279	Interceptor Renewal 3, Dochester Interceptor Sewer - Construction	Mar-19	Sep-20	\$ 6,000,000
145 Facility Asset Protection	10519_7462	Prison Point Rehabilitation - Construction	Mar-19	Mar-21	\$ 34,102,431
210 Clinton Wastewaetr Treat Plant	19408_7591	Screw Pump Replacement Ph 2 Construction	Mar-19	Jun-24	\$ 4,750,000
206 DI Treatment Plant Asset Protection	19297_7059	Switchgear Relay Replacement Constr.	Apr-19	Apr-22	\$ 8,000,000
712 Cathodic Protection Of Distribution Mains	68130_6439	Cathodic Protection Shafts E & L Construction Administration/Resident Inspection	Apr-19	Sep-22	\$ 674,688
628 Metro Redundancy Interim Improvements	60202_7561	Tops of Shaft Interim Improvement Costruction	Apr-19	Apr-20	\$ 6,197,460
628 Metro Redundancy Interim Improvements	60209_7599	Shafts 5 & 9 Bldg Improvements Design Construction Administration/Resident Inspection	Apr-19	Apr-22	\$ 750,000
145 Facility Asset Protection	10528_7515	Intercep. Renewal 5 Milton - Design CA/R	May-19	May-25	\$ 2,000,000
723 Nor Low Service Rehab Section 8	75611_7541	Setionsc 50 & 57 Water & 21/20/19 Sewer Rehabilitation Construction	May-19	Jul-21	\$ 25,500,000

46 Total FY19 Planned Contract Awards

\$ 265,721,163

STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: December 20, 2017
SUBJECT: Approval of the Seventy-Sixth Supplemental Bond Resolution



COMMITTEE: Administration, Finance & Audit

VOTE
 INFORMATION

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



Thomas J. Durkin
Director, Finance

RECOMMENDATION:

To adopt the Seventy-Sixth Supplemental Resolution authorizing the issuance of up to \$50,000,000 of Massachusetts Water Resources Authority Subordinated General Revenue Bonds and the supporting issuance resolution.

DISCUSSION:

The Massachusetts Clean Water Trust ("MCWT") provides subsidized financing for water and wastewater capital projects to Massachusetts governmental entities. MWRA annually submits new projects to the Massachusetts Department of Environmental Protection to be considered for inclusion on the Clean and Drinking Water Intended Use Plans. New and previously approved carry-over projects that are included on an Intended Use Plan are eligible to receive financing through the MCWT. Historically, MWRA has drawn down its funding at the same time MCWT was closing their bond transaction. This arrangement assisted MCWT in accessing their federal funding and prevented stress on the available funds given MWRA's relatively large draws.

MCWT has requested that MWRA switch from one annual funding request to a periodic funding schedule. Under this structure, MWRA will enter into interest free interim loans with MCWT to drawdown funding. Once a sufficient amount of funds has been drawn by MWRA and other communities, the MCWT will issue long-term debt to permanently finance the loans. At that time, MWRA will enter into the standard long-term loans with MCWT as part of its Pool 21 borrowing.

In Fiscal Year 2018, MWRA anticipates receiving up to \$50 million in new, low-interest loans from MCWT to fund several water and wastewater projects. Depending upon the useful life of the assets financed, water projects funded with MCWT financing may have a maturity schedule of up to 30 years. The loans with a 20-year maturity will have a fixed interest rate of 2.15%, including the MCWT administrative fee of 0.15%. MWRA anticipates borrowing 20-year loans as part of this transaction. MCWT also charges a loan origination fee of \$5.50 per \$1,000 to cover its costs of issuance.

In order to move ahead with the Pool 21 interim and permanent borrowing, MCWT requires that all borrowers sign loan commitment documents which indicate that they have the authorization to borrow these funds. Once the documents are completed, MWRA will begin drawing funds. While this new structure will allow MWRA to access the interest free funds sooner, it may make budgeting for the debt service costs associated with the permanent financing more difficult. MWRA is required by its General Bond Resolution to make monthly principal and interest deposits to the debt service accounts for these bonds. Since MWRA is required to budget the funds for anticipated principal and interest payments, shifts in timing of the permanent financing will change when deposits are required and may reduce budget expenses.

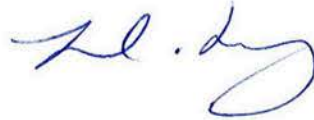
MWRA expects to receive reimbursements for projects including: Wachusett Aqueduct Pump Station, Southern Extra High Redundancy, Chelsea Headworks Upgrades, and Deer Island Treatment Plant Improvements.

BUDGET/FISCAL IMPACT:

There are sufficient funds available in the FY18 CEB to pay the debt service costs associated with these borrowings.


STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: December 20, 2017
SUBJECT: Financial and Swap Advisory Services
PFM Financial Advisors LLC
Contract F247




COMMITTEE: Administration, Finance & Audit

X VOTE
___ INFORMATION


Michele S. Gillen
Director, Administration

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


Thomas J. Durkin
Director, Finance

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to award Contract F247 to PFM Financial Advisors LLC for financial and swap advisory services and to authorize the Executive Director, on behalf of the Authority, to execute contract F247 in an amount not to exceed \$580,750 and for a term of four years from the notice to proceed.

DISCUSSION:

To manage its multi-billion capital program MWRA requires the services of a registered independent municipal advisor (financial advisor) and a qualified independent representative (swap advisor). The financial advisor will assist the MWRA with the development of a long-term plan of finance, and debt issuances, including assistance with structuring the bond transaction, review and analysis of market conditions, and ongoing management of the debt program. PFM will also assist MWRA with its other financial operations, including review of the existing loan programs and the commercial paper program. The swap advisor will provide MWRA with ongoing swap monitoring, annual reports required by GASB 53 and GASB 72 and other swap related services.

Since the last time MWRA procured these services the regulatory landscape for financial and swap advisors has changed. The Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank) placed a registration requirement and fiduciary responsibilities on municipal financial advisors. In addition to the restrictions on financial advisors, Dodd-Frank restricted investment banks from providing information to municipal bond issuers who are not represented by a

registered independent municipal advisor. Dodd-Frank also required the Securities and Exchange Commission (SEC) and Municipal Securities Rulemaking Board (MRSB) to develop regulations for financial advisors. Dodd-Frank required the SEC and Commodity Futures Trading Commission to produce regulations related to firms providing swap advisory services. The swap regulations place a similar registration and fiduciary responsibility on swap advisors.

PROCUREMENT PROCESS:

The procurement process to select a financial advisor utilized a one-step Request for Qualification Statements and Proposals (RFQ/P), which was issued on November 1, 2017. In addition to MWRA's standard procurement advertising requirements, copies of the advertisement were sent directly to five firms to encourage competition. One firm, PFM Financial Advisors LLC (PFM) submitted a proposal on November 22, 2017. In the proposal PFM identified PFM Swap Advisors LLC as the subconsultant that would provide swap advisory services.

As a result of a municipal market scandal involving MWRA's financial advisor, beginning with its 1993 procurement for financial advisory services, eligibility of firms to provide financial advisory services was limited to financial firms that do not provide underwriting services. This prohibition was recommended at that time by the Inspector General, and MWRA has continued the practice without interruption since then. As a result of the requirements in the Dodd-Frank Act, the SEC and the MRSB through Rule G-23 places restrictions on entities from serving as both a financial advisor and underwriter on the same transaction. This new regulation provides protection from a financial advisor firm which underwrites bond transactions from serving as an underwriter on an individual transaction for which it is providing advisory services. However, it does not prohibit them from serving as an underwriter on other municipal bonds or future transactions for that issuer or at this time from purchasing the bonds they advised on in the secondary market. In order to reduce the risk of conflicts of interest between financial advisory services and underwriting, MWRA made the business decision to continue its long-standing practice of prohibiting entities that conduct municipal underwritings from serving as its financial advisor.

As part of the RFQ/P process, a Disclosure Panel comprised of MWRA legal and procurement staff reviewed the proposals for compliance with MWRA's Statement of Fiduciary Responsibility Standards. Based on the Panel's review, it was determined that no conflict or appearance of a conflict exists that would disqualify PFM from providing these services.

The Selection Committee determined that PFM's senior personnel are qualified and possess the necessary experience to provide financial and swap advisory services to MWRA. PFM has served as MWRA's financial advisor for the last twelve years and its performance has been excellent. PFM's hourly rates for the managing director, senior managing consultant, and consultant categories increased by \$25 per hour over the rates that have been in effect since 2013. The \$25 per hour increase is the equivalent of approximately 2% a year increase on the rates from the 2013 procurement. Similar to the prior contract, PFM proposed no escalation in hourly rates over the four-year term.

The total not-to-exceed amount for the four years of this contract is \$580,750, which is \$93,615 higher than the last contract. The increase in cost is a result of a combination of additional tasks and the higher hourly rates. The additional tasks as compared to the last scope of services include four additional defeasances, ten more hours to provide advice related to financial procurements, and a \$20,000 allowance for swap advisor services. The allowance for the swap advisor services is related to the new requirements under Dodd-Frank and will only be expended if MWRA authorizes the work under a task order.

In addition to MWRA, PFM has served as financial advisor to several Massachusetts entities including the Office of the State Treasurer, Massachusetts Port Authority, Massachusetts Clean Water Trust, and Massachusetts Bay Transportation Authority as well as many other large issuers around the United States. All of the Massachusetts entities provided excellent references for PFM.

The Selection Committee concluded that PFM had significant relevant experience and possesses the qualifications and capacity to provide MWRA with the required services. As a result, all of the committee members scored PFM in the very good and excellent range and therefore, the Selection Committee unanimously recommends that this contract be awarded to PFM.

BUDGET/FISCAL IMPACT:

The costs associated with financial advisory services are split between the cost of issuance for a related bond transaction and the current expense budget depending on the task. There are sufficient funds in the FY18 CEB to pay for the work under this contract. Funds for the remaining years will be included in future CEBs.

MBE/WBE PARTICIPATION:

No minimum MBE/WBE participation requirements were included due to the lack of subcontracting opportunities. PFM did not propose any MBE/WBE participation.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: December 20, 2017
SUBJECT: Dental Insurance
Dental Service of Massachusetts, Inc.
d/b/a Delta Dental of Massachusetts
Contract A613



COMMITTEE: Administration, Finance and Audit

INFORMATION

VOTE


Karen Gay-Valente, Director, Human Resources
Preparer/Title


Michele S. Gillen
Director of Administration

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to select Delta Dental of Massachusetts to provide dental insurance to eligible employees as described herein and authorize the Executive Director, on behalf of the Authority, to execute a contract with Dental Service of Massachusetts, Inc. d/b/a Delta Dental of Massachusetts for an amount not to exceed \$352,000 for a contract term of twelve months with three options to renew for a period of twelve months each, subject to further Board approval.

BACKGROUND:

MWRA has been providing dental insurance to all non-union employees since July 1, 1985. This benefit covers Non-Union and Unit 6 employees and employees accreted into Units 1 and 9. Other MWRA union employees receive coverage through the Health and Welfare Funds of their respective unions. This proposed contract maintains the level of coverage currently offered to eligible employees in the areas of diagnostic, preventive, basic and major restorative services to an increased annual maximum of \$1,500, as well as orthodontic coverage for a separate lifetime maximum of \$1,500. The increase in the annual maximum to \$1,500 from \$1,250 was approved by the Board of Directors on November 15, 2017, and matches the current maximum GIC offers its managers. MWRA employees are currently ineligible to participate in the GIC's plan which offers both dental and vision care benefits because the plan is limited to Commonwealth non-union managers.

DISCUSSION:

On September 15, 2017, MWRA issued a one-step Request for Qualifications Statement/Proposal (RFQ/P) that was publically advertised in the Central Register, Boston Herald, Banner Publication and El Mundo. In addition, three firms were notified of the procurement opportunity. The RFQ/P included the following evaluation criteria: Cost – 50 points; Technical Approach/Capacity/Organization and Management Approach – 30 points; and Experience/Past Performance/Qualifications and Key Personnel – 20 Points.

MWRA received proposals from two firms: Dental Service of Massachusetts, Inc. d/b/a Delta Dental of Massachusetts and Blue Cross and Blue Shield of Massachusetts, Inc. The Selection Committee reviewed, scored, and ranked the proposals as follows:

FIRM	PROPOSED COST	TOTAL POINTS	*ORDER OF PREFERENCE/TOTAL SCORE	FINAL RANKING
Delta Dental	\$351,274	431	6	1
Blue Cross	\$348,442	288.5	9	2

*Rank 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.

Delta Dental (MWRA's current provider) met all criteria and requirements in the RFQ/P, including required coverage. Favorable reviews were received from external references, and Delta Dental has performed well under the current contract. Delta Dental's proposed cost was higher than Blue Cross', but only by a small margin (less than \$3,000 for the year). Delta Dental's proposed comprehensive unit rates are 2% less than its rates under MWRA's current contract despite the increase in the calendar year maximum benefit.

Blue Cross provided the lowest price proposal and its proposed coverage was compliant with the RFQ/P requirements. However, its response indicated that the rates quoted may change if there were to be a change in commission or enrollment, among other contingencies. The language in the Authority's RFQ/P required that the comprehensive unit rates not escalate or fluctuate due to changes in enrollment. In addition, Blue Cross failed to provide an accessibility analysis requested in the RFQ/P and to adequately describe its technical approach. Blue Cross also proposed changes to the MWRA's standard contract language.

Based on the final rankings and for the reasons set forth above, the Selection Committee recommends the award of this contract to Dental Service of Massachusetts, Inc. d/b/a Delta Dental of Massachusetts in an amount not to exceed \$352,000.


BUDGET/FISCAL IMPACT:

The \$352,000 value of this contract is a not-to-exceed amount based on calendar year. The actual cost of the contract will vary depending on the number of enrollees. The FY18 Current Expense Budget includes \$343,414.65. Any costs above this will be absorbed in the MWRA budget. The FY19 Current Expense Budget will include funding for the remaining portion of this contract.

MBE/WBE UTILIZATION:

There are no MBE/WBE participation requirements for this contract.


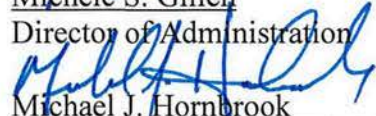
STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: December 20, 2017
SUBJECT: Security Guard Services for Various MWRA Facilities
Universal Protection Service, LLC d/b/a/
Allied Universal Security Services
Contract EXE-033, Amendment 2

COMMITTEE: Administration, Finance & Audit

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

 INFORMATION
 X VOTE


Michele S. Gillen
Director of Administration

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to execute Amendment 2 to Contract EXE-033, Security Guard Services For Various MWRA Facilities, with Universal Protection Service, LLC d/b/a Allied Universal Security Services, extending the contract term by 365 calendar days from February 6, 2018 to February 5, 2019 and increasing the contract price by \$1,943,420.00, from \$7,391,947.20 to an amount not to exceed \$9,335,367.20.

DISCUSSION:

Since February 5, 2014, Allied United Security Services, (formerly AlliedBarton Security Services, Inc.), has provided around-the-clock security, including video and alarm monitoring, gate access and mobile patrols, to MWRA major facilities: Charlestown Headquarters, Deer Island Treatment Plant, Chelsea Facility, Carroll Water Treatment Plant, and other remote locations. On December 18, 2013, the Board of Directors approved the award of Contract EXE-033 for an amount not to exceed \$5,664,094.25, with an original term of three years with two, one-year extension options subject to further Board approval. On December 14, 2016, the Board approved Amendment 1 extending the contract term by one year, increasing the contract price by \$1,727,852.95, and approving an assignment of the contract from AlliedBarton Security Services, Inc. to Universal Protection Service, LLC d/b/a/Allied Universal Security Services.

This Amendment

Amendment 2 is for the second, one-year extension option. Security considerations and Allied Universal's performance support this recommendation. Allied Universal's current security force continues to perform at a high level. Moreover, Allied Universal's familiarity with the MWRA's facilities and operations, as well as the technology that MWRA employs, will most effectively ensure continuity of security at this time.

The current SEIU Collective Bargaining Agreement (CBA) expires on July 1, 2018. The new guard billing rate in the proposed Amendment 2 includes salary rate increases through July 1 required under the CBA. Any rate increases negotiated in the CBA after July 1, 2018 must be paid by Allied Universal at no additional cost to the Authority. The rate increase also includes additional costs to cover sick days required by Massachusetts law and increases in health insurance premiums. Staff have determined that the rate increases are reasonable.

The projected cost of Amendment 1 (the fourth year) was \$2,027,843. This sum was offset by \$300,000 of unspent funds in that contract year, resulting in a total Amendment 1 of \$1,727,852.95. The projected cost of Amendment 2 (the fifth year) is \$2,093,420, which includes the above rate increases as well as 206 additional security hours and a position adjustment for project management duties. The \$2,093,420 cost is offset by approximately \$150,000 of unspent funds in the current contract year due mostly to unexpended overtime allowances, resulting in a total Amendment 2 of \$1,943,420.

The contract summary is as follows:

	Amount	Time	Date
Original Contract	\$5,664,094.25	36 Months	February 5, 2014
Amendment 1	\$1,727,852.95	12 Months	February 6, 2017
Amendment 2	<u>\$1,943,420.00</u>	12 Months	Pending
Total	\$9,335,367.20		

For the reasons set forth above, staff recommend the Board's approval of Amendment 2 to Contract EXE-033.

BUDGET/FISCAL IMPACTS:

The not-to-exceed cost of this one-year extension to Contract EXE-033 is \$1,943,420. The FY18 CEB includes \$1,848,000 for security related expenses, and adequate funds will be included in the FY19 CEB to fund remainder of this contract.

MBE/WBE PARTICIPATION:

Due to the specialized nature of this contract and the limited opportunities for subcontracting, no MBE or WBE participation requirements were established for this contract.



MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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, December 20, 2017

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

Time: Immediately following AF&A Comm.

AGENDA

A. Approvals

1. Renewal of Water Supply Continuation Agreements with Chicopee Valley Aqueduct Communities

B. Contract Amendments/Change Orders

1. Northern Intermediate High Section 110 – Reading and Woburn: Albanese D&S, Inc., Contract 7471, Change Order 14
2. Northern Intermediate High Section 110 – Stoneham and Wakefield: Albanese D&S, Inc. Contract 7478, Change Order 5

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Water Policy and Oversight Committee

November 15, 2017

A meeting of the Water Policy and Oversight Committee was held on November 15, 2017 at the Authority headquarters in Charlestown. Chairman Blackmon presided. Present from the Board were Ms. Wolowicz and Messrs. Carroll, Flanagan, Foti, Pappastergion, Peña, Vitale and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Mike Hornbrook, Josh Das, Dave Coppes, Cori Barrett, Terry Flynn, Vince Spada and Bonnie Hale. The meeting was called to order at 11:50 a.m.

Information

Update on Lead and Copper Rule Compliance – Fall 2017 and Update of Local and National Activities

Staff provided a status update.

Contract Amendments/Change Orders

Staff gave presentations summarizing the following two projects and the work to be performed under the respective change orders:

*Southern Extra High Pipeline – Section 111 (Boston): P. Gioioso and Sons, Inc., Contract 6454, Change Order 3

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


*Wachusett Aqueduct Pumping Station: BHD/BEC JV 2015, A Joint Venture, Contract 7157, Change Order 25

The Committee recommended approval of Change Order 25 (ref. agenda item B.2).

The meeting adjourned at 12:10 p.m.

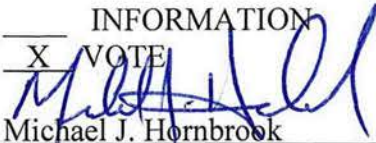
* Approved as recommended at November 15, 2017 Board of Directors meeting.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: December 20, 2017
SUBJECT: Renewal of Water Supply Continuation Agreements with Chicopee, South Hadley Fire District #1, and Wilbraham

COMMITTEE: Water Policy & Oversight

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

INFORMATION
X VOTE

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to execute the attached ten-year Water Supply Continuation Agreements with Chicopee, South Hadley Fire District Number #1, and Wilbraham, substantially in the form filed as Attachments one through three to this Staff Summary.

DISCUSSION:

Introduction

Chicopee, South Hadley Fire District No.#1 (SHFD#1) and Wilbraham receive MWRA water pursuant to Water Supply Continuation Agreements.¹ Chapter 575 of the Acts of 1947 authorized the Metropolitan District Commission to construct the Chicopee Valley Aqueduct and to sell and deliver water to Chicopee Valley communities. Each community entered into 45 or 50-year contracts with MDC, and then subsequent ten-year Agreements with MWRA in 1998 and again in 2007-2008. South Hadley and Wilbraham's Agreements with MWRA will expire on December 31, 2017, and Chicopee's on June 30, 2018.²

¹ Twenty-five of the fifty MWRA water served communities are "contract communities" that receive water pursuant to Water Supply Contracts. Currently, fully served contract communities include the three Chicopee Valley Aqueduct communities as well as Framingham, Northborough, Reading, Southborough, and Weston. Partially served communities that regularly use both MWRA water and local sources to meet demand include Bedford, Canton, Dedham-Westwood W.D., Lynn Water & Sewer Commission, Marlborough, Needham, Peabody, Stoughton, Wakefield, Wellesley, Wilmington, Winchester, and Woburn. Contract communities that rely on MWRA only in unusual or emergency situations include Cambridge, Leominster, and Worcester. The differentiation between contract and non-contract communities dates back to prior to the MWRA's Enabling Act.

² MWRA requested, and Chicopee consented, to renewing its Water Supply Agreement early in order that the three CVA communities' needs could be considered concurrently.

MWRA worked with the three CVA communities to develop new Agreements and to identify opportunities and obligations for the next contract term. The new Agreements were predicated upon the communities' satisfaction of certain criteria set forth in the MWRA Enabling Act and the completion of a process outlined in MWRA regulation (360 C.M.R. 11.00) entitled "Regulations for the Continuation of Contract Water Supply." The Regulation requires the preparation of a Supplementary Report that includes supply and demand analyses, documentation of conservation and demand management efforts, and a description of various facets of the community's water supply system. The Regulation also prescribes the execution of a written agreement between MWRA and each community.

The Proposed Agreements

Each of the proposed Agreements recites the facts establishing that the applicable criteria set forth in Section 8(d) of the Enabling Act as necessary conditions for the continuation of water supply have been satisfied; these criteria relate to safe yield, use and non-abandonment of local sources, implementation of effective demand management measures, and the conduct of water use surveys.

Each Agreement also states the maximum annual water volumes and maximum daily water volumes that MWRA agrees to provide the community. These are as follows:

Community	2016 Water Withdrawals Average/Max Day	Annual Volume Contract Limit (Average Day)	Maximum Day Contract Limit
Chicopee	5.35/8.68 mgd	2,150 mg (5.89 mgd)	10.0 mgd
South Hadley FD#1	1.13/2.2 mgd	600 mg (1.64 mgd)	3.0 mgd
Wilbraham	1.25/2.85mgd	500 mg (1.37 mgd)	3.2 mgd

The maximum day withdrawal limits in the new contracts are lower than the limits contained in prior contracts and limits established some seventy years ago. The addition of a back-pressure sustaining valve and controls implemented in the last decade to address under-pressurization concerns associated with lower CVA system demand decreased the CVA's capacity below its original 23 MGD design. Recognizing that demands may increase over time, the Agreements provide that every five years, or in the event of revised circumstances regarding demand, the contracts' maximum day limits will be re-evaluated in collaboration with the three CVA communities. The maximum day limits and provisions for re-evaluation were discussed with the communities and found acceptable. If demand warrants, capital improvements such as removing the back-pressure sustaining valve, installing a by-pass line, or redesigning the control system can be undertaken to increase capacity.

The Agreements also incorporate the provisions of Chapter 188 of the Acts of 2010 which was enacted to address the matter of side connections to South Hadley Fire District#1 and Wilbraham's water supply pipelines (owned by the communities, not MWRA) that extend directly from the CVA and that pass through non-MWRA communities (see the Figure on following page). Whereas the 50-year Agreements entered into MDC and SHFD#1 and Wilbraham permitted new service connections in Ludlow and Granby, neither the CVA

authorizing legislation nor Section 8(d) of the Enabling Act address/ sanction side connections in non-MWRA communities. The 2010 legislation was enacted to clarify and provide the authority for the CVA communities to provide water to properties in the non-communities that are located contiguous to, or in the vicinity of the local community-owned water supply pipelines that extend directly from the Chicopee Valley Aqueduct without invoking MWRA *OP.10, Admission of New Communities to the Water System.*³



³ The 45/50 year MDC Agreements with the SHFD#1 and Wilbraham were honored by MWRA. Prior to enactment of legislation in 2010, while existing customers in Ludlow and Granby served via the CVA communities' pipelines could continue to be served, there was no clear legislative authority for the communities to sell MWRA water to new customers in Ludlow and Granby. While there are hundreds of customers already served by MWRA along the pipelines, there are also properties interspersed between these existing customers that are on wells, and that may seek MWRA water in the future. The legislation provided an opportunity to enable what is contemplated to be a limited number of new connections to existing water supply infrastructure. New water service to properties that are not adjacent to or in the vicinity of the existing community pipelines connecting to the MWRA, or developments where large volumes of water would be required, are not be covered under the legislation.

BUDGET/FISCAL IMPACTS:

The CVA communities are assessed under a separate CVA rate structure and methodology. The charges are in accordance with MWRA's Community Charge Determination Policy, which computes charges for water services on the basis of each community's metered water flows.

ATTACHMENTS:

1. Water Supply Agreement between MWRA and Chicopee
2. Water Supply Agreement between MWRA and South Hadley Fire District#1
3. Water Supply Agreement between MWRA and Wilbraham

WATER SUPPLY CONTINUATION AGREEMENT

BETWEEN

THE MASSACHUSETTS WATER RESOURCES AUTHORITY

AND

THE CITY OF CHICOPEE

This Water Supply Continuation Agreement (“Agreement”) by and between the Massachusetts Water Resources Authority (the “MWRA”) and the City of Chicopee (the “City”), (hereinafter jointly referred to as the “Parties”), memorializes the agreement and understanding of the Parties regarding the arrangement whereby the MWRA will continue to supply water to the City and the City will purchase a portion of its water supply from the MWRA water supply system.

RECITALS

- R.1. MWRA was created in 1984 by chapter 372 of the Acts of 1984 (the “Act”) to operate, regulate, finance, and modernize the waterworks and sewerage systems serving the greater metropolitan Boston area. Operating pursuant to the terms of the Act, the MWRA currently provides water supply and distribution services and wastewater collection and treatment services, to certain cities, towns and special service districts (the “Communities”) within its service area.
- R.2. The MWRA desires to continue to provide safe and sufficient water supplies to the City and to provide system-wide assistance to help protect and conserve water supplies.
- R.3. Section 8 (d) of the Act permits the MWRA to enter into an arrangement to provide for the continued delivery of water to a Community if specified requirements are met.
- R.4. A regulation entitled “Continuation of Contract Water Supply”, promulgated by the MWRA at 360 C.M.R. 11.00 and most recently revised on November 18, 1994, (the “Regulation”) defines more specifically the requirements of section 8(d) of the Act and

governs the continued delivery of water by the MWRA to the Communities purchasing water from the MWRA.

- R.5. The Chicopee Valley Aqueduct was built in 1947-1949 and designed to provide 23 MGD based upon a full Quabbin at 530 BCB, with a 36-inch wye installed to allow capacity to be increased by adding a second pipeline running parallel to the existing line.
- R.6. The City executed a contract with the Metropolitan District Commission (MDC) dated August 26, 1948, for the purchase of up to 15 MGD of raw water from the Quabbin Reservoir through the Chicopee Valley Aqueduct which contract expired on September 25, 2000, and which assured the City that it could obtain a portion of its water supply from the MDC/MWRA system.
- R.7. On May 21, 1997 the MWRA Board of Directors voted to create a separate rate structure for the CVA communities which rate structure is set forth in Exhibit A.
- R.8. The City and MWRA subsequently executed a new contract for the purchase of water from the MWRA reflecting the new rate structure effective July 1, 1998, which by its terms expired on June 30, 2008, and a successor contract, which by its terms expires on June 30, 2018.
- R.9. The MWRA has assumed responsibility for providing a safe and sufficient supply of water for the CVA communities as a whole and has provided covered storage at Nash Hill, central monitoring and control, partial redundancy, and permanent disinfection facilities necessary for meeting the requirements of EPA's Surface Water Treatment Rule and Long Term 2 Enhanced Surface Water Treatment Rule (SWTR) and related provisions of Massachusetts Drinking Water Regulations, including disinfection facilities and Ultraviolet Treatment facilities.
- R.10. Construction of ultra-violet disinfection, and improvements and control modifications completed in 2007 as part as of the Chicopee Valley Aqueduct Pipeline Redundancy Project, were based upon existing and projected demands substantially lower than 23 MGD and were intended to address the state and federal drinking water standards, to provide redundancy, and to address under-pressurization concerns associated with low and average day demands.
- R.11. The City has assumed responsibility for meeting certain requirements of the Lead and Copper Rule and related provisions of Massachusetts Drinking Water Regulations and the City provides corrosion control to keep the City in compliance with the Lead and Copper Rule.
- R.12. The City, pursuant to the Regulation, has requested from the MWRA that its water supply be continued and has submitted a continuation request and a Supplementary Report including a supply analysis, a demand analysis, a plan for water conservation and demand management pursuant to Section 11.08 of the Regulation.

- R.13. The City had adopted a drought by-law and contingency plan to reduce water in case of drought or emergency.
- R.14. The City has submitted a detailed description of the local user charges system and accounting system which meet the Regulation's requirement for conservation based-rates.
- R.15. Based upon its review of the submittals described in recital paragraph R. 12 through R. 14 above, the MWRA finds that the applicable requirements of section 8(d) of the Act have been met as follows:
- (1) the safe yield of the watershed system as of the date of this contract and as projected for the term hereof, is sufficient to meet the projected demand of the City;
 - (2) No existing or potential water supply source for the City has been abandoned;
 - (3) Effective demand management measures have been developed by the City;
 - (4) A local water supply source feasible for development has not been identified by either the City or the Department of Environmental Protection (the "DEP"); and
 - (5) A water use survey has been completed, which identifies all users within the City that consume in excess of twenty million gallons a year.
- R.16. Chapter 188 of the Acts of 2016 provides that each of the communities comprised of the City, the South Hadley Fire District, and Wilbraham may provide water for new single service connections by extending their respective water supply systems to properties in other communities that are located contiguous to, or in the vicinity of, their respective local community-owned water supply pipelines that extend directly from the Chicopee Valley Aqueduct.
- R.17. Whereas, the MWRA and the City wish to formalize their rights and obligations regarding the supply of water to the City and therefore enter into this Agreement.

NOW, THEREFORE, in consideration of mutual promises contained herein and for other good and valuable consideration, the MWRA and the City agree to the following:

1. The term ("Term") of this Agreement shall be ten (10) years beginning on January 1, 2018 and ending at midnight on December 31, 2027.
2. The MWRA shall during the Term provide the City with water on a maximum annual water volume basis, stated in millions of gallons, as follows:

Maximum Annual Volume
2,150 million gallons

Additionally, consistent with the hydraulic capabilities of MWRA's transmission system, MWRA will supply the City on a maximum daily water volume basis, stated in millions of gallons per day as follows:

Maximum Daily Volume
10.0 million gallons

The City's withdrawals in excess of the maximum daily withdrawal stated above may be permitted only after written prior notification to MWRA and acceptance by MWRA. MWRA agrees that it will use its best efforts to supply the City with those quantities of water to meet its legitimate needs in excess of the maximum daily demand stated above.

3. Every five years, or in the event that revised circumstances regarding local demand should occur, the Parties agree to re-evaluate the appropriateness of the volumes to be supplied from the MWRA system under this Agreement, said re-evaluation to occur in collaboration with the three CVA communities, in recognition that an increase in maximum daily volumes may require modifications to flow control structures and entail capital investment, including but not limited to removing the existing 16-inch back-pressure-sustaining valves at the Route 21 valve chamber, or installation of a by-pass line, and redesigning the control system to prevent low pressure in the aqueduct under low flow conditions.
4. If the City determines that the volume designated in this Agreement to be supplied from the MWRA system is insufficient to meet the City's newly projected demand, the City may petition the MWRA to amend this Agreement pursuant to 360 C.M.R. 11.11.
5. The MWRA agrees to operate and maintain certain facilities necessary to comply with the treatment requirements of the SWTR and related provisions of the Massachusetts Drinking Water Regulations for the CVA communities as a whole. This includes the operation of the Brutsch Treatment Facility and the provision of two means of primary disinfection capable of inactivating *Cryptosporidium* necessary for the CVA communities as a whole to comply with the SWTR.
6. The City agrees that during the term it will monitor for all water quality parameters that are required by the DEP or the Environmental Protection Agency to be measured within the distribution system. The MWRA agrees to take responsibility for monitoring which is related to source water and treatment within its supply and transmission system.
7. The City agrees to assume responsibility for meeting certain requirements of the Lead and Copper Rule and related provisions of the Massachusetts Drinking Water Regulations. Specifically, the City agrees to:
 - a. Operate and maintain appropriate corrosion control facilities;

- b. Assume responsibility for any public notices or public education program required under the Lead and Copper Rule.
 - c. Assume responsibility for lead and copper monitoring at the tap; and
 - d. Assume responsibility for lead service line replacement, if required by DEP.
8. The City agrees to continue a user charge system and an accounting system which meets the Regulation's requirement to a) incorporate a uniform rate or an alternative structure which provides incentives for water conservation and/or is designed to ensure the affordability of water services to low and/or fixed income persons; and b) prohibit rate structures that incorporate descending or declining block rates.
9. In accordance with 360 C.M.R. 11.13, the City shall be required to develop and implement a full cost pricing system within twelve (12) months from the date when all communities (other than those communities that are subject to 360 C.M.R. 11.00) listed in section 8 (d) of the Act have imposed a full cost pricing system.
10. The MWRA shall bill the City for all water supplied under this Agreement under the applicable annual prevailing rate/assessment of the CVA system and rate structure set forth in Exhibit A and the MWRA agrees to make available the calculations, which provide the basis for the rates and charges for the City for the then current fiscal year.
11. If the City chooses not to sign a new water supply agreement at the expiration of the Term, the City agrees to pay a special charge covering a proportional share of debt service for facilities constructed in accordance with this Agreement for as long as MWRA incurs such debt service or until a negotiated buy-out agreement has been executed by the City and MWRA. In this event, the MWRA agrees to provide emergency back-up water supply to the City when necessary and in a manner consistent with existing laws, regulations and policies governing the provision of emergency supplies by the MWRA to a local body.
12. The City agrees that during the Term it shall continue the implementation of its current and proposed local demand management programs, including but not limited to participation in MWRA conservation programs, and distribution of MWRA-provided materials to all water users, and compliance with MWRA's regulations for city-wide leak detection and repair (360 C.M.R. 12.00).
13. Any dispute arising between the MWRA and the City concerning the calculation of the City's annual assessment shall be resolved in accordance with MWRA's Rate Basis Data Review and Dispute Resolution process. Any other dispute between MWRA and the City under terms of this Agreement shall be resolved in accordance with the dispute resolution process set forth at 360 CMR 11.14 and the administrative procedures set forth at 360 C.M.R. 1.00.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed
on this ____ day of _____, 2017 by their duly authorized representatives.

MASSACHUSETTS WATER RESOURCES AUTHORITY

By:

Frederick A. Laskey
Executive Director

CITY OF CHICOPEE

By:

Alfred E. Pinciak, Chairman,
Board of Water Commissioners

By:

Richard Grabiec, Clerk
Board of Water Commissioners

By:

Paul Depelteau, Commissioner
Board of Water Commissioners

By:

Jeffrey Neece, DPW Superintendent

By:

Richard J. Kos,
Mayor

EXHIBIT A

Calculations of CVA Rate Revenue Requirement

1. CVA Direct Expenses Identify and segregate all Waterworks operating costs attributable to the delivery of service via CVA. Costs are found in Transmission, Water Quality, and Metering/Monitoring cost centers. As new CVA facilities are brought on-line, their associated direct expenses will be added to this category.
2. Allocate Waterworks Indirect Expenses Allocate Waterworks Division non-operational costs (Director's Office, Planning, Watershed, etc.) by ratio of CVA cost center expenses to total Waterworks operational Expenses.
3. Allocate Authority Indirect Expenses Allocate other allocable Authority costs (management, insurance, reserves, retirement) by ratio of CVA direct Expenses to Waterworks direct expenses.
4. Debt Service Identify capital costs and debt issues to support CVA Capital investment program. Calculate debt service and ancillary capital costs to satisfy coverage test necessary to support debt issuance.
5. Total CVA Rate Revenue Requirement The sum of items 1, 2, 3, and 4.
6. CVA Rate Total rate revenue requirement divided by annual water volume from previous calendar year. Individual community charges are determined by its proportion of the total CVA demand from the previous calendar year multiplied by the total rate revenue requirement.

WATER SUPPLY CONTINUATION AGREEMENT

BETWEEN

THE MASSACHUSETTS WATER RESOURCES AUTHORITY

AND

SOUTH HADLEY FIRE DISTRICT NO. 1

This Water Supply Continuation Agreement ("Agreement") by and between the Massachusetts Water Resources Authority (the "MWRA") and the South Hadley Fire District No. 1 (the "District"), (hereinafter jointly referred to as the "Parties"), memorializes the agreement and understanding of the Parties regarding the arrangement whereby the MWRA will continue to supply water to the District and the District will purchase a portion of its water supply from the MWRA water supply system.

RECITALS

- R.1. The MWRA was created in 1984 by chapter 372 of the Acts of 1984 (the "Act") to operate, regulate, finance, and modernize the waterworks and sewerage systems serving the greater metropolitan Boston area. Operating pursuant to the terms of the Act the MWRA currently provides water supply and distribution services and wastewater collection and treatment services, to certain cities, towns and special service districts (the "Communities") within its service area.
- R.2. The MWRA desires to continue to provide safe and sufficient water supplies to the District and to provide system-wide assistance to help protect and conserve water supplies.
- R.3. Section 8 (d) of the Act permits the MWRA to enter into an arrangement to provide for the continued delivery of water to a Community if specified requirements are met.
- R.4. A regulation entitled "Continuation of Contract Water Supply", promulgated by the MWRA at 360 C.M.R. 11.00 and most recently revised on November 18, 1994, (the "Regulation") defines more specifically the requirements of section 8(d) of the Act and governs the continued delivery of water by the MWRA to the Communities which purchase water in accordance with contracts.
- R.5. The Chicopee Valley Aqueduct was built in 1947-1949 and designed to provide 23 MGD based upon a full Quabbin at 530 BCB, with a 36-inch wye installed to allow capacity to be increased by adding a second pipeline running parallel to the existing line.

- R.6. The District executed a contract with the Metropolitan District Commission (MDC) dated July 14, 1951 for the purchase of raw water from the Quabbin Reservoir through the Chicopee Valley Aqueduct which contract expired on January 1, 1998 and which assured the District that it could obtain a portion of its water supply from the MWRA system.
- R.7. On May 21, 1997, the MWRA Board of Directors voted to create a separate rate structure for the CVA communities which rate structure is set forth in Exhibit A.
- R.8. The District and MWRA subsequently executed new contract for the purchase of water from the MWRA reflecting the new rate structure effective January 1, 1998, which by its terms expired on December 31, 2007, and a successor contract, which by its terms expires on December 31, 2017.
- R.9. MWRA has assumed responsibility for providing a safe and sufficient supply of water for the CVA communities as a whole and is providing covered storage at Nash Hill, central monitoring and control, partial pipeline redundancy, and permanent disinfection facilities necessary for meeting the requirements of EPA's Surface Water Treatment Rule and Long Term 2 Enhanced Surface Water Treatment Rule (SWTR) and related provisions of Massachusetts Drinking Water Regulations.
- R.10. Construction of ultra-violet disinfection, and improvements and control modifications completed in 2007 as part as of the Chicopee Valley Aqueduct Pipeline Redundancy Project, were based on existing and projected demands substantially lower than 23 MGD and were intended to address the state and federal drinking water standards, to provide redundancy, and address under-pressurization concerns associated with low and average day demands.
- R.11. The District has assumed responsibility for meeting certain requirements of the Lead and Copper Rule and related provisions of Massachusetts Drinking Water Regulations. In particular, the District provides corrosion control to keep the District in compliance with the Lead and Copper Rule.
- R.12. The District, pursuant to the Regulation, has requested from the MWRA that its water supply be continued and has submitted a continuation request and a Supplementary Report including a supply analysis, a demand analysis, and a plan for water conservation and demand management pursuant to Section 11.08 of the Regulation.
- R.13. The District has adopted a local drought restriction ordinance.
- R.14. The District has submitted a detailed description of local user charge systems and accounting systems which meet the Regulations' requirement for conservation based rates.

- R.15. Based upon its review of the submittals described in recital paragraphs R.12, R.13 and R.14 above, the MWRA finds that the applicable requirements of section 8(d) of the Act have been met as follows:
- (1) the safe yield of the watershed system as of the date of this contract and as projected for the term hereof, is sufficient to meet the projected demand of the District;
 - (2) No existing or potential water supply source for the District has been abandoned;
 - (3) Effective demand management measures have been developed by the District;
 - (4) A local water supply source feasible for development has not been identified by either the District or the Department of Environmental Protection (the "DEP"); and
 - (5) A water use survey has been completed which identifies all users within the District that consume in excess of twenty million gallons a year.
- R.16. Chapter 35 of the Acts of 1957 provides that the District and South Hadley Fire District No. 2 may, subject to such terms and conditions as may be agreed upon by the water commissioners of the two districts, provide a supply of water to each other, and in the past, the District has provided water to South Hadley Fire District No. 2 in emergencies.
- R.17. The District's pre-existing legal authority to supply South Hadley Fire District No.2 was not repealed by the Act.
- R.18. The District has in the past had discussions with South Hadley Fire District No. 2 regarding a merger and may in the future have further discussions of the Districts becoming one entity. Regarding water-supply, the characteristics of the merged entity may take varying forms, including but not limited to: 1) the geographic area now supplied by MWRA and comprising District No. 1 would continue to receive MWRA water and the geographic area now supplied by District No. 2 would continue to be served by local wells; or 2) the geographic area supplied by MWRA would be expanded to include the area now served by South Hadley Fire District No. 2. It is understood by the Parties that if the merger occurred and the geographic area served by MWRA was expanded and approved under MWRA Policy OP#10, Admission of New Community, the additional water supplied will not be considered part of the approved withdrawal under this Agreement, and instead, a new Agreement would be entered into.
- R.19. Chapter 188 of the Acts of 2010 provides that each of the communities of Chicopee, the District, and Wilbraham may provide water for new single service connections by extending their respective water supply systems to properties in other communities that are located contiguous to, or in the vicinity of, their respective local community-owned water supply pipelines that extend directly from the Chicopee Valley Aqueduct.
- R.20. The MWRA and the District wish to formalize their rights and obligations regarding the supply of water to the District and therefore enter into this Agreement.

NOW, THEREFORE, in consideration of the foregoing premises and mutual promises contained herein and for other good and valuable consideration, the MWRA and the District agree to the following:

1. The term ("Term") of this Agreement shall be ten (10) years beginning on January 1, 2018 and ending at midnight on December 31, 2027.
2. The MWRA shall during the Term provide the District, under its present geographic bounds, with water on a maximum annual water volume basis, stated in millions of gallons, as follows:

Maximum Annual Volume
600 million gallons

Additionally, consistent with the hydraulic capabilities of MWRA's transmission system, MWRA will supply the District on a maximum daily water volume basis, stated in millions of gallons per day as follows:

Maximum Daily Volume
3.0 million gallons

The District's withdrawals in excess of the maximum daily withdrawal stated above may be permitted only after prior written notification to MWRA and acceptance by MWRA. MWRA agrees that it will use its best efforts to supply the District with those quantities of water to meet its legitimate needs in excess of the maximum daily demand stated above.

3. Every five years, or in the event that revised circumstances regarding local demand should occur, the Parties agree to re-evaluate the appropriateness of the volumes to be supplied from the MWRA system under this Agreement, said re-evaluation to occur in collaboration with the three CVA communities, in recognition that an increase in maximum daily volumes may require modifications to flow control structures and entail capital investment, including but not limited to removing the existing 16-inch back-pressure-sustaining valves at the Route 21 valve chamber, or installation of a by-pass line, and redesigning the control system to prevent low pressure in the aqueduct under low flow conditions.
3. If the District determines that the volume designated in this Agreement to be supplied from the MWRA system is insufficient to meet the District's projected demand, the District may petition the MWRA to amend this Agreement pursuant to 360 C.M.R. 11.11, provided however, that the volumes designated in this Agreement are based on the current geographic bounds of the District and are not based on a merger of the District with South Hadley Fire District #2.
4. The MWRA agrees to operate and maintain certain facilities necessary to comply with the treatment requirements of the SWTR and related provisions of Massachusetts

Drinking Water Regulations for the CVA communities as a whole. This includes the operation of the Brutsch Treatment Facility that provides for two means of primary disinfection capable of inactivating *Cryptosporidium* necessary for the CVA communities as a whole to comply with the SWTR.

5. The District agrees that during the term it will monitor for all water quality parameters that are required by the DEP or the Environmental Protection Agency to be measured within the distribution system. The MWRA agrees to take responsibility for monitoring which is related to source water and treatment within its supply and transmission system.
6. The District agrees to assume responsibility for meeting certain requirements of the Lead and Copper Rule and related provisions of the Massachusetts Drinking Water Regulations. Specifically, the District agrees to:
 - a. Operate and maintain appropriate corrosion control facilities;
 - b. Assume responsibility for any public notices or public education program required under the Lead and Copper Rule.
 - c. Assume responsibility for lead and copper monitoring at the tap; and
 - d. Assume responsibility for lead service line replacement, if required by DEP.
7. The District agrees to continue a user charge system and an accounting system which meets the Regulation's requirement to a) incorporate a uniform rate or an alternative structure which provides incentives for water conservation and/or is designed to ensure the affordability of water services to low and/or fixed income persons; and b) prohibit rate structures that incorporate descending or declining block rates.
8. In accordance with 360 C.M.R. 11.13, the District shall be required to develop and implement a full cost pricing system within twelve (12) months from the date when all communities (other than those communities that are subject to 360 C.M.R. 11.00) listed in section 8 (d) of the Act have imposed a full cost pricing system.
9. The MWRA shall bill the District, and the District shall pay to the MWRA charges for all water supplied under this Agreement under the applicable annual prevailing rate/assessment of the CVA system and rate structure set forth in Exhibit A and the MWRA agrees to make available the calculations which provide the basis for the rates and charges for the District for the then current fiscal year.
10. If the District and South Hadley Fire District No. 2 merge in the future, the MWRA would require a new Water Supply Agreement redefining the nature of MWRA service and the volume of water to be supplied to the merged district. A determination of whether or not OP#10 and its entrance fee provisions would be triggered will be made based on consideration of the specific facts of the proposed merger.
10. If the District chooses not to sign a new water supply agreement at the expiration of the Term, the District agrees to pay a special charge covering a proportional share of debt service for facilities constructed in accordance with this and previous Agreement for as

long as MWRA incurs such debt service or until a negotiated buy-out agreement has been executed by the District and MWRA. In this event, the MWRA agrees to provide emergency back-up water supply to the District when necessary and in a manner consistent with existing laws, regulations and policies governing the provision of emergency supplies by the MWRA to a local body.

11. The District agrees that during the Term it shall continue the implementation of its current and proposed local demand management programs, including but not limited to participation in MWRA conservation programs, and distribution of MWRA-provided materials to all water users, and compliance with MWRA's regulations for town-wide leak detection and repair (360 C.M.R. 12.00).
12. Any dispute arising between the MWRA and the District concerning the calculation of the District's annual assessment shall be resolved in accordance with MWRA's Rate Basis Data Review and Dispute Resolution process. Any other dispute between MWRA and the District under terms of this Agreement shall be resolved in accordance with the dispute resolution process set forth at 360 CMR 11.14 and the administrative procedures set forth at 360 C.M.R. 1.00.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed on this ____ day of _____, 2017 by their duly authorized representatives.

MASSACHUSETTS WATER RESOURCES AUTHORITY

By:

Frederick A. Laskey
Executive Director

SOUTH HADLEY FIRE DISTRICT NO. 1

John Mikuszewski
Chairman, Board of Water Commissioners

David Daly,
Water Commissioner

William Schenker,
Water Commissioner

EXHIBIT A

Calculations of CVA Rate Revenue Requirement

1. CVA Direct Expenses Identify and segregate all Waterworks operating costs attributable to the delivery of service via CVA. Costs are found in Transmission, Water Quality, and Metering/Monitoring cost centers. As new CVA facilities are brought on-line, their associated direct expenses will be added to this category.
2. Allocate Waterworks Indirect Expenses Allocate Waterworks Division non-operational costs (Director's Office, Planning, Watershed, etc.) by ratio of CVA cost center expenses to total Waterworks operational Expenses.
3. Allocate Authority Indirect Expenses Allocate other allocable Authority costs (management, insurance, reserves, retirement) by ratio of CVA direct Expenses to Waterworks direct expenses.
4. Debt Service Identify capital costs and deb issues to support CVA Capital investment program. Calculate debt service and ancillary capital costs to satisfy coverage test necessary to support debt issuance.
5. Total CVA Rate Revenue Requirement The sum of items 1, 2, 3, and 4.
6. CVA Rate Total rate revenue requirement divided by annual water volume from previous calendar year. Individual community charges are determined by its proportion of the total CVA demand from the previous calendar year multiplied by the total rate revenue requirement.

EXHIBIT A

Calculations of CVA Rate Revenue Requirement

1. CVA Direct Expenses Identify and segregate all Waterworks operating costs attributable to the delivery of service via CVA. Costs are found in Transmission, Water Quality, and Metering/Monitoring cost centers. As new CVA facilities are brought on-line, their associated direct expenses will be added to this category.
2. Allocate Waterworks Indirect Expenses Allocate Waterworks Division non-operational costs (Director's Office, Planning, Watershed, etc.) by ratio of CVA cost center expenses to total Waterworks operational Expenses.
3. Allocate Authority Indirect Expenses Allocate other allocable Authority costs (management, insurance, reserves, retirement) by ratio of CVA direct Expenses to Waterworks direct expenses.
4. Debt Service Identify capital costs and debt issues to support CVA Capital investment program. Calculate debt service and ancillary capital costs to satisfy coverage test necessary to support debt issuance.
5. Total CVA Rate Revenue Requirement The sum of items 1, 2, 3, and 4.
6. CVA Rate Total rate revenue requirement divided by annual water volume from previous calendar year. Individual community charges are determined by its proportion of the total CVA demand from the previous calendar year multiplied by the total rate revenue requirement.

WATER SUPPLY CONTINUATION AGREEMENT

BETWEEN

THE MASSACHUSETTS WATER RESOURCES AUTHORITY

AND

THE TOWN OF WILBRAHAM

This Water Supply Continuation Agreement ("Agreement") by and between the Massachusetts Water Resources Authority (the "MWRA") and the Town of Wilbraham (the "Town"), (hereinafter jointly referred to as the "Parties"), memorializes the agreement and understanding of the Parties regarding the arrangement whereby the MWRA will continue to supply water to the Town and the Town will purchase a portion of its water supply from the MWRA water supply system.

RECITALS

- R.1. MWRA was created in 1984 by chapter 372 of the Acts of 1984 (the "Act") to operate, regulate, finance, and modernize the waterworks and sewerage systems serving the greater metropolitan Boston area. Operating pursuant to the terms of the Act, the MWRA currently provides water supply and distribution services and wastewater collection and treatment services, to certain cities, towns and special service districts (the "Communities") within its service area.
- R.2. The MWRA desires to continue to provide safe and sufficient water supplies to the Town and to provide system-wide assistance to help protect and conserve water supplies.
- R.3. Section 8 (d) of the Act permits the MWRA to enter into an arrangement to provide for the continued delivery of water to a Community if specified requirements are met.
- R.4. A regulation entitled "Continuation of Contract Water Supply", promulgated by the MWRA at 360 C.M.R. 11.00 and most recently revised on November 18, 1994, (the "Regulation") defines more specifically the requirements of section 8(d) of the Act and

governs the continued delivery of water by the MWRA to the communities purchasing water from the MWRA.

- R.5. The Chicopee Valley Aqueduct was built in 1947-1949 and designed to provide 23 MGD based upon a full Quabbin at 530 BCB, with a 36-inch wye installed to allow capacity to be increased by adding a second pipeline running parallel to the existing line.
- R.6. The Town and the Metropolitan District Commission (MDC) executed a contract dated February 24, 1948 for the purchase of raw water from the Quabbin Reservoir through the Chicopee Valley Aqueduct which contract expired on September 15, 2000 and which assured the Town that it could obtain a portion of its water supply from the MWRA system.
- R.7. On May 21, 1997 the MWRA Board of Directors voted to create a separate rate structure for the CVA communities, which rate structure is set forth in Exhibit A.
- R.8. The Town and MWRA subsequently executed a new contract for the purchase of water from the MWRA, reflecting the new rate structure effective January 1, 1998 which by its terms expired on December 31, 2007 and a successor contract, which by its terms expires on December 31, 2017.
- R.9. MWRA has assumed responsibility for providing a safe and sufficient supply of water for the CVA communities as a whole and is providing covered storage, central monitoring and control, partial pipeline redundancy, and permanent disinfection facilities necessary for meeting the requirements of EPA's Surface Water Treatment Rule and the Long Term 2 Enhanced Surface Water Treatment Rule ("SWTR") and related provisions of Massachusetts Drinking Water Regulations.
- R.10. Construction of ultra-violet disinfection, and improvements and control modifications completed in 2007 as part as of the Chicopee Valley Aqueduct Pipeline Redundancy Project, were based upon existing and projected demands substantially lower than 23 MGD and were intended to address both state and federal drinking water standards, to provide redundancy, and to address under-pressurization concerns associated with low and average day demands.
- R.11. The Town has currently assumed responsibility for meeting certain requirements of the Lead and Copper Rule and related provisions of Massachusetts Drinking Water Regulations. In particular, the Town provides corrosion control to keep the Town in compliance with the Lead and Copper Rule.
- R.12. The Town, pursuant to the Regulation, has requested from the MWRA that its water supply be continued and has submitted a continuation request and a Supplementary Report including a supply analysis, a demand analysis, and a plan for water conservation and demand management pursuant to Section 11.08 of the Regulation.

- R.13. The Town has adopted a drought by-law and contingency plan to reduce water in case of drought or emergency.
- R.14. The Town has submitted a detailed description of the local user charges system and accounting system which meet the Regulation's requirement for conservation based rates.
- R.15. Based upon its review of the submittals described in recital paragraphs R.12 and R.13 above, the MWRA finds that the applicable requirements of section 8(d) of the Act have been met as follows:
- (1) the safe yield of the watershed system as of the date of this contract and as projected for the term hereof, is sufficient to meet the projected demand of the Town;
 - (2) No existing or potential water supply source for the Town has been abandoned;
 - (3) Effective demand management measures have been developed by the Town;
 - (4) A local water supply source feasible for development has not been identified by either the Town or the Department of Environmental Protection (the "DEP"); and
 - (5) A water use survey has been completed which identifies all users within the Town that consume in excess of twenty million gallons a year.
- R.16. Chapter 188 of the Acts of 2016 provides that each of the communities of Chicopee, the South Hadley Fire District, and the Town may provide water for new single service connections by extending their respective water supply systems to properties in other communities that are located contiguous to, or in the vicinity of, their respective local community-owned water supply pipelines that extend directly from the Chicopee Valley Aqueduct.
- R.17. The MWRA and the Town wish to formalize their rights and obligations regarding the supply of water to the Town and therefore enter into this Agreement.

NOW, THEREFORE, in consideration of the foregoing premises and mutual promises contained herein and for other good and valuable consideration, the MWRA and the Town agree to the following:

1. The term ("Term") of this Agreement shall be ten (10) years beginning on January 1, 2018 and ending at midnight on December 31, 2027.
2. The MWRA shall during the Term provide the Town with water on a maximum annual water volume basis, stated in millions of gallons, as follows:

Maximum Annual Volume
500 million gallons

Additionally, consistent with the hydraulic capabilities of MWRA's transmission system, MWRA will supply the City on a maximum daily water volume basis, stated in millions of gallons per day as follows:

Maximum Daily Volume

3.2 million gallons

The Town's withdrawals in excess of the maximum daily withdrawal stated above may be permitted only after prior written notification to MWRA and acceptance by MWRA. MWRA agrees that it will use its best efforts to supply the Town with those quantities of water to meet its legitimate needs in excess of the maximum daily demand stated above.

3. Every five years, or in the event that revised circumstances regarding local demand should occur, the Parties agree to re-evaluate the appropriateness of the volumes to be supplied from the MWRA system under this Agreement, said re-evaluation to occur in collaboration with the three CVA communities, in recognition that an increase in maximum daily volumes may require modifications to flow control structures and entail capital investment, including but not limited to removing the existing 16-inch back-pressure-sustaining valves at the Route 21 valve chamber, or installation of a by-pass line, and redesigning the control system to prevent low pressure in the aqueduct under low flow conditions.
4. If the Town determines that the volume designated in this Agreement to be supplied from the MWRA system is insufficient to meet the Town's newly projected demand, the Town may petition the MWRA to amend this Agreement pursuant to 360 C.M.R. 11.11.
5. The MWRA agrees to operate and maintain certain facilities necessary to comply with the treatment requirements of the SWTR and related provisions of Massachusetts Drinking Water Regulations for the CVA communities as a whole. This includes the operation of the Brutsch Treatment Facility that provides for two means of primary disinfection capable of inactivating *Cryptosporidium* necessary for the CVA communities as a whole to comply with the SWTR.
6. The Town agrees that during the term it will monitor for all water quality parameters that are required by the DEP or the Environmental Protection Agency to be measured within the distribution system. The MWRA agrees to take responsibility for monitoring which is related to source water and treatment within its supply and transmission system.
7. The Town agrees to assume responsibility for meeting certain requirements of the Lead and Copper Rule and related provisions of the Massachusetts Drinking Water Regulations. Specifically, the Town agrees to:
 - a. Operate and maintain appropriate corrosion control facilities;

- b. Assume responsibility for any public notices or public education program required under the Lead and Copper Rule.
 - c. Assume responsibility for lead and copper monitoring at the tap; and
 - d. Assume responsibility for lead service line replacement, if required by DEP.
8. The Town agrees to continue a user charge system and an accounting system which meets the Regulation's requirement to a) incorporate a uniform rate or an alternative structure which provides incentives for water conservation and/or is designed to ensure the affordability of water services to low and/or fixed income persons; and b) prohibit rate structures that incorporate descending or declining block rates.
9. In accordance with 360 C.M.R. 11.13, the Town shall be required to develop and implement a full cost pricing system within twelve (12) months from the date when all communities (other than those communities that are subject to 360 C.M.R. 11.00) listed in section 8 (d) of the Act have imposed a full cost pricing system.
10. The MWRA shall bill the Town, and the Town shall pay to the MWRA charges for all water supplied under this Agreement under the applicable annual prevailing rate/assessment of the CVA system and rate structure set forth in Exhibit A, attached, and the MWRA agrees to make available the calculations which provide the basis for the rates and charges for the Town for the then current fiscal year.
11. If the Town chooses not to sign a new water supply agreement at the expiration of this term, the Town agrees to pay a special charge covering a proportional share of debt service for facilities constructed in accordance with this and previous Agreements for as long as MWRA incurs such debt service or until a negotiated buy-out agreement has been executed by the Town and MWRA. In this event, the MWRA agrees to provide emergency back-up water supply to the Town when necessary and in a manner consistent with existing laws, regulations and policies governing the provision of emergency supplies by the MWRA to a local body.
12. The Town agrees that during the Term it shall continue the implementation of its current and proposed local demand management programs, including but not limited to participation in MWRA conservation programs, and distribution of MWRA-provided materials to all water users, and compliance with MWRA's regulations for town-wide leak detection and repair (360 C.M.R. 12.00).
13. Any dispute arising between the MWRA and the Town concerning the calculation of the Town's annual assessment shall be resolved in accordance with MWRA's Rate Basis Data Review and Dispute Resolution process. Any other dispute between MWRA and the Town as to the terms of this Agreement shall be resolved in accordance with the dispute resolution process set forth at 360 C.M.R. 11.14 and the administrative procedures set forth at 360 C.M.R. 1.00.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed
on this ____ day of _____, 2017 by their duly authorized representatives.

MASSACHUSETTS WATER RESOURCES AUTHORITY

By:

Frederick A. Laskey
Executive Director

TOWN OF WILBRAHAM

By:

James Dunbar,
Water Commissioner

Mary McCarthy,
Water Commissioner

Thomas Pilarcik,
Water Commissioner

EXHIBIT A

Calculations of CVA Rate Revenue Requirement

1. CVA Direct Expenses Identify and segregate all Waterworks operating costs attributable to the delivery of service via CVA. Costs are found in Transmission, Water Quality, and Metering/Monitoring cost centers. As new CVA facilities are brought on-line, their associated direct expenses will be added to this category.
2. Allocate Waterworks Indirect Expenses Allocate Waterworks Division non-operational costs (Director's Office, Planning, Watershed, etc.) by ratio of CVA cost center expenses to total Waterworks operational Expenses.
3. Allocate Authority Indirect Expenses Allocate other allocable Authority costs (management, insurance, reserves, retirement) by ratio of CVA direct Expenses to Waterworks direct expenses.
4. Debt Service Identify capital costs and debt issues to support CVA Capital investment program. Calculate debt service and ancillary capital costs to satisfy coverage test necessary to support debt issuance.
5. Total CVA Rate Revenue Requirement The sum of items 1, 2, 3, and 4.
6. CVA Rate Total rate revenue requirement divided by annual water volume from previous calendar year. Individual community charges are determined by its proportion of the total CVA demand from the previous calendar year multiplied by the total rate revenue requirement.


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: December 20, 2017
SUBJECT: Northern Intermediate High Section 110 – Reading and Woburn
Albanese D&S, Inc.
Contract 7471, Change Order 14

COMMITTEE: Water Policy and Oversight

INFORMATION
 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 14 to Contract 7471, Northern Intermediate High Section 110 – Reading and Woburn, with Albanese D&S, Inc., for an amount not to exceed \$300,000.00, increasing the contract amount from \$11,883,108.97 to \$12,183,108.97, 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, the Contractor has been constructing 8,800 linear feet of 36-inch water transmission main in the City of Woburn and the Town of Reading. Construction is approximately 98% complete.

This Change Order

Change Order 14 consists of the following item:

Instrumentation and Equipment Inside Town of Reading Control Valve Vaults

Not to Exceed \$300,000

The contract documents require the Contractor to install control valve vaults downstream of the new MWRA Meters 88 and 89 in the Town of Reading. These new control valves will maintain flow and water elevation for the Town of Reading water system and will replace Reading's existing meter/control valve vault located at Border Road. The vaults will be turned over to the Town of Reading at the completion of the contract. In preparation of turnover of the newly constructed valve vaults, Town of Reading Municipal Officials informed MWRA that certain additional design components including heat, dehumidification, dewatering and ventilation would be required to be added to these vaults prior to turnover. As a result, it is necessary to install sampling ports with instrumentation, vault heaters, dehumidification, blower and associated vent pipe, sump pumps and associated piping to a precast drywell manhole outside the structure, intrusion alarms and high illumination lighting inside the vault as a condition of the Town of Reading's acceptance of these new vaults.



Crane lowering valve vault into place at Leach park



Above ground meter cabinets on Louanis Drive



Town of Reading New Control Valve vault downstream of meter

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 \$300,000 for this additional work with no increase in contract term. Staff and the Contractor are currently

egotiating the final cost of this item. The work has not begun.

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	\$661,177.96	0 Days	10/19/17
Change Order 13*	\$75,133.78	0 Days	11/29/17
Change Order 14	<u>\$300,000.00</u>	<u>0 Days</u>	Pending
Total of Change Orders:	\$2,295,108.97	0 Days	
Adjusted Contract:	\$12,183,108.97	808 Days	

*Approved under delegated authority

If Change Order 14 is approved, the cumulative value of all change orders to this contract will be \$2,295,108.97 or 23% of the original contract amount. Work on this contract is approximately 98.5% complete.

BUDGET/FISCAL IMPACT:

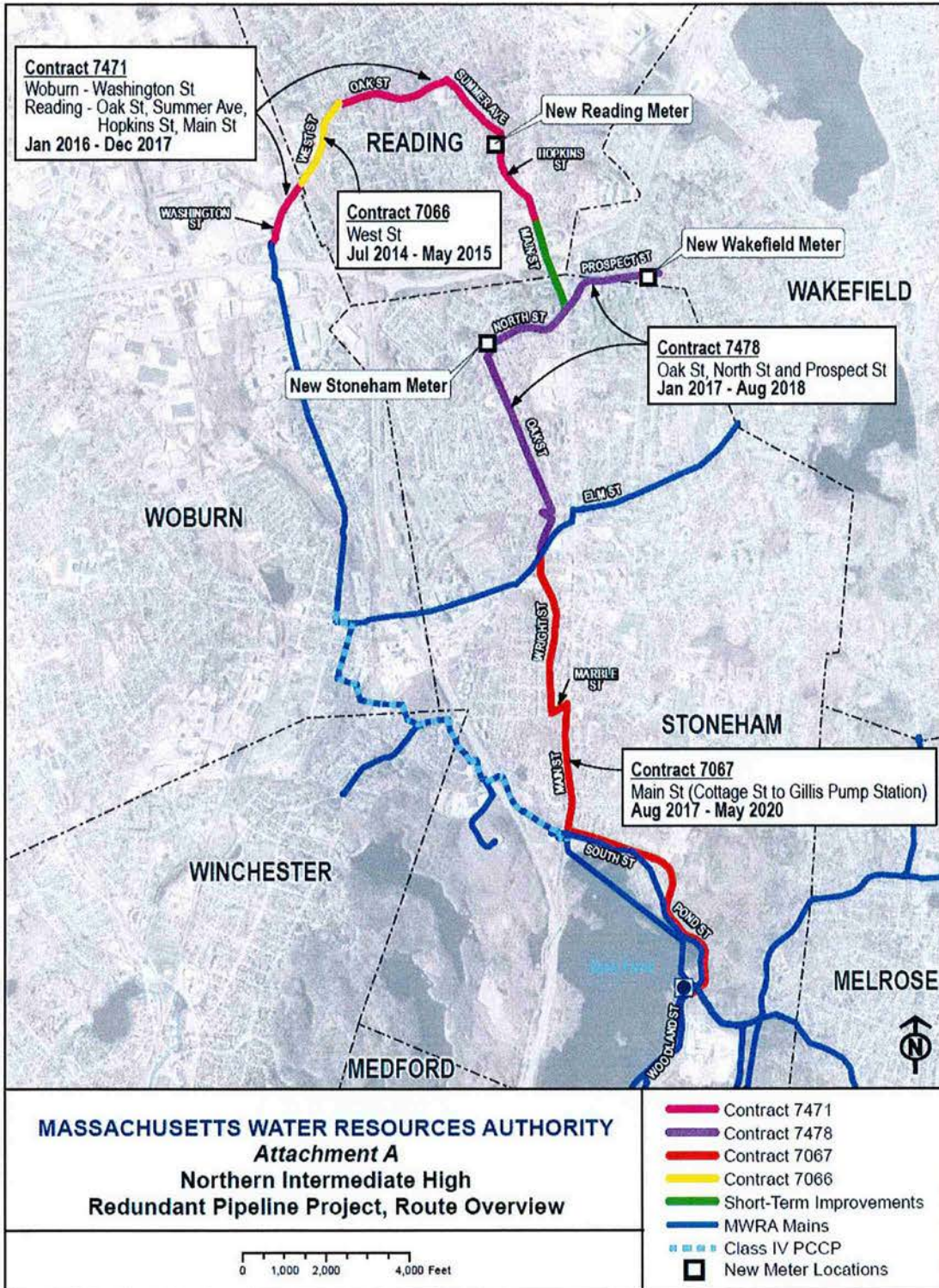
The FY18 Capital Improvement Program budget includes \$11,988,197.00 for Contract 7471. Including this change order for \$300,000.00, the adjusted subphase total is \$12,183,108.97 or \$194,911.97 over budget. This amount will be covered within the five-year CIP spending cap.

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.

ATTACHMENT:

Figure 1: Map of Northern Intermediate High Redundant Pipeline Projects



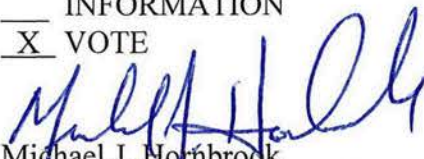
STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: December 20, 2017
SUBJECT: Northern Intermediate High Section 110 – Stoneham and Wakefield
Albanese D&S, Inc.
Contract 7478, Change Order 5

COMMITTEE: Water Policy and Oversight

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

 INFORMATION
 X VOTE


Michael J. Hornbrock
Chief Operating Officer

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Change Order 5 to Contract 7478, Northern Intermediate High Section 110 – Stoneham and Wakefield, with Albanese D&S, Inc., for a lump sum amount of \$424,646.00, increasing the contract amount from \$17,921,243.28 to \$18,345,889.28, and extending Milestone 1 by 139 Calendar Days, with no increase in the overall contract term.

Further, to authorize the Executive Director to approve additional change orders as may be needed to Contract 7478 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. Under Contract 7478, the

Contractor is constructing 7,800 linear feet of 48-inch water transmission main in the Town of Stoneham and 2,600 linear feet of 12-inch and 16-inch diameter water transmission mains to Wakefield Meter 96.

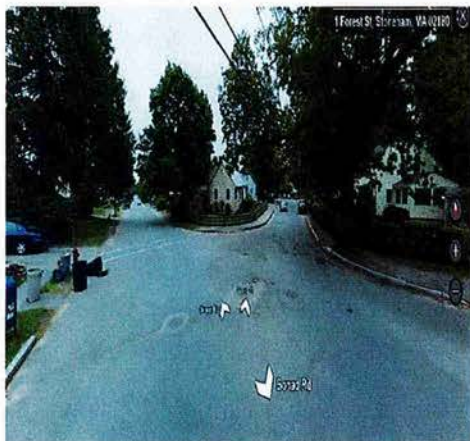
This Change Order

Change Order 5 consists of the following two items:

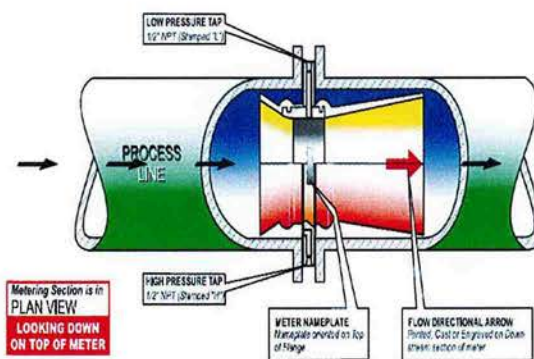
New MWRA Water Revenue Meter and Vault

\$424,646.00

The Authority began negotiating a Memorandum of Agreement (MOA) with the Town of Stoneham during the design phase of this contract; however these negotiations were not finalized, and the MOA was not executed, until after the issuance of the construction Notice to Proceed. The MOA included the construction of a new 8-inch MWRA water revenue meter (Meter 122) including a concrete vault, associated electrical connections, and modifications to Town of Stoneham water mains at Forest Street and Bonad Road. The new meter design is required in accordance with the terms of the MOA. This new system will improve water distribution and deliver treated water faster on the north side of the Town, provide further redundancy of water supply to the Town, and increase water pressure for firefighting demand in the area. The requirement to construct the new revenue Meter 122 was not included in the original design, but is now required in order to fulfill the terms of the executed MOA.



Proposed New Meter Location at the intersection of Forest Street and Bonad Road



Proposed Venturi Meter

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 a lump sum amount of \$424,646 for this additional work with no increase in contract term. This work has not begun.

Extend Milestone 1 by 139 Calendar Day

139 Calendar Days

The contract completion date for this project is September 14, 2018, with an interim completion date of January 12, 2018 for Milestone 1. Milestone 1 requires the completion of Section 110, 36-inch and 48-inch water pipe and Section 112, 16-inch water pipe to Meter 96, valves, pre-cast chambers, air valve, blow off assemblies and all appurtenances in Stoneham, from the connection to Section 89B near

Cottage Street and Lindenwood Road to the connection to the existing 36-inch Section 110 water pipe at the intersection of Main Street and North Street in Stoneham. The additional meter construction is approximately two months of additional work. However, the Town of Stoneham winter moratorium is December 1st through April 1st. A schedule analysis based on the assumption that the meter work cannot be performed during the winter moratorium results in a 139 calendar day extension to Milestone 1 from January 12, 2018 to May 31, 2018. The overall contract completion date remains the same at September 14, 2018.

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 there is no cost for the Milestone extension.

CONTRACT SUMMARY:

	<u>Amount</u>	<u>Time</u>	<u>Dated</u>
Original Contract:	\$17,817,999.00	610 Days	01/12/17
Change Orders:			
Change Order 1*	\$48,394.28	0 Days	06/07/17
Change Order 2*	\$20,000.00	0 Days	10/02/17
Change Order 3*	\$20,000.00	0 Days	10/16/17
Change Order 4*	\$14,850.00	0 Days	10/30/17
Change Order 5	<u>\$424,646.00</u>	<u>0 Days</u>	Pending
Total of Change Orders:	\$527,890.28	0 Days	
Adjusted Contract:	\$18,345,889.28	610 Days	

*Approved under delegated authority

If Change Order 5 is approved, the cumulative value of all change orders to this contract will be \$527,890.28 or 3% of the original contract amount. Work on this contract is approximately 69.2% complete.

BUDGET/FISCAL IMPACT:

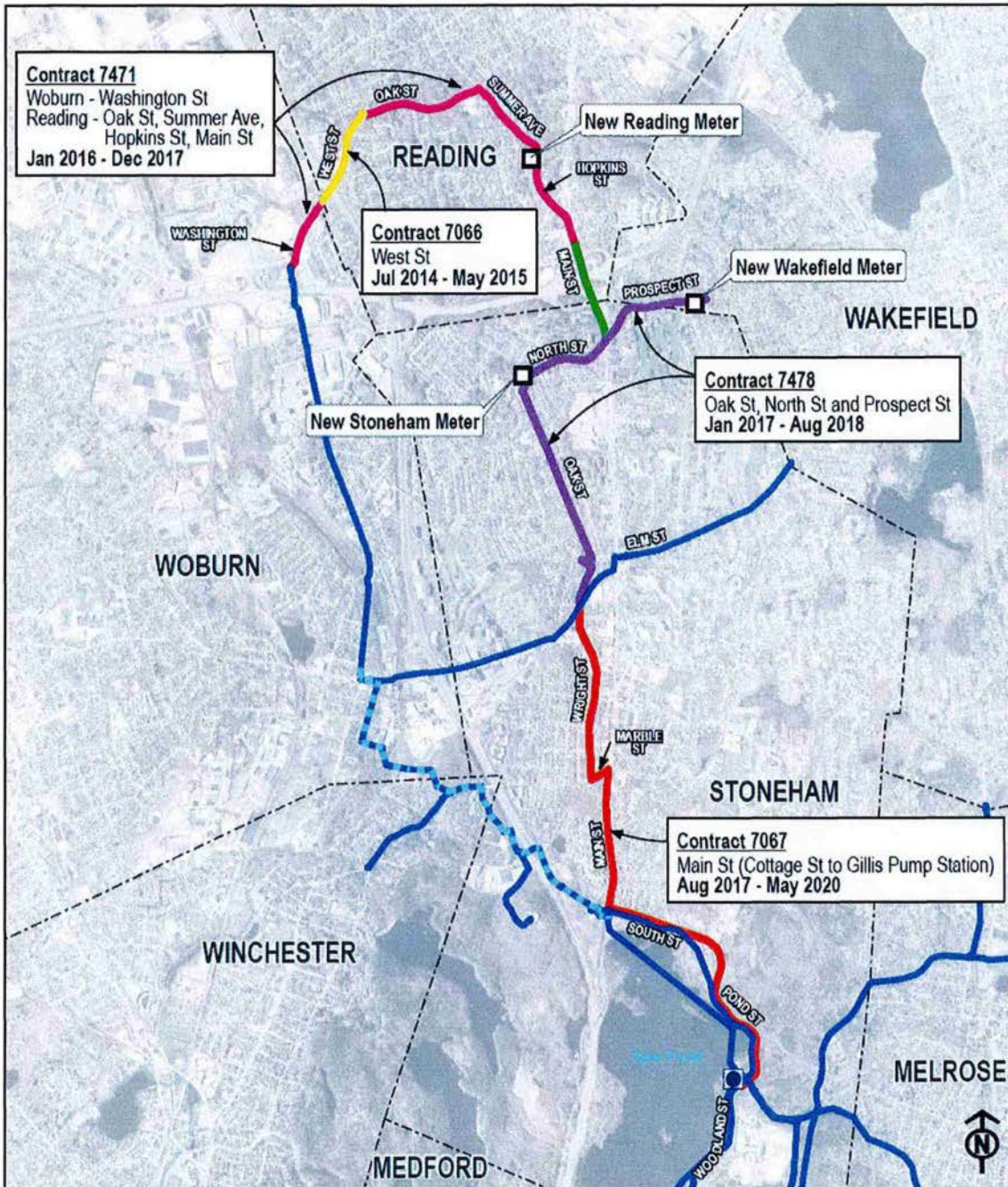
The FY18 Capital Improvement Program budget includes \$17,817,999 for Contact 7478. Including this change order for \$424,646, the adjusted subphase total is \$18,345,889.28 or \$527,890.28 over budget. This amount will be included within the five-year CIP spending cap.

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.

ATTACHMENT:

Figure 1: Map of Northern Intermediate High Redundant Pipeline Projects



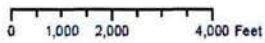
Contract 7471
 Woburn - Washington St
 Reading - Oak St, Summer Ave,
 Hopkins St, Main St
 Jan 2016 - Dec 2017

Contract 7066
 West St
 Jul 2014 - May 2015

Contract 7478
 Oak St, North St and Prospect St
 Jan 2017 - Aug 2018

Contract 7067
 Main St (Cottage St to Gillis Pump Station)
 Aug 2017 - May 2020

MASSACHUSETTS WATER RESOURCES AUTHORITY
Attachment A
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

5/15/2017 - 11:26:08



MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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

PERSONNEL & COMPENSATION COMMITTEE MEETING

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

to be held on

Wednesday, December 20, 2017

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

Time: Immediately following Water Comm.

AGENDA

A. Approvals

1. Revisions to Management Policy for Staff Appointments
2. PCR Amendment – December 2017
3. Appointment of Senior Program Manager, SCADA Engineering
4. Appointment of Project Manager, Inspections, TRAC

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the
Personnel and Compensation Committee

November 15, 2017

A meeting of the Personnel and Compensation Committee was held on November 15, 2017 at the Authority headquarters in Charlestown. Chair Wolowicz presided. Present from the Board were Messrs. Blackmon, Carroll, Flanagan, Foti, Peña, Vitale and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Michele Gillen, Andrea Murphy and Bonnie Hale. The meeting was called to order at 12:10 p.m.

Approvals

*Appointment of Program Manager, SCADA

The Committee recommended approval of the appointment of Mr. David Goyette (ref. agenda item A.1).


*Appointment of Senior Monitoring and Control Engineer, SCADA

The Committee recommended approval of the appointment of Mr. Carl Chin (ref. agenda item A.2).

The meeting adjourned at 12:15 p.m.

* Approved as recommended at November 15, 2017 Board of Directors meeting.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: December 20, 2017
SUBJECT: Revisions to Management Policy for Staff Appointments

COMMITTEE: Personnel and Compensation

INFORMATION
 VOTE

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


Michele S. Gillen
Director Administration

At the October 2017 Board meeting, staff presented a recommendation to amend the management policies of the Board of Directors to increase the salary threshold for staff appointments requiring Board approval. At the Board's request, staff have completed an analysis of the impact of that change and have a revised amendment for presentation and 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) to approve the appointments of employees based on specific position classification levels while eliminating the annual salary level threshold required for Board approval. 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.

The original intent of this policy was to ensure that appointments of management and higher level bargaining unit positions received appropriate review and approval by the Board. The threshold was originally established at \$65,000 and was increased to \$85,000 in 2007. At \$65,000, 321 positions (26% of all filled positions) were subject to board approval. When the threshold was increased in 2007, there were 272 positions (22% of all filled positions) requiring Board approval. Also in 2007, specific position classifications were included for Board approval. Given the inflationary impact that has occurred since 2007, the Board is now required to approve many appointments of lower level bargaining unit positions which are above the current threshold. In fact, there are currently 548 positions (48% of all filled positions) that now require Board approval.

Staff now recommend that it forego establishing an increased annual salary threshold as the number of positions requiring Board approval will continue to increase due to inflation. Staff recommend that, moving forward, the Board approve appointments based on established position classifications only. The position classification levels would be all non-union positions, all positions in Unit 6 in job grade 12 or higher, and all positions in Unit 9 at a job grade 29 or higher.

Staff believe that this new policy will ensure the approval and review of all non-union positions as well as all middle and upper management level positions classified in the Unit 6 and Unit 9 collective bargaining units, and will eliminate the need to continue to increase the salary threshold in the future. These positions are listed in Attachment B.

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 Classification

Attachment A

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 positions which are in the non-union classification structure or grade 12 and above of the Unit 6 classification structure or grade 29 and above 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.

Attachment B

Titles Subject to Approval for Staff Appointments
Based on Classification

Unit 6 Titles	Grade
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
Program Manager	12
Shift Operations Manager	12
Sr Systems Manager	12
Systems Administrator III	12
Warehouse Manager	12
Work Coordination Center Mgr	12
Accounting Manager	13
Assets Manager	13
Assist Manger 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, Finance	13
Manager, Operations Admin	13
Manager, Risk Management	13
Manager, Vehicle Maintenance	13
Manager, Facilities Mgmt	13
Materials Manager	13
Network & Systems Manager	13
Payroll Manager	13
Sr Program Manager	13
Sr Shift Manager	13
Sr Staff Counsel	13
Unit 9 Titles	Grade
Program Manager	29
Regional Manager	29
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
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, IT Security, Arch & Eng	14
Manager, Maintenance	14
Manager, Metering & Monitoring	14
Manager, Operations	14
Manager, Operations Support	14
Manager, Process Control	14
Manager, Purchasing	14
Manager, SCADA & Process Control	14
Manager, Training and Development	14
Manager, Trans/Treatment	14
Manager, Western Maintenance	14
Manager, Labor Relat & Workers Comp	14
Manager, Operations Engineering	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, Env & Reg Affairs	16
Director, Human Resources	16
Director, Internal Audit	16
Director, MIS	16
Director, Planning & Sustainab	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
Chief Operating Officer	
Executive Director	

STAFF SUMMARY

TO: Board of Director
FROM: Frederick A Laskey, Executive Director
DATE: December 20, 2017
SUBJECT: December PCR Amendment




COMMITTEE: Personnel and Compensation


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

 INFORMATION

 X .VOTE


Michele S. Gillen
Director, Administration

RECOMMENDATION:

To approve the amendment 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.

December PCR Amendment

There is one PCR amendment related to a change in the Operations Division.

The amendment is:

1. Title and grade change to a vacant position in the Thermal Department, Operations Division, Deer Island Treatment Plant, Program Manager, Energy, U9 Grade 29, to Senior Program Manager, Energy - DI, Unit 9 Grade 30, to align position with current needs in the department.

This amendment requires approval by the Personnel and Compensation Committee.

BUDGET/FISCAL IMPACT:

The annualized budget impact of this PCR amendment is between a savings of \$29,075 to a cost of \$5,055 depending on the individual selected for the vacant position upon the completion of the hiring processes. Staff will ensure that if there is a cost increase associated with this PCR amendment it will not result in spending over the approved FY18 Wages and Salary budget.

ATTACHMENTS:
New/Old Job Descriptions

MASSACHUSETTS WATER RESOURCES AUTHORITY
POSITION CONTROL REGISTER AMENDMENTS
FISCAL YEAR 2018

PCR AMENDMENTS REQUIRING PERSONNEL & COMPENSATION COMMITTEE APPROVAL - December 20, 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
P3	Operations Thermal 2931019	V	T,G	Program Manager, Energy	9	29	Senior Program Manager, Energy - DI	9	30	\$121,553	\$92,478 - \$126,608	-\$29,075 - \$5,055	To address current staffing needs in the Thermal Department, Deer Island, Operations Division
PERSONNEL & COMP COMMITTEE TOTAL =					1		SUBTOTAL:					-\$29,075 - \$5,055	
BOARD TOTAL =					0		SUBTOTAL:					\$0 - \$0	
GRAND TOTAL =					1		TOTAL ESTIMATED COSTS:					-\$29,075 - \$5,055	



MWRA
POSITION DESCRIPTION

POSITION: Program Manager, Energy
PCR#:
DIVISION: Operations
DEPARTMENT: Deer Island/Thermal Power Plant

BASIC PURPOSE:

Directs day-to-day operation of Deer Island's power generators and the associated Thermal Plant electrical power distribution system. Manages all maintenance work activities of the power generators including work scheduling, contractor coordination, and plant notifications. Monitors the electrical grid pricing and operates the power generators for peak days, demand response, or high electrical pricing to reduce energy costs. Acts as the technical lead for all Deer Island power generation equipment.

SUPERVISION RECEIVED:

Works under the general supervision of the Deer Island Deputy Director.

SUPERVISION EXERCISED:

Exercises supervision of assigned staff and consultants as needed.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Coordinates all planned and/or scheduled Power Generator outages and associated on-island electrical power generation sources for routine maintenance and testing with treatment operations.
- Manages all maintenance work activities of the Power Generators including work scheduling, contractor coordination, and plant notifications. Reviews all Power Generator service bulletins and provide recommendations for implementation.
- Manages the operation of the Power Generator to support ISO-NE demand response

program, operation during high price days, ISO peak system demand days, and the forward capacity market.

- Participates in the review and approval of all revisions/additions to the power generation equipment on Deer Island and in the thermal plant electrical distribution system.
- Reviews and implements appropriate authority and other regulatory agency safety requirements for the Thermal Plant electrical distribution system.
- Develops and implements contingency plans in response to situations that may jeopardize the Thermal Plant power and electrical distribution system.
- Coordinates operational impacts for the Eversource, Pratt and Whitney preferred services, and Power Generator maintenance contracts.
- Reviews and approves all lock out/tag out work requests that may affect the Thermal Plant power distribution systems.
- Reviews and analyzes all trouble reports from generation and power distribution assets to determine effects upon plant. Coordinates efforts with plant maintenance staff and engineering to resolve system problems and/or malfunctions.
- Monitors the distribution and generation systems via the DCS to determine system status for orderly transfer of load to restore services to affected regions of the system.
- Prioritizes work orders for repair/replacement/expansion of the Thermal Plant Power Generators.
- Coordinates with engineering and outside contractors for the periodic modification, repair, improvement, replacement and expansions of the Power Generator, steam turbines, hydro turbines, and wind turbines, and electrical distribution system and its components.
- Exercises independent judgment in the operation and maintenance of the Power Generators during the absence of the Deer Island Deputy Director. Assists the Manager, Power Generation with the operation and maintenance of all power generation equipment on Deer Island, including steam turbines, hydro turbines, wind turbines, solar panels and any other generation assets added to DITP.

SECONDARY DUTIES:

- Performs other related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) Knowledge of the principles and practices of engineering systems as normally attained through a four (4) year college program in electrical and/or mechanical engineering or a related field; and
- (B) Minimum of seven (7) to nine (9) years of electrical/thermal operating experience required, of which six (6) years must be in a supervisory capacity; or
- (C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Demonstrate working knowledge of Federal regulations governing the operation of generation, transmission and distribution systems i.e., "The Final Rule" CFR 1910.
- (B) Demonstrated skills in the development, organization and implementation of safety procedures, switching orders, electrical test and operations protocols necessary to successfully bring a complex, new electrical generation/distribution system similar to the BHP on line.
- (C) Excellent organizational, analytical, interpersonal, oral and written organizational skills are required.
- (D) Strong supervisory and leadership skills.
- (E) Ability to organize data and generate concise, applicable reports.
- (F) Ability to read, understand and interpret electrical 1-line drawings, control/protective elementary schematics and wiring diagrams.

SPECIAL REQUIREMENTS:

A valid Massachusetts Journeyman Electrical and Master Electricians License strongly preferred.

TOOLS AND EQUIPMENT USED:

Office equipment as normally associated with the use of telephone, personal computer including

word processing and other software, copy and fax machine.

PHYSICAL DEMANDS:

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

While performing the duties of this job, the employee is regularly required to 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 stand, walk, climb or balance, stoop, kneel, crouch, or crawl, taste or smell.

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, distance vision, color vision, depth perception, peripheral vision and the ability to adjust focus.

WORK ENVIRONMENT:

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

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

The noise level in the work environment is usually loud in field settings and moderately quiet in an office setting.

June, 2016

NEW

**MWRA
POSITION DESCRIPTION**

POSITION: Senior Program Manager, Energy - Deer Island

PCR#:

DIVISION: Operations

DEPARTMENT: Deer Island/Thermal Power Plant

BASIC PURPOSE:

Directs day-to-day operation of Deer Island's Thermal Plant and power generators. Manages all maintenance work activities of the Thermal plant and power generators including work scheduling, contractor coordination, and plant notifications. Monitors the electrical grid pricing and operates the power generators for peak days, demand response, or high electrical pricing to reduce energy costs. Manages the operation of all Deer Island Thermal and power generation equipment.

SUPERVISION RECEIVED:

Works under the general supervision of the Deer Island Deputy Director.

SUPERVISION EXERCISED:

Exercises close supervision of the Manager, Power Generation, and overall supervision of all Thermal Plant Staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Coordinates all planned and/or scheduled Thermal Plant and power generator outages and associated on-island electrical power generation sources for routine maintenance and testing with treatment operations to ensure equipment availability during critical operational periods.
- Manages all maintenance work activities of the power generators including work scheduling, contractor coordination, and plant notifications. Reviews all Thermal Plant and power generator service bulletins and provide recommendations for implementation.

- Manages the operation of power generators to support plant needs, the ISO-NE demand response program, operation during high price days, ISO peak system demand days, and the forward capacity market.
- Participates in the review and approval of all revisions/additions to power generation equipment on Deer Island.
- Develops and implements contingency plans in response to situations that may jeopardize the Thermal Plant and treatment plant operations.
- Coordinates operational impacts for the Boiler, Eversource, Pratt and Whitney preferred services, and power generator maintenance contracts.
- Reviews and approves all lock out/tag out work requests that may affect the Thermal Plant.
- Reviews and analyzes all trouble reports from generation assets to determine effects upon plant. Coordinates efforts with plant maintenance staff and engineering to resolve system problems and/or malfunctions.
- Monitors generation systems via the DCS to determine system status for orderly transfer of load to restore services to affected regions of the system.
- Prioritizes work orders for repair/replacement/expansion of the Thermal Plant power generators.
- Coordinates with engineering and outside contractors for the periodic modification, repair, improvement, replacement and expansions of the steam boilers, power generators, steam turbines, hydro turbines, and wind turbines. Exercises independent judgment in the operation and maintenance of the Thermal Plant and all power generators during the absence of the Deer Island Deputy Director. Oversees the operation and maintenance of all power generation equipment on Deer Island, including steam turbines, combustion turbines, hydro turbines, wind turbines, solar panels and any other generation assets added to DITP.

SECONDARY DUTIES:

- Performs other related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) Knowledge of the principles and practices of engineering systems as normally attained through a four (4) year college program in electrical and/or mechanical engineering or a related field; and
- (B) Minimum of eight (8) to ten (10) years of steam boiler/thermal operating experience required, of which four (4) years must be in a supervisory capacity; or
- (C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Demonstrate working knowledge of Federal regulations governing the operation of generation, transmission and distribution systems i.e., "The Final Rule" CFR 1910.
- (B) Demonstrated skills in the development, organization and implementation of safety procedures, switching orders, electrical test and operations protocols.
- (C) Demonstrable knowledge of electrical distribution, fault tracking and troubleshooting. Must be able to evaluate electrical distribution issues that may be preventing distribution of electricity from generation equipment to operating equipment.
- (D) Excellent organizational, analytical, interpersonal, oral and written organizational skills are required.
- (E) Demonstrated knowledge of steam boilers and power generation equipment.
- (F) Strong supervisory and leadership skills.
- (G) Ability to organize data and generate concise, applicable reports.
- (H) Ability to read, understand and interpret electrical 1-line drawings, control/protective elementary schematics and wiring diagrams.

SPECIAL REQUIREMENTS:

A Massachusetts Department of Public Safety-1st Class Engineer's License required to operate boilers & steam plants.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, distance vision, color vision, depth perception, peripheral vision and the ability to adjust focus.

WORK ENVIRONMENT:

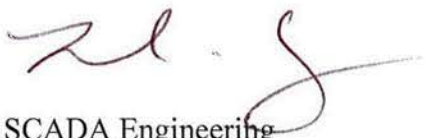
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

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

The noise level in the work environment is usually loud in field settings and moderately quiet in an office setting.

November, 2017


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: December 20, 2017
SUBJECT: Appointment of Senior Program Manager, SCADA Engineering

COMMITTEE: Personnel & Compensation

INFORMATION
 VOTE

Karen Gay-Valente, Director, Human Resources
John Vetere, Deputy Chief Operating Officer
Gus Serino, Manager, SCADA & Process Control
Preparer/Title


Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the appointment of Thai Nguyen to the position of Senior Program Manager, SCADA Engineering (Unit 9, Grade 30), at an annual salary of \$126,607.94, commencing on a date to be determined by the Executive Director.

DISCUSSION:

MWRA's SCADA system provides monitoring and/or control of approximately 100 water and wastewater transport facilities across MWRA's service area. SCADA engineers and technicians are responsible for SCADA system operation, maintenance and security including maintenance and configuration of field instrumentation, programmable logic controllers (PLCs), human – machine interface PCs, network and security equipment. SCADA staff also support several MWRA departments including Maintenance Engineering, Construction and Water Quality.

The position of Senior Program Manager, SCADA became vacant upon the promotion of the prior incumbent and reports to the Manager, SCADA and Process Control. The position is responsible for managing the SCADA system and supervising 31 staff that work in Chelsea, Southborough, and Cosgrove. Duties of the position include prioritizing SCADA system enhancement projects, interfacing with operations and other groups to direct SCADA support, directing the supervision of SCADA engineers and technicians staff performing system maintenance, overseeing SCADA support of capital projects, managing SCADA CEB and CIP budgets, identifying staff training needs, and continually improving staff productivity.

Selection Process

The position of Senior Program Manager, SCADA was posted internally and three candidates applied, two of which were determined to have met the minimum qualifications. The Director, Metropolitan Water Operations, the Manager, SCADA and Process Control, and a representative of MWRA's Affirmative Action and Compliance unit interviewed the two candidates. Upon

completion of the interviews, it was determined that Mr. Thai Nguyen was the best candidate to fill the position based on his experience and education.

Mr. Nguyen has more than 19 years of experience building, troubleshooting, and improving upon MWRA's SCADA system. Mr. Nguyen began his career at MWRA in 1998 as a Senior Monitoring and Control Engineer. In 2001, Mr. Nguyen was promoted to Project Manager, SCADA and in 2015, he was promoted to his current position of Program Manager, SCADA. During that time, he been instrumental in building MWRA's SCADA system, including design and implementation of the SCADA communications networks. Mr. Nguyen has led the implementation of many cyber security safeguards and also played a key role in the development and implementation of hardware and software used to monitor and control remote facilities. Mr. Nguyen is one of the most knowledgeable MWRA employees with respect to the MWRA SCADA system design and implementation.

For nearly seven years prior to coming to MWRA, Mr. Nguyen was a Test Engineer responsible for constructing, testing and troubleshooting control system equipment for Two-in-One Manufacturing, Inc. in Nashua, NH.

Mr. Nguyen has a Bachelor of Science in Electrical Engineering from the University of Massachusetts, Lowell. He also maintains a Certified Intrusion Analyst cyber security certification and a Grade II Wastewater Collections License.

BUDGET/FISCAL IMPACT:

There are sufficient funds in the Operations Division's FY18 Current Expense Budget to fund this position.

ATTACHMENTS:

Resume
Position Description
Organization Chart

Thai N. Nguyen

EXPERIENCE:

Massachusetts Water Resources Authority, Chelsea MA

07/15 – Present

Program Manager, SCADA

Responsible for supporting MWRA water and wastewater operations & maintenance as well as MWRA engineering. In addition, responsible for the continual improvements toward maintaining the SCADA system security from cyber threats. Furthermore, responsible for supervising of the eastern SCADA engineering staff. Specific duties include:

- SCADA network design and security
- Identifying, prioritizing and executing work related to the function and security of the Water & Waste Water SCADA System.
- Supervisor of two Project Managers and three Sr. Monitoring and Controls Systems engineers
- Provided troubleshooting support in all Waste Water Facilities, often times, not related directly SCADA
- Coordinated work with various MWRA disciplines such as electrical, mechanical & operations
- Assisted Engineering department on many SCADA/controls systems related issues
- PLC programming Allen Bradley SLC & Control Logix PLC's
- Continual work on enhancing MWRA SCADA cyber security position
- Technical lead for building and installing of the Data Diode System
- Technical lead for implementing MPLS communication
- Technical lead for implementing wireless communication
- Engineer, maintain and configure SCADA network operation and security devices such as routers, firewalls, switches, network security software, network monitoring software, network antivirus systems.
- Involved in hiring of staff, contractor and intern.

Massachusetts Water Resources Authority, Southborough MA

07/01 – 07/15

Project Manager, SCADA

Responsible for maintaining and enhancing the SCADA system for MWRA western water department/operations department. Lead engineering role in SCADA network design, configuration and security Specific duties include:

- SCADA network design and security
- Lead engineer for developing SCADA router configuration standard, and network optimization.
- Lead engineer for implementing frame-relay circuits and data encryption with IPSEC tunnels, Secure Shell (SSH) for network device configuration.
- Provide technical assistance to SCADA engineering staff on network troubleshooting, configuration and implementation.
- Lead engineer for developing SCADA network firewall rule set, configuration and implementation.
- Lead engineer for configuration and implementation of McAfee virus scan/EPO server
 - Configured, installed and maintained original antivirus windows 2005 SQL server
 - Configured, installed, hardened and maintained antivirus windows 2008 server
- Lead engineer for configuration of Intravue network monitoring/IDS software
- Interfacing with contractors to assist with technical problems and ensure that the system satisfies process requirements and implemented correctly and efficiently.
- Supervisor of Sr. Monitoring and Controls Systems engineers.
- Troubleshooting problems in Western Water Facilities on many SCADA/controls systems related issues.
- Assisted SCADA staff responsible for Water & Wastewater SCADA systems.
- Coordinate work with various MWRA disciplines such as electrical & operations.
- Programming Allen Bradley SLC and Control Logix PLC's.
- Designed, built, installed SCADA network logging system for cyber security.
- Designed, built, and installed SCADA iFix Redundant Servers to improve SCADA reliability.
- Created custom faceplate that verifies a SCADA user's group privileges prior to allowing write control of SCADA set points using Microsoft Visual Basic
- Created custom login screen that SCADA HMI users use to login iFix using Microsoft Visual Basic
- Designed technique to monitor loss of communication to PLC using Microsoft Visual basic

- Developed iFix database conversion from ABR to IGS interface.
- Involved in the start-up, testing and enhancements of the Carol Water Treatment Plant UV system, including: facility start-up testing, contractor over sight, technical support and enhancements of the system when contractors work was complete.
- Wrote monthly/weekly report for Western Scada Group.
- Created SCADA network configuration drawing using AutoCAD.
- Part of the SCADA on-call crew rotation.

Massachusetts Water Resources Authority, Southborough MA

01/98 - 07/01

Senior Controls & Monitoring Engineer

Responsible for maintaining and enhancing the SCADA system for the MWRA western water department. Specific duties include:

- Developed the programming, and HMI's prototype system for the Water Quality Censar's project.
- Maintained and modified iFix database as needed.
- Involved with FIX32 to iFIX conversion of SCADA nodes in Water system.
- Involved with MIS department to create a secure means to provide data communication of SCADA data to MIS network for PI server.
- PLC programming Allen Bradley SLC PLC's.
- Maintained master equipment inventory database in Microsoft access
- Involved in development of MWRA SCADA standards. Wrote HMI verification standard.
- Responsible for SCADA system and process controls troubleshooting.
- Maintained and configured SCADA network operation and security devices such as routers, switches, digiconcentrators, network security software, network monitoring software, network antivirus systems.
- Creating Process Control Diagrams (P&ID's) that show how field measurement devices and process equipment shall communicate control signals, as discrete and analog inputs/outputs, with Programmable Logic Controllers.

Two-in-One Manufacturing, Nashua NH

02/91 - 01/98

Test Engineer

Responsible for ordering of parts, testing, troubleshooting, and shipping of finished product.

- Build, tested, electromechanical power supply, plc's panel.
- Electronic soldering, assembly, electrical assembly, circuit board soldering.
- Provided technical support for the production division of the manufacturing facility.

Education & Professional Certifications:

BS, Electrical Engineering, Feb, 1991
University of Massachusetts, Lowell, MA

Grade IV Water Treatment License in MA

**MWRA
POSITION DESCRIPTION**

POSITION: Senior Program Manager, SCADA

PCR#:

DIVISION: Operations

DEPARTMENT: SCADA

BASIC PURPOSE:

Manages the SCADA system and directly oversees the SCADA system installation, operation and maintenance. Required to be part of an on-call rotation for emergencies twenty-four (24) hours a day, seven (7) days a week.

SUPERVISION RECEIVED:

Works under the supervision of Manager, SCADA & Process Control.

SUPERVISION EXERCISED:

Exercises close supervision of approximately thirty (30) staff and the SCADA program.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Directs corrective, preventive and predictive maintenance on all SCADA systems and electrical, electronic, mechanical and pneumatic equipment used in control, measurement and recording of water flow and pressure, treatment and real time water quality monitoring at SCADA sites.
- Directs SCADA system development including assessment of operator needs, development of standards, deployment of new systems and upgrading of existing systems as appropriate.
- Directs the assessment of SCADA system cyber security risks and the testing and implementation of protective measures.
- Participates in capital project design, construction and start-up to ensure adherence to standards and effective integration of new SCADA controlled facilities into the overall

SCADA system.

- Works towards harmonious personnel relations and positive staff morale. Performs performance reviews, investigates employee complaints, addresses employee conflicts, initiates disciplinary actions and identifies and proposes organizational changes to address changing needs.
- Identifies training needs and implements appropriate in-house or consultant-led training programs.
- Manages program budget. Assesses resources needed to effectively manage unit, prepares budget requests and in-depth justification, explains budget variances and controls unit spending to ensure overall budget compliance.
- Monitors, reports and works to continually improve staff productivity through staff skills development, strategic planning, standard operating procedures (SOPs) improvements and research and implementation of technology advances.
- Ensures that the unit's SOPs effectively communicate the unit's proper operating procedures and are being utilized by staff. Develops, documents and continually evaluates effectiveness of the SOPs and facility manuals. Ensures that all staff is properly trained.
- Ensures that all staff is familiar with, has been trained on and is utilizing MWRA Safety Policies and Procedures.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A Bachelor of Science degree in Electronic / Electrical Engineering or a related field; and
- (B) Seven (7) to nine (9) years experience with process control systems, electronic, electrical, pneumatic and mechanical instrumentation including at least four (4) years in a supervisory position; and
- (C) Five (5) to seven (7) years of demonstrated experience in SCADA systems including operations, maintenance, design, installation and start-up; and

(D) Three (3) to five (5) years experience in data transmission via radio, microwave and telephone data lines; or

(E) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

(A) Proficiency in computer hardware and software, including SCADA and communications technology, routers and networking, cyber security, PLC control programming, HMI programming, databases, data presentation and analysis tools, and Microsoft Office.

SPECIAL REQUIREMENTS:

Professional Engineer license preferred.

A valid Massachusetts Grade 4D Water Distribution Operator license, or a Grade 2T Water Treatment Operator license, or a Grade 4 Wastewater Treatment Plant Operator license or a NEWEA Grade IV Wastewater Collections System Operator certification within one (1) year.

Security certification such as CISSP or GIAC required within six (6) months of employment.

A valid FCC General Radiotelephone Operators License preferred.

A valid Massachusetts Drivers License required.

TOOLS AND EQUIPMENT USED:

Electronic test equipment, computers, PLCs, hand tools, climbing and fall retrieval equipment, mobile radio, etc.

PHYSICAL DEMANDS:

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

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

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

WORK ENVIRONMENT:

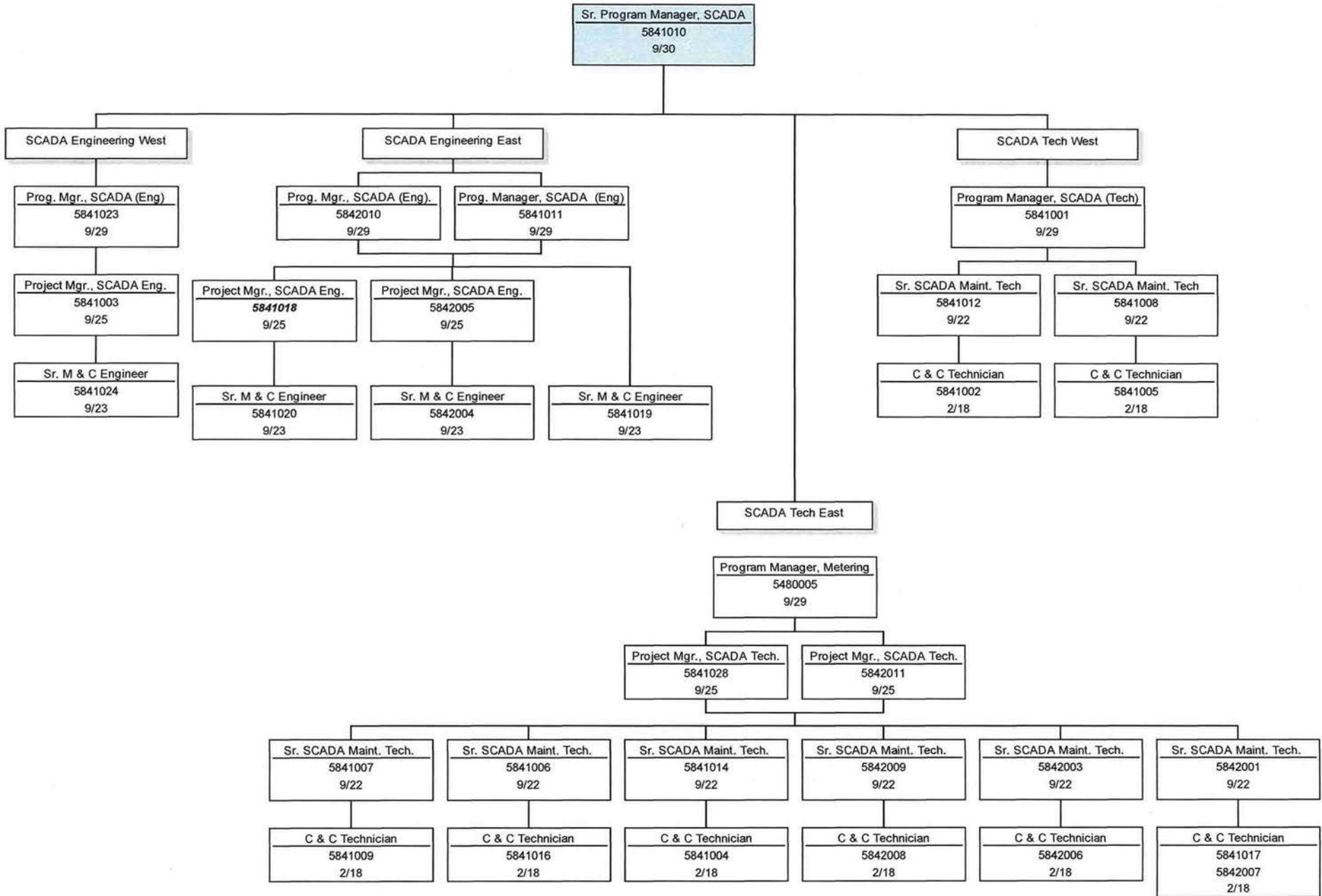
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

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

The noise level in the work environment is usually loud in field settings, and moderately quiet in office settings.

September 2017

SCADA Maintenance
December 2017




STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: December 20, 2017
SUBJECT: Appointment of Project Manager, Inspections, Toxic Reduction and Control

COMMITTEE: Personnel and Compensation

 INFORMATION
 X VOTE

Carolyn M. Fiore, Deputy Chief Operating Officer
John Riccio, Director, Toxic Reduction and Control
Preparer/Title


Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the appointment of Walter Schultz to the position of Project Manager, Inspections, Toxic Reduction and Control (Unit 9, Grade 25) at the recommended salary of \$104,221.76, to be effective on a date to be determined by the Executive Director.

DISCUSSION:

The MWRA's Toxic Reduction and Control Department (TRAC) is responsible for carrying out the Pretreatment Program requirements of MWRA's Deer Island and Clinton Wastewater Treatment Plants National Pollutant Discharge Elimination System Permits and U.S. Environmental Protection Agency's regulations. Pursuant to these requirements, TRAC staff conduct inspections and sampling of industrial and commercial facilities that might or do discharge to the sanitary sewer system. They also issue and enforce permits and MWRA's Sewer Use Regulations. The Pretreatment Program is designed to protect municipal and MWRA infrastructure, prevent interference from, or pass-through of, pollutants through the treatment plants, and enhance the beneficial reuse of residuals. MWRA has 45 separate sewer use communities within the metropolitan Boston and Clinton service areas, and more than 1,100 permitted facilities within these communities.

The Project Manager, Inspections, position is critical to ensuring that inspections and permits are consistent throughout the 45 communities. The position's responsibilities include: ensuring consistency of inspection practices and procedures; developing and maintaining Standard Operating Procedures for inspection; reviewing and evaluating inspection and permitting documentation for accuracy in support of TRAC enforcement and/or legal actions; working with TRAC's Pretreatment Information Management System (PIMS) to schedule, track and document staff work; and participating in TRAC's On-Call Manager rotation for response to spill events after hours.

The position of Project Manager, Inspections, became vacant in September 2017, when the previous incumbent was promoted to another position within TRAC. Organizationally, the Project Manager, Inspections reports to the Regional Manager, Inspections and Permitting (see attached Organization Chart). This position is responsible for the day-to-day oversight and scheduling of TRAC's staff who inspect commercial and industrial facilities as part of MWRA's EPA-approved pretreatment program and perform other functions in support of various MWRA programs.

Selection Process

The position of Project Manager, Inspections was posted internally and a total of eight candidates applied for this position. Seven candidates were determined to be qualified and were referred for an interview. The TRAC Sr. Program Manager, Field Operations and Permitting, Regional Manager, Inspections and Permitting, and a representative from MWRA's Human Resources Department conducted the interviews. Upon completion of the interviews, Mr. Schultz was selected as the best candidate for the position based on his qualifications and experience.

Mr. Schultz has worked for MWRA in the TRAC Department since 1985, first as a Sampling Associate. In 1987, he was promoted to Industrial Waste Inspector, a position which later became the Industrial Coordinator. Mr. Schultz's duties as an Industrial Coordinator include conducting inspections and audits of commercial and industrial facilities, advising permittees on compliance with MWRA and EPA regulations, and drafting industrial permits. In that role, Mr. Schultz has gained a firm understanding of environmental regulatory issues, policies, and practices related to industrial wastewater treatment and discharge. Mr. Schultz has demonstrated leadership, managerial and good communication skills through managing work on a variety of TRAC's projects including co-chairing a subgroup of TRAC's Mercury Products Workgroup and chairing TRAC's local Safety Committee.

As the Industrial Coordinator for both Cambridge and downtown Boston, Mr. Schultz has demonstrated his ability to handle a complicated workload through prioritizing and scheduling inspections in the rapidly changing industrial base of those communities while documenting his work in an accurate and timely manner. Mr. Schultz also has experience acting as a Project Manager in TRAC's Monitoring Section, overseeing the scheduling and day-to-day activities of 14 staff, and gaining knowledge and skills that are directly related to the duties of the Project Manager, Inspections.

Prior to working at the MWRA, Mr. Schultz worked as a Process Chemist at a chemical waste treatment facility. Overall, Mr. Schultz's skills, knowledge, and experience make him well qualified for the Project Manager, Inspections position.

Mr. Schultz earned his Bachelor of Science Degree in Chemistry with a minor in Mathematics from Central Connecticut State University. He also holds a Massachusetts Grade V- Combined Wastewater Operator's License from the Commonwealth of Massachusetts Department of Environmental Protection and Toxics Use Reduction (TUR) Planner certification.

BUDGET/FISCAL IMPACT:

There are sufficient funds in the Operations Division's FY18 Current Expense Budget to fund this position.

ATTACHMENTS:

Resume of Walter Schultz
Position Description
Organization Chart

WALTER W. SCHULTZ, JR.

CAREER OBJECTIVE

To obtain the Project Manager, Inspections position within MWRA's Toxic Reduction & Control section

EDUCATION

Central Connecticut State University, New Britain, CT

B.S. Degree, Chemistry (major) / Mathematics (minor)

PROFESSIONAL LICENSES/CERTIFICATIONS

Massachusetts Department of Environmental Protection Wastewater Treatment Plant Operators
Grade V - Combined

Site Specific Toxic Reduction Use Planner

OSHA 40 Hour Certification

MWRA Supervisory Development Training

Keolis / MBTA Right of Way Training

WORK EXPERIENCE

Industrial Coordinator, MWRA, TRAC, Charlestown MA 11/87 – present

Have clearly demonstrated leadership, managerial and excellent communication skills through managing work on following projects

- Mercury Products Work Group - Facilities Planning Group
- Mercury Products Work Group - Technology Identification Group
- Hospital Work Group (Internal TRAC)
- Cooling Tower Group (Internal TRAC)
- Construction Dewatering Site Group (Internal TRAC)
- Sources of Copper and Petroleum Hydrocarbons Report (Internal TRAC)
- TRAC Local Safety Committee
- TRAC Right to Know Trainer

Regarding Mercury Products Work Group efforts, as part of the Facilities Planning Group developed a manual that covered mercury management through source reduction/pollution prevention techniques. Work group members consisted of MWRA personnel as well as industry personnel. As member of work group acted as task facilitator to produce a completed manual. Mercury Work Products Group received Governor's Award for Excellence.

Served as Co-Chairman for Technology Identification Group related to Mercury Products Work Group. Group was charged with researching, identifying, bench scale testing and pilot testing mercury pretreatment systems. Through my guidance and leadership the group identified and interviewed six vendors of mercury pretreatment systems. Lead negotiations with vendors to perform "no fee" bench scale testing to support our study. Actively represented and coordinated MWRA and work group activities with the Massachusetts STEP Program / University of Massachusetts to support pilot study phase of this project.

As a member of the Hospital Work Group, Cooling Tower and Construction Dewatering Site Group, responsibilities included providing industry sector knowledge and technical

consultation to work group.

Regarding Sources of Copper and Petroleum Hydrocarbons, performed research on sources of petroleum hydrocarbons in MWRA sewerage district. Research was incorporated in a published report for MWRA internal use.

Serving as Chairman of the TRAC Local Safety Committee. Role includes functioning as departmental liaison between TRAC and MWRA OSHU (Occupational Safety and Health Unit). Contributions to the Local Safety Committee include development of Safety Training Database to maintain records of TRAC personnel safety training. Under my direction as chairman, the Local Safety Committee hosted a biosafety training seminar in response to concerns from TRAC's monitoring staff, conducted a study to evaluate hazards associated with opening oil water separators and developed an approved MWRA Procedure & Protocol for opening oil water separators that is still currently utilized by TRAC staff. Also have provided "Tool Box" type presentations for Industrial Coordinators and Sampling Associates as required. Topics have ranged from waste water handling to the recent Ebola outbreak and safety measures to take when handling waste water.

Routine duties as Industrial Coordinator involve conducting inspections/audits, permit writing, first tier level enforcement actions. Inspections and audits consist of evaluating industrial user's process and process control equipment to provide analysis / review to determine if the industrial wastewater discharges are compliant with applicable federal/MWRA rules and regulations. Have extensive familiarity with flow through and batch pretreatment systems, such as dissolved air flotation, reverse osmosis, ion exchange, metal precipitation, cyanide oxidation, flocculation and filtration. Cities covered have included the City of Boston and the City of Cambridge. Challenges presented by these cities have included writing permits / providing inspectional support for the dewatering operations of the Central Artery Project, large educational and health facilities, numerous startup biotech companies as well as large multi building biotech research facilities.

Project Manager, TRAC Monitoring Section (temporary assignment)

October '92 - April '93

Duties included management and supervision of 14 Sampling Associates, Monitoring Coordinator and overseeing the day-to-day activities of the Monitoring Section. Routine duties included the scheduling of monitoring events, advising field personnel with regard to monitoring events and resolving monitoring field problems. Management responsibilities included review of all applicable monitoring personnel field reports. Conducted Annual Performance Evaluations of staff. Also responsible for the interviewing and hiring of staff. Provided assistance to the Program Manager, Monitoring with regard to budgeting matters and section expenditures.

Sampling Associate, TRAC Monitoring Section

November '85 - November '87

Duties included sampling of industrial process effluent, processing of collected samples, report preparation and formulating industrial discharge permits.

Process Chemist/Supervisor, CECOS Treatment Corp., Bristol CT

10/84 - 10/85

Responsibilities included analysis and treatment of industrial wastewater and coolants. As second shift process chemist/supervisor, responsibilities included treatment of wastewater and coordination between laboratory and plant staff. Performed bench scale testing to optimize treatment chemical dosage and to determine appropriate treatment dosage schemes. Treatment technologies utilized included precipitation, neutralization, flocculation and filtration, using a variety of chemistries for treatment of wastewaters. Performed quality control tests to determine if treated waste stream met NPDES discharge permit requirements. Also, analyzed samples of received industrial wastes to determine if materials met prequalified specifications.

OTHER RELEVANT INFORMATION

- Received MWRA award for Outstanding performance / Achievement for the Mercury Products Work Group efforts

**MWRA
POSITION DESCRIPTION**

POSITION: Project Manager, Inspections

PCR#:

DIVISION: Operations

DEPARTMENT: Field Operations/Toxic Reduction and Control (TRAC)

BASIC PURPOSE:

Initiates and manages inspection projects for TRAC. Conducts research related to pretreatment program practices and policies and makes recommendations for program modifications. Ensures that Industrial User inspections and reviews performed by TRAC meet programmatic and legal requirements. Responds to spills and other emergencies.

SUPERVISION RECEIVED:

Reports to a Regional Manager.

SUPERVISION EXERCISED:

None

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Manages daily inspection activities for and provides overall direction to TRAC's Industrial Coordinators concerning Industrial User, Construction Dewatering, and Landfill inspections.
- Manages TRAC's inspection projects from inception to issuance. Reviews and recommends inspection policies and procedures within TRAC. Provides direction to the TRAC managers and staff concerning conducting inspections and drafting inspection reports and memos to ensure that there is consistency on practice, procedure, and implementation.
- Conducts inspections of industry and other sewer dischargers and drafts resulting reports. Integrates inspection, sampling, and enforcement activities to develop information for permit revisions, new permit issuance, and one time only discharge authorizations. Issues Notices of Violation and other informal enforcement actions and follows up to ensure that responses are timely and complete. Coordinates with and refers matters requiring escalated enforcement to enforcement staff.

- Schedules inspections and reviews and approves the inspection reports and memoranda drafted by the Industrial Coordinators to insure that they meet programmatic and legal requirements.
- Coordinates and maintains TRAC's industrial waste survey.
- Reviews inspection forms, templates, and other related documents and updates and revises them as appropriate.
- Conducts audits of Industrial Coordinators during inspections to ensure that inspections are complete and thorough to meet the section's needs to document and permit sewer dischargers and enforce its regulations.
- Tracks Industrial User, Construction Dewatering, and Landfill inspection goals and accomplishments and provides reports on accomplishments.
- Assists the Regional Manager with interviewing and recommending staff for hiring and promotion, developing budgets, and maintaining discipline.
- Performs administrative duties such as reviewing and evaluating staff, scheduling work, managing vehicles, and developing and implementing training for staff members.
- Reviews and recommends policies and procedures within TRAC.
- Acts as On-Call Manager for TRAC in rotation with other TRAC staff.
- Participates in liaison, coordination, and educational activities within the MWRA and with other governmental agencies and the public.
- Participates actively in TRAC multi-disciplinary work groups.
- Conducts periodic review of inspection data entered by Industrial Coordinators to ensure that accurate and current information relating to inspections on TRAC databases.
- Drafts reports, memoranda, and other documents.
- Performs related duties as required.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) Four (4) year undergraduate degree in chemistry, biology, environmental sciences, a related engineering or science discipline, or other related field.
- (B) Knowledge and understanding of environmental engineering, science, law, policy, and practice related to industrial wastewater treatment and discharge, as acquired through a minimum of five (5) to seven (7) years of experience. This should include an understanding of industrial wastewater sampling, pollution prevention and source reduction, inspecting industrial facilities, issuing discharge permits, and enforcing environmental requirements.

Necessary Knowledge, Skills and Abilities:

- (A) Ability to plan and implement programs.
- (B) Familiarity with computers, including word-processing, spreadsheet, database, and other information systems, and an ability to perform data analyses.
- (C) Ability to open manholes, move manhole covers, and do dye testing of sewer lines.
- (D) Ability to read and interpret engineering maps, plans, and specifications.
- (E) Strong written and oral communication skills.

SPECIAL REQUIREMENTS:

- Valid Massachusetts Class D Motor Vehicle Operator's License.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

The employee must frequently lift and/or move up to 10 pounds and occasionally lift and/or move up to 50 pounds. Specific vision abilities required by this job include close vision, distance vision, color vision, depth perception, peripheral vision and the ability to adjust focus.

WORK ENVIRONMENT:

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

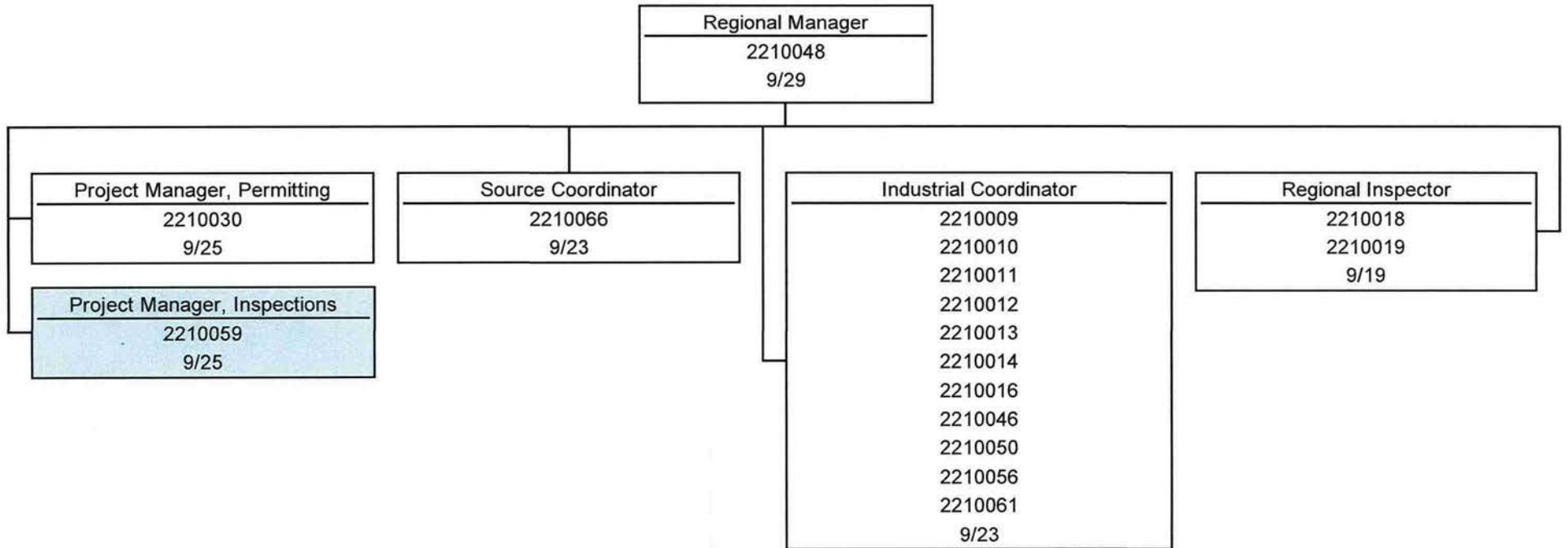
While performing the duties of this job, the employee occasionally works in outside weather conditions. The employee occasionally works near moving mechanical parts, and is occasionally exposed to wet and/or humid conditions and vibration. The employee occasionally works in high precarious places and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

The noise level in the work environment is usually loud in field settings and moderately quiet in an office setting.

October 2006

TRAC Inspection Unit

December 2017





MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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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, December 20, 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. Transmittal of FY2019 Proposed Capital Improvement Program and FY2019-2023 Spending Cap to the MWRA Advisory Board (ref. AF&A B.1)
2. Approval of Seventy-Sixth Supplemental Resolution (ref. AF&A B.2)
3. Renewal of Water Supply Continuation Agreements with Chicopee Valley Aqueduct Communities (ref. W A.1)
4. Revisions to Management Policy for Staff Appointments (ref. P&C A.1)
5. PCR Amendment – December 2017 (ref. P&C A.2)
6. Appointment of Senior Program Manager, SCADA Engineering (ref. P&C A.3)
7. Appointment of Project Manager, Inspections, TRAC (ref. P&C A.4)

B. Contract Awards

1. Financial and Swap Advisory Services: PFM Financial Advisors, LLC, Contract F247 AF&A C.1)
2. Dental Insurance: Delta Dental of Massachusetts, Contract A613 (ref. AF&A C.2)

C. Contract Amendments/Change Orders

1. Security Guard Services for Various MWRA Facilities: Universal Protection Service, LLC, d/b/a Allied Universal Security Services, Contract EXE-033, Amendment 2 (ref. AF&A D.1)
2. Northern Intermediate High Section 110 – Reading and Woburn: Albanese D&S, Inc., Contract 7471, Change Order 14 (ref. W B.1)
3. Northern Intermediate High Section 110 – Stoneham and Wakefield: Albanese D&S, Inc. Contract 7478, Change Order 5 (ref. W B.2)

V. CORRESPONDENCE TO THE BOARD

VI. OTHER BUSINESS

VII. EXECUTIVE SESSION

A. Real Estate:

1. Watershed Land Acquisition

B. Litigation:

1. Authorization to Commence Cost Recovery Litigation against J. D'Amico, Inc., Green International Affiliates, Inc., and Travelers Casualty and Surety Co., Inc.

VIII. ADJOURNMENT

Meeting of the Board of Directors**November 15, 2017**

A meeting of the Board of Directors of the Massachusetts Water Resources Authority was held on November 15, 2017 at the Authority headquarters in Charlestown. Chairman Beaton presided. Present from the Board were Ms. Wolowicz and Messrs. Blackmon, Carroll, Flanagan, Foti, Pappastergion, Peña, Vitale and Walsh. Mr. Cotter was absent. Among those present from the Authority staff were Frederick Laskey, Executive Director, Steven Remsberg, General Counsel, Michael Hornbrook, Chief Operating Officer, Thomas Durkin, Director of Finance, Michele Gillen, Director of Administration, and Bonnie Hale, Assistant Secretary. The meeting was called to order at 1:05 p.m.

APPROVAL OF MINUTES

Upon a motion duly made and seconded, it was

Voted to approve the minutes of the October 18, 2017 Board of Directors meeting, as presented and filed with the records of the meeting.

REPORT OF THE EXECUTIVE DIRECTOR

Mr. Laskey briefly reported on various matters.

BOARD ACTIONS**APPROVALS****Dental Insurance**

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director to seek prices for a contract for dental insurance for eligible employees with an annual maximum benefit of \$1,500 to mirror the benefit offered by the Commonwealth.

Approval of New Member of the Wastewater Advisory Committee

Upon a motion duly made and seconded, it was

Voted to approve the addition of one new member, Mr. Philip G. Ashcroft, to the Wastewater Advisory Committee.

Appointment of Program Manager, SCADA

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. David Goyette to the position of Program Manager, SCADA (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 Senior Monitoring and Control Engineer, SCADA

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. Carl Chin to the position of Senior Monitoring and Control Engineer, SCADA Engineering (Unit 9, Grade 23), at an annual salary of \$94,428.89, commencing on a date to be determined by the Executive Director.

CONTRACT AWARDS

Insurance Consultant Services: Kevin F. Donoghue Insurance Advisor, Inc., Contract F246

Upon a motion duly made and seconded, it was

Voted to approve the recommendation of the Consultant Selection Committee to select Kevin F. Donoghue Insurance Advisor, Inc. to provide insurance consultant services and to authorize the Executive Director, on behalf of

the Authority, to execute a contract with Kevin F. Donoghue Insurance Advisor, Inc. in an amount not to exceed \$150,000, for a term of three years from the Notice to Proceed.

Supply and Delivery of Ferrous Chloride to Deer Island Treatment Plant: Kemira Water Solutions, Inc., Bid WRA-4425

Upon a motion duly made and seconded, it was

Voted to approve the award of Purchase Order Contract WRA-4425 for the supply and delivery of ferrous chloride to the Deer Island Treatment Plant to the lowest eligible and responsible bidder, Kemira Water Solutions, Inc., 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 \$1,490,000 for a period of one year, from January 1, 2018 through December 31, 2018.

CONTRACT AMENDMENTS/CHANGE ORDERS

Clinton Wastewater Treatment Plant Phosphorus Reduction - Design, Construction Administration and Resident Engineering Services: Stantec Consulting Services, Inc., Contract 7377, 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 7377 with Stantec Consulting Services, Inc., Clinton Wastewater Treatment Plant Phosphorus Reduction - Design, Construction Administration and Resident Engineering Services, by \$249,645.48, and to increase the term by 172 calendar days to March 13, 2019.

Southern Extra High Pipeline – Section 111 (Boston): P. Gioioso and Sons, Inc., Contract 6454, Change Order 3

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to approve Change Order 3 to increase the amount of Contract 6454 with P. Gioioso and Sons, Inc., Southern Extra High Pipeline - Section 111 (Boston), for an amount not to exceed \$78,353.57, with no increase in contract term; further, to authorize the Executive Director to approve additional change orders as may be needed to Contract 6454 in amounts not to exceed the aggregate of \$250,000, in accordance with the Management Policies and Procedures of the Board of Directors.

Wachusett Aqueduct Pumping Station: BHD/BEC JV 2015, A Joint Venture, Contract 7157, Change Order 25

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to approve Change Order 25 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 \$290,963.00, 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 authorize the release of executive session minutes and 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
Carroll
Flanagan
Foti
Pappastergion
Peña
Vitale
Walsh
Wolowicz
Beaton

Voted to enter executive session to authorize the release of executive session minutes and to discuss litigation, in that such discussion in open session may have a detrimental effect on the litigating position of the Authority.

It was stated that the meeting would return to open session solely for the consideration of adjournment.

EXECUTIVE SESSION

The meeting returned to open session at 1:30 p.m. and adjourned.