



# MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey  
Executive Director

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

## ADMINISTRATION, FINANCE & AUDIT COMMITTEE MEETING

*Chair: (vacant)*  
*Vice-Chair: H. Vitale*  
*Committee Members:*  
J. Carroll  
K. Cotter  
J. Foti  
A. Pappastergion  
J. Walsh

to be held on

Wednesday, December 16, 2015

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

Time: 10:00 a.m.

### AGENDA

#### **A. Information**

1. Delegated Authority Report - November 2015
2. FY16 Financial Update and Summary as of November 2015

#### **B. Approvals**

1. FY17 Proposed Capital Improvement Program (CIP)

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

1. Bond Counsel: McCarter & English, LLP, Contract F236

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the  
Administration, Finance and Audit Committee

November 18, 2015

A meeting of the Administration, Finance and Audit Committee was held on November 18, 2015 at the Authority headquarters in Charlestown. Vice-Chairman Vitale presided. Present from the Board were Messrs. Blackmon, Carroll, Cotter, Foti, Pappastergion, Pena, and Walsh; Mr. Flanagan joined the meeting in progress. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Michele Gillen, John Sabino, Karen Gay-Valente, George Denhard, Mike Hornbrook, Tom Durkin, Kathy Soni, Dave Whelan, Matt Horan, Emily Dallman, and Bonnie Hale. The meeting was called to order at 10:10 a.m.

**Information**

Delegated Authority Report – October 2015

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

(Mr. Flanagan joined the meeting.)

FY16 First Quarter Orange Notebook

Staff gave a presentation on training, and it was noted that there would be a new page added on this subject in future Orange Notebooks.

FY16 Financial Update and Summary - October

Staff provided a summary of the October financials, and there was general discussion and question and answer.

OPEB Trust Investment

Staff reported on investment strategy for OPEB Trust funds.

**Approvals**

\*Approval of the Seventy-First Supplemental Bond Resolution

The Committee recommended approval of the seventy-first bond resolution (ref. agenda item B.1).

\* Approved as recommended at November 18, 2015 Board of Directors meeting.

**Contract Awards**

\*Workers' Compensation Third Party Administrator Services: PMA Management Corp. of New England, Contract A601

Staff described the type of work performed under this contract and there was a brief discussion. The Committee recommended approval of the contract award (ref. agenda item C.1).

The meeting adjourned at 11:00 a.m.

\* Approved as recommended at November 18, 2015 Board of Directors meeting.

### STAFF SUMMARY


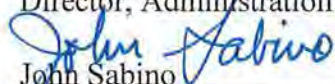
**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** December 16, 2015  
**SUBJECT:** Delegated Authority Report – November 2015



COMMITTEE: Administration, Finance & Audit

INFORMATION  
 VOTE

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

  
Michele S. Gillen  
Director, Administration  
  
John Sabino  
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, 2015.

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, 2015

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMEND/CO	COMPANY	FINANCIAL IMPACT
C-1.	11/12/15	<b>INSTALLATION OF ENERGY EFFICIENT EXPLOSION PROOF LED INTERIOR LIGHTING AT THE COTTAGE FARM PUMP STATION</b> AWARD OF AN ENERGY EFFICIENT CONTRACT TO AN EVERSOURCE PREQUALIFIED VENDOR FOR INSTALLATION OF ENERGY EFFICIENT EXPLOSION PROOF LED LIGHTING AT THE COTTAGE FARM PUMP STATION FOR A TERM OF 150 CALENDAR DAYS. REBATE TOTALING \$23,931.23 WILL BE RECEIVED FROM EVERSOURCE UPON PROJECT COMPLETION FOR A PAYBACK OF 5.8 YEARS.	OP-300	AWARD	HORIZON SOLUTIONS LLC	\$92,734.58
C-2.	11/12/15	<b>DEER ISLAND TREATMENT PLANT COMPRESSED AIR IMPROVEMENTS</b> AWARD OF AN ENERGY EFFICIENT CONTRACT TO AN EVERSOURCE PREQUALIFIED VENDOR FOR THE INSTALLATION OF COMPRESSED AIR IMPROVEMENT EQUIPMENT AT THE DEER ISLAND TREATMENT PLANT FOR A TERM OF 180 CALENDAR DAYS. A REBATE TOTALING \$12,417 WILL BE RECEIVED FROM EVERSOURCE UPON PROJECT COMPLETION.	SS46	AWARD	IMEC	\$99,000.00
C-3.	11/12/15	<b>AIR COMPRESSOR SYSTEM SERVICE</b> AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR ANNUAL INSPECTION AND TESTING, SEMI-ANNUAL PREVENTIVE MAINTENANCE, EMERGENCY AND NON-EMERGENCY REPAIR SERVICES FOR THE AIR COMPRESSOR SYSTEMS LOCATED AT VARIOUS MWRA FACILITIES FOR A TERM OF 730 CALENDAR DAYS.	OP-290	AWARD	COOLING & HEATING SPECIALISTS, INC.	\$148,900.00
C-4.	11/16/15	<b>INSTALLATION OF ENERGY MANAGEMENT SYSTEM AT THE WILLIAM A. BRUTSCH WATER TREATMENT PLANT</b> AWARD OF AN ENERGY EFFICIENT CONTRACT TO AN NGRID PREQUALIFIED VENDOR FOR THE INSTALLATION OF AN ENERGY MANAGEMENT SYSTEM AT THE WILLIAM A. BRUTSCH WATER TREATMENT PLANT FOR A TERM OF 180 CALENDAR DAYS. A REBATE TOTALING \$1,500 WILL BE RECEIVED FROM NGRID UPON PROJECT COMPLETION FOR A PAYBACK OF 4.0 YEARS.	OP-309	AWARD	HORIZON SOLUTIONS LLC	\$46,357.00
C-5.	11/17/15	<b>INSULATION REPAIRS AT DEER ISLAND TREATMENT PLANT</b> AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE REPAIR AND/OR REPLACEMENT OF INSULATION REMOVED FROM THE CAUSTIC SODA ASH PUMPS AND SUPPLY LINES LOCATED AT THE DEER ISLAND TREATMENT PLANT FOR A TERM OF 90 CALENDAR DAYS.	SS48	AWARD	BROCK SERVICES, INC.	\$89,544.00
C-6.	11/19/15	<b>ELEVATOR MAINTENANCE AND REPAIR SERVICE DEER ISLAND TREATMENT PLANT</b> AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE PREVENTIVE MAINTENANCE, NON-EMERGENCY AND EMERGENCY REPAIR SERVICES FOR THE 23 ELEVATORS LOCATED AT THE DEER ISLAND TREATMENT PLANT FOR A TERM OF 730 CALENDAR DAYS.	SS35	AWARD	EAGLE ELEVATOR CO., INC.	\$434,790.00
C-7.	11/25/15	<b>WORKERS' COMPENSATION LEGAL SERVICES</b> INCREASE THE LEVEL OF EFFORT FOR ANTICIPATED SERVICES FOR THE REMAINDER OF THE CALENDAR YEAR.	A597	1	TENTINDO KENDALL CANNIFF & KEEFE LLP	\$25,000.00

## PURCHASING DELEGATED AUTHORITY ITEMS - November 1 - 30, 2015

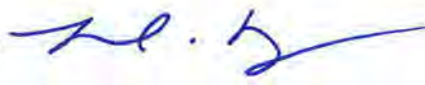
NO.	TITLE AND EXPLANATION	CONTRACT #	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-1. 11/3/15	<b>LABORATORY EQUIPMENT PREVENTATIVE AND CORRECTIVE MAINTENANCE SERVICE</b> AWARD OF A THREE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER TO PROVIDE LABORATORY EQUIPMENT PREVENTATIVE AND CORRECTIVE MAINTENANCE SERVICES FOR THE DEPARTMENT OF LABORATORY SERVICES.	WRA-4082Q		CALEY & WHITMORE CORPORATION	\$48,885.00
P-2. 11/3/15	<b>DISPOSE OF AND/OR RECYCLE EXCAVATED MATERIAL</b> AWARD OF A ONE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER TO DISPOSE OF AND/OR RECYCLE MATERIAL EXCAVATED BY MWRA. DURING A TYPICAL PIPELINE CONSTRUCTION PROJECT THAT IS PERFORMED BY MWRA STAFF, EXCAVATIONS GENERATE ROADWAY AND GRAVEL MATERIAL. TYPICALLY, MWRA STAFF BRING THE EXCAVATED MATERIALS BACK TO THE CHELSEA FACILITY WHERE IT IS STORED UNTIL ENOUGH MATERIAL HAS BEEN COLLECTED. THE EXCAVATED MATERIAL IS THEN LOADED INTO AN MWRA TRUCK AND TRANSPORTED TO A LANDFILL FOR DISPOSAL. TO ENSURE MAXIMUM EFFICIENCY AND TO PREVENT LONG TRIPS TO THE VENDOR'S SITE, MWRA BID SPECIFICATIONS REQUIRED THAT THE SITE BE LOCATED WITHIN A 15-MILE RADIUS OF THE CHELSEA FACILITY.	WRA-4099		NORTHGATE RECYCLING, INC.	\$100,000.00
P-3. 11/4/15	<b>THIRTY NEW VEHICLES</b> AWARD OF THREE SEPARATE PURCHASE ORDERS TO THE LOWEST RESPONSIVE BIDDERS FOR THIRTY NEW VEHICLES. THE PROCUREMENT OF THESE 30 VEHICLES WAS RECOMMENDED IN ACCORDANCE WITH MWRA'S VEHICLE REPLACEMENT POLICY. ALL VEHICLES MEET OR EXCEED THE ESTABLISHED REPLACEMENT CRITERIA OF AGE AND/OR MILEAGE AND/OR CONDITION. OF THE 30 VEHICLES BEING REPLACED, 21 WILL BE IMMEDIATELY DECLARED SURPLUS. THE REMAINING 9 VEHICLES WILL BE REDEPLOYED TO THE FLEET POOL OR TO OTHER ASSIGNMENTS WITHIN THE AUTHORITY.	WRA-4077		BALISE CHEVROLET, INC. MHQ MUNICIPAL VEHICLES LIBERTY CHEVROLET INC.	\$162,703.00 \$247,750.00 \$836,444.00
P-4. 11/5/15	<b>VARIABLE FREQUENCY DRIVES AND KEYPADS</b> AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR VARIABLE FREQUENCY DRIVES AND KEYPADS FOR THE DEER ISLAND TREATMENT PLANT. DITP STAFF STARTED PLANNING FOR VFD UPGRADES TO AVOID VFD FAILURES, WHICH RESULT IN EXTENDED DOWNTIME AND REDUCED PUMPING CAPACITY. WHEN AN OBSOLETE VFD FAILS, DITP STAFF REPLACES THE OLD VFD BY INSTALLING NEW COMMANDER SK 4000 SERIES VFD AND KEYPAD FROM STOCKED MATERIAL FROM THE DITP WAREHOUSE. RECENT VFD AND KEYPAD REPLACEMENTS HAVE DEPLETED WAREHOUSE STOCK. CURRENTLY, DITP STAFF HAS SEVEN OPEN KITTING REQUESTS FOR REPLACEMENT VFDs AND KEYPADS. THIS PURCHASE REQUEST IS FOR 10 VFDs AND KEYPADS THAT WILL FILL THE OPEN KIT REQUESTS AND REPLENISH INVENTORY STOCK MATERIAL FOR FUTURE ADDITIONAL AS NEEDED VFD REPLACEMENT.	WRA-4097Q		MOTION INDUSTRIES	\$28,080.00
P-5. 11/5/15	<b>FOUR OZONE GAS FLOW METERS</b> AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR FOUR OZONE GAS FLOW METERS FOR THE JOHN J. CARROLL WATER TREATMENT PLANT. AT THE JOHN J. CARROLL WATER TREATMENT PLANT (CWTP), MWRA STAFF, DUE TO THE REDUCTION IN AVERAGE DAILY FLOWS AND CHANGES IN OZONE PRODUCTION ASSOCIATED WITH THE ADDITION OF UV DISINFECTION, ARE REVIEWING PROCESS CONTROL INSTRUMENTATION. THE PLANT IS RUNNING BELOW ITS DESIGNED AVERAGE DAILY FLOW RATE AND HAS ALSO REDUCED OZONE PRODUCTION BECAUSE OF THE RECENT ADDITION OF UV DISINFECTION. AS A RESULT, THE OZONE GAS FLOW METERS ARE MEASURING FLOWS AT THE BOTTOM OF THEIR DESIGN RANGE. AN ANALYSIS OF ALTERNATE FLOW METER TECHNOLOGIES FOR MEASURING OZONE GAS FLOW WAS RECENTLY PERFORMED. THE RESULT OF THE ANALYSIS WAS THE RECOMMENDATION OF CORIOLIS MASS FLOWMETER TECHNOLOGY. ONCE THE NEW OZONE FLOW METERS ARE DELIVERED, MWRA STAFF WILL PROCEED WITH THE INSTALLATION OF THE NEW METERS INCLUDING MODIFICATIONS TO THE EXISTING OZONE FEED PIPING TO ACCOMMODATE THE NEW METERS.	WRA-4111		POND TECHNICAL SALES	\$50,085.16
P-6. 11/10/15	<b>UPGRADE OF THREE ALLEN BRADLEY VARIABLE FREQUENCY DRIVES</b> AWARD OF A SOLE SOURCE PURCHASE ORDER FOR THE UPGRADE OF THREE ALLEN BRADLEY VARIABLE FREQUENCY DRIVES AT THE HINGHAM PUMP STATION. THE FACILITY CURRENTLY HAS THREE FAIRBANKS MORSE VERTICAL, NON-CLOG CENTRIFUGAL PUMPS WITH 75-HORSEPOWER MOTORS AND VARIABLE FREQUENCY DRIVES (VFDs) THAT ARE CONTROLLED BY SCADA. VFD PARTS HAVE AN EXPECTED USEFUL LIFE OF APPROXIMATELY TEN YEARS; THE CURRENT VFD PARTS ARE APPROXIMATELY NINE YEARS OLD AND ARE REACHING THE END OF THEIR RELIABLE, USEFUL SERVICE LIFE. STAFF RECOMMENDED UPGRADES AT THE HINGHAM PUMP STATION TO AVOID VFD FAILURES THAT RESULT IN EXTENDED DOWNTIME AND REDUCED PUMPING CAPACITY.			NORTHEAST ELECTRICAL DISTRIBUTORS, INC.	\$27,702.78
P-7. 11/10/15	<b>TWO VARIABLE FREQUENCY DRIVES</b> AWARD OF A CRITICAL NEED PURCHASE ORDER FOR TWO VARIABLE FREQUENCY DRIVES FOR THE CARUSO PUMP STATION. THE PUMP STATION HAS FOUR 21 MGD DRY WEATHER PUMPS AND THREE 50 MGD PUMPS. TWO OF THE 21 MGD PUMPS ARE CURRENTLY UNAVAILABLE DUE TO VARIABLE FREQUENCY DRIVE (VFD) FAILURES. STAFF HAD BEEN IN THE PROCESS OF PROCURING REPLACEMENT VFDs FOR BOTH OF THESE PUMPS AFTER THE RECENT FAILURE OF THE VFD ON ONE OF THE 21 MGD PUMPS, WHEN THE VFD ON A SECOND 21 MGD PUMP FAILED, PLACING CARUSO PUMP STATION BELOW THE MINIMUM ALLOWABLE DRY WEATHER PUMP AVAILABILITY FOR THAT FACILITY.			NORTHEAST ELECTRICAL DISTRIBUTORS, INC.	\$30,087.00
P-8. 11/10/15	<b>REPLACEMENT PARTS FOR THE ACTIVATED SLUDGE PUMPS</b> AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR REPLACEMENT PARTS FOR THE ACTIVATED SLUDGE PUMPS AT THE DEER ISLAND TREATMENT PLANT.	WRA-4116		DIVERSIFIED PUMP COMPANY	\$79,572.00
P-9. 11/10/15	<b>FIFTEEN ELECTRIC BURDEN CARRIERS</b> AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR FIFTEEN ELECTRIC BURDEN CARRIERS FOR THE DEER ISLAND TREATMENT PLANT. DEER ISLAND TREATMENT PLANT (DITP) STAFF PERFORM MULTIPLE JOB RELATED ACTIVITIES AND TASKS ALL AROUND THE LARGE EXPANSE OF THE DITP AND ITS NUMEROUS BUILDINGS AND FACILITIES ON A DAILY BASIS. THE EXPANSIVE NATURE OF DITP'S TERRAIN REQUIRES USE OF ELECTRIC BURDEN CARRIERS TO ENSURE THE MOST EFFICIENT TRANSPORT OF STAFF, TOOLS, EQUIPMENT, AND SUPPLIES. USING THESE SMALLER ELECTRIC VEHICLES IS LESS COSTLY THAN CONVENTIONAL VEHICLES, IN ADDITION TO BEING SIGNIFICANTLY MORE ENVIRONMENTALLY FRIENDLY. IN FY12, MWRA BEGAN A SYSTEMATIC REPLACEMENT PLAN UNDER WHICH NEW EVs ARE PURCHASED EACH FISCAL YEAR TO REPLACE ONES NO LONGER IN USE.	WRA-4102		NORTHERN INDUSTRIAL TRUCK CO.	\$144,735.00

NO.	TITLE AND EXPLANATION	CONTRACT #	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-10. 11/10/15	<p><b>DATA DIODE HARDWARE AND SOFTWARE</b></p> <p>AWARD OF A SOLE SOURCE PURCHASE ORDER FOR DATA DIODE HARDWARE AND SOFTWARE FOR THE PICS EMERSON OVATION SYSTEM AT THE DEER ISLAND TREATMENT PLANT. MWRA'S PROCESS INFORMATION AND CONTROL SYSTEM ("PICS") ON DEER ISLAND IS ONE OF THE LARGEST INSTALLATIONS OF ITS KIND IN THE UNITED STATES. THOUSANDS OF FIELD INSTRUMENTATION DEVICES ARE USED TO GATHER PROCESS INFORMATION SUCH AS; TEMPERATURES, PRESSURES, FLOWS, AND ON/OFF STATES OF REMOTE EQUIPMENT. THESE DEVICES ARE WIRED BACK TO A DISTRIBUTED CONTROL SYSTEM ("DCS"), WHICH CONSISTS OF 64 CONTROL CABINETS LOCATED AT VARIOUS LOCATIONS AROUND THE 150-ACRE SITE. SECURITY ACCESS PROTECTION BETWEEN THE CORPORATE (THE NETWORK USED BY MWRA STAFF TO SEND E-MAILS, SHARE FILES, ETC.) AND PICS NETWORKS IS HANDLED BY FIREWALLS. IDAHO NATIONAL LABS TESTED A DATA DIODE DEVELOPED BY ONE OF TWO KNOWN PROVIDERS AND STRONGLY RECOMMENDED THE TECHNOLOGY TO MWRA AS A REPLACEMENT FOR FIREWALLS. THE DATA DIODE TECHNOLOGY PHYSICALLY PREVENTS INFORMATION FROM TRAVELING FROM THE CORPORATE NETWORK TO THE PICS NETWORK. THIS ONE WAY COMMUNICATION PREVENTS OUTSIDE CYBER INTRUSIONS FROM ACCESSING OR ALTERING ANY DATA ON THE PICS NETWORK.</p>			EMERSON PROCESS MANAGEMENT POWER & WATER SOLUTIONS, INC.	\$163,130.00
P-11. 11/10/15	<p><b>SUPPLY, DELIVERY AND DISPOSAL OF REGENERATED ACTIVATED CARBON</b></p> <p>AWARD OF A THREE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY, DELIVERY AND DISPOSAL OF REGENERATED ACTIVATED CARBON FOR THE DEER ISLAND TREATMENT PLANT ODOR CONTROL FACILITIES. THE PRIMARY CLARIFIERS, SECONDARY REACTORS, AND GRAVITY THICKENERS, AS WELL AS AIR FROM GRIT REMOVAL, CENTRIFUGE OPERATIONS, AND PUMP STATION WET WELLS, MUST BE DRAWN OFF AND TREATED. TO REDUCE THESE COMPOUNDS AS REQUIRED, DTP CAN OPERATE WITH EITHER SINGLE-STAGE OR DUAL-STAGE ODOR CONTROL SYSTEMS, USING WET SCRUBBERS AND/OR CARBON ADSORBERS. CARBON ADSORPTION DRUMS ARE EFFECTIVE AT REMOVING LOW LEVELS OF HYDROGEN SULFIDE AND VOLATILE ORGANIC COMPOUNDS. THERE ARE 29 CARBON ADSORPTION DRUMS THROUGHOUT THE PLANT OF VARYING CAPACITIES, RANGING FROM 12,000 TO 31,000 POUNDS. A DRUM IS REMOVED FROM SERVICE FOR CARBON REPLACEMENT WHEN THE AIR SAMPLES FROM THE OUTERMOST LAYER OF THE CARBON BED INDICATE THAT THE CARBON IS NO LONGER EFFECTIVELY REMOVING THE TARGET COMPOUNDS.</p>	WRA-4100		CARBON ACTIVATED CORPORATION	\$964,125.00
P-12. 11/16/15	<p><b>RENEWAL OF AUTOCAD SUBSCRIPTION</b></p> <p>APPROVAL OF A PURCHASE ORDER UNDER THE FEDERAL GSA COOPERATIVE PURCHASING PROGRAM FOR MAINTENANCE, AND SUPPORT OF AUTOCAD PRODUCTS. THE AUTOCAD AGREEMENT PROVIDES FOR A CONSOLIDATED RENEWAL OF ALL AUTOCAD PRODUCTS AND SOFTWARE LICENSES; STANDARD SOFTWARE UPDATES, ONLINE TECHNICAL ASSISTANCE, ENHANCEMENTS TO THE PRODUCTS AND FLEXIBLE LICENSING (TO BE ABLE TO USE THE SOFTWARE IN MULTIPLE VERSIONS AND AT MULTIPLE PC'S OVER THE MWRA NETWORK). THE ANNUAL AGREEMENT COVERS AUTOCAD MAP 3D, RASTER DESIGN, CIVIL 3D, AND AUTOCAD LITE.</p>	GS-35F-4543G		DLT SOLUTIONS INC.	\$29,417.38
P-13. 11/16/15	<p><b>DIVING SERVICES</b></p> <p>AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER TO PROVIDE DIVING SERVICES FOR WATER SAMPLING LINES AT THE WACHUSETT RESERVOIR. AS PART OF THE WACHUSETT WATER SAMPLING PROJECT, THE AUTHORITY PLANS TO INSTALL AN 8FT X 10FT PRE-FABRICATED CONCRETE STRUCTURE ON THE SHORE OF THE WACHUSETT RESERVOIR TO HOUSE WATER QUALITY SAMPLING EQUIPMENT. THE PURPOSE OF THIS EQUIPMENT IS TO MONITOR WATER ENTERING THE WACHUSETT RESERVOIR FROM THOMAS BASIN FOR POTENTIAL CONTAMINATES 24 HOURS A DAY 365 DAYS A YEAR. UNDER THIS CONTRACT, THREE 1-INCH HIGH DENSITY POLYETHYLENE SAMPLING LINES, AND A SINGLE RETURN LINE, WILL RUN FROM THE PRE-FABRICATED BUILDING DOWN INTO THE RESERVOIR CHANNEL TO THE SAMPLING LOCATIONS. THE SAMPLING LINES WILL RUN BELOW THE WATER SURFACE OF THE RESERVOIR FROM THE WATERLINE OF THE RESERVOIR SHORE TO THE SAMPLING INTAKE LOCATIONS IN THE CHANNEL. THIS PORTION OF THE SAMPLING LINE PLACEMENT MUST BE PERFORMED BY TRAINED, CERTIFIED, AND EXPERIENCED DIVERS.</p>	WRA-4119Q		DIVING SERVICES, INC.	\$32,998.00
P-14. 11/24/15	<p><b>SIX 14" INFLUENT SLIDE GATES</b></p> <p>AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR SIX 14-INCH INFLUENT SLIDE GATES FOR THE DEER ISLAND TREATMENT PLANT. THERE ARE FORTY-EIGHT PRIMARY CLARIFIERS ON DEER ISLAND THAT REMOVE FLOATABLE SCUM AND SETTLEABLE SOLIDS, OR SLUDGE. EACH CLARIFIER HAS A SET OF EIGHT 14-INCH DIAMETER INFLUENT SLUICE GATES. THE GATES OPERATE ON A CONTINUOUS BASIS IN SUBMERGED RAW WASTEWATER. OVER TIME, THE CORROSIVENESS OF WASTEWATER AFFECT THE ABILITY OF THE GATES TO PROVIDE LEAK-FREE ISOLATION OF THE CLARIFIER OR A TIGHT SEAL ON THE DEWATERING GATES. THE ORIGINAL INFLUENT SLIDE GATES WERE MANUFACTURED BY RODNEY HUNT COMPANY AND INSTALLED UNDER THE BOSTON HARBOR PROJECT APPROXIMATELY 20 YEARS AGO AND HAVE EXCEEDED THEIR USEFUL SERVICE LIFE. THIS PURCHASE IS FOR SIX SPARE 14-INCH INFLUENT SLIDE GATE DISC AND FRAME ASSEMBLIES FOR WAREHOUSE STOCK WHICH WILL ENABLE STAFF TO REPLACE FAILED GATES ON AN AS-NEEDED BASIS UNTIL ALL OF THE SLIDE GATES ARE REPLACED UNDER THE UPCOMING CLARIFIER REHABILITATION, PHASE 2 PROJECT.</p>	WRA-4108Q		MCMANUS AND ASSOCIATES	\$34,194.00
P-15. 11/24/15	<p><b>UNDERWATER INSPECTION SERVICES</b></p> <p>AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER TO PROVIDE UNDERWATER INSPECTION SERVICES AT THE NUT ISLAND HEADWORKS. WITH THE COMMISSIONING OF THE NUT ISLAND HEADWORKS AND CROSS-HARBOR TUNNEL IN 1998, WASTEWATER IS NOW SENT TO DEER ISLAND TREATMENT PLANT FOR TREATMENT AND DISCHARGE OUT THE NINE MILE OCEAN OUTFALL IN MASSACHUSETTS BAY. THE NUT ISLAND OUTFALLS ARE NOW ONLY USED FOR EMERGENCY DISCHARGE OF UNTREATED WASTEWATER. THE FACILITY "PLAN OF OPERATION" APPROVED BY MA DEP IN 1992 REQUIRES PERIODIC INSPECTION AND PREVENTIVE MAINTENANCE TO KEEP THE OUTFALLS FUNCTIONAL. IN 2011, MWRA'S ENQUAL DEPARTMENT PREPARED A MAINTENANCE AND INSPECTION PLAN. THIS PLAN RECOMMENDS THAT THE OUTFALLS ARE TO BE INSPECTED EVERY FIVE YEARS. UNDER THIS CONTRACT, THE CONTRACTOR WILL PERFORM AN INTERNAL INSPECTION OF THREE SUBMERGED OUTFALL CONDUITS AT THE NUT ISLAND HEADWORKS. ALL WORK WILL BE PERFORMED BY DIVERS AND/OR BY REMOTE SENSING. UPON COMPLETION OF THE INSPECTION, THE CONTRACTOR WILL PREPARE A WRITTEN REPORT DOCUMENTING THE FINDINGS OF THE INSPECTION AND SUBMIT THE FINDINGS TO THE AUTHORITY.</p>	WRA-4083		CORRTECH, INC.	\$74,900.00




NO.	TITLE AND EXPLANATION	CONTRACT #	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-16. 11/24/15	<p><b>UNINTERRUPTIBLE POWER SUPPLY SYSTEMS (UPS)</b>            AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE PURCHASE OF TWO UNINTERRUPTIBLE POWER SUPPLY (UPS) UNITS FOR THE OPERATIONS CONTROL CENTER AND THE EMERGENCY OPERATIONS CENTER. PRESENTLY, THE CHELSEA OPERATIONS CONTROL CENTER (OCC) AND EMERGENCY OPERATIONS CENTER (EOC) COMPUTERS ARE SUPPLIED POWER VIA TWO UPS UNITS. THE COMPUTERS IN THE OCC ARE USED TO SUPPORT THE SCADA SYSTEM FOR BOTH WATER AND WASTEWATER OPERATIONS FOR THE METROPOLITAN AREA. THE COMPUTER AND VIDEO MONITORING SCREENS IN THE EOC ARE USED FOR EMERGENCY OPERATIONS AND TO AID MANAGEMENT IN DECISION MAKING AT CRITICAL OPERATIONS PERIODS. THE TWO UPS UNITS HAVE BEEN IN OPERATION SINCE 2001. THE UPS MAINTENANCE CONTRACTOR HAS SUGGESTED, DURING A RECENT MAINTENANCE SESSION, THAT THE EXISTING UNITS ARE REACHING A LEVEL OF OBSOLESCENCE THAT MAKES IT DIFFICULT TO OBTAIN SPARE PARTS TO KEEP THEM FUNCTIONAL IN THE EVENT OF A FAILURE. TWO NEW UNITS WITH THE LATEST CURRENT TECHNOLOGY WERE SPECIFIED BY MWRA'S E&amp;C TECHNICAL SUPPORT STAFF. THE DESIGN OF THE NEW UNITS TOOK INTO ACCOUNT THE PRESENT LAYOUT OF THE EXISTING ELECTRICAL LOAD CONNECTED TO EACH UPS, OTHER ELECTRICAL DATA AND THE CURRENT TECHNOLOGY AVAILABLE.</p>	WRA-4117Q		ELECTRONICS ENVIRONMENTS CORP.	\$83,960.00
P-17. 11/24/15	<p><b>SUPPLY AND DELIVERY OF FERRIC/FERROUS CHLORIDE</b>            AWARD OF A ONE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY AND DELIVERY OF FERRIC/FERROUS CHLORIDE TO THE DEER ISLAND TREATMENT PLANT, FOR THE PERIOD OF JANUARY 1, 2016 TO DECEMBER 31, 2016.</p>	WRA-4114		KEMIRA WATER SOLUTIONS, INC.	\$940,000.00

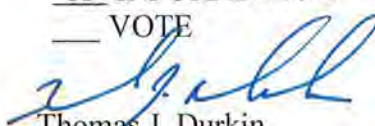
## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** December 16, 2015  
**SUBJECT:** FY16 Financial Update and Summary

COMMITTEE: Administration, Finance & Audit

INFORMATION  
 VOTE

  
 Kathy Soni, Budget Director  
David Whelan, Budget Manager  
 Preparer/Title

  
Thomas J. Durkin  
 Director, Finance

### RECOMMENDATION:

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

### DISCUSSION:

Total year-to-date expenses are lower than budget by \$12.0 million or 4.2% and total revenues were higher than budget by \$1.4 million or 0.5% for a net variance of \$13.4 million.

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

	FY16 Budget	FY16 Actual	\$ Variance	% Variance
Direct Expenses	\$86.8	\$84.9	-\$1.9	-2.2%
Indirect Expenses	\$22.5	\$22.1	-\$0.4	-1.8%
Debt Service	\$177.9	\$168.2	-\$9.7	-5.4%
<b>Total</b>	<b>\$287.1</b>	<b>\$275.2</b>	<b>-\$11.9</b>	<b>-4.2%</b>

The variances through November by major categories were:

- Lower Direct Expenses of \$1.9 million for Wages and Salaries, Workers' Compensation, Utilities, Other Services, Professional Services, and Fringe Benefits. This is offset by higher spending for Other Material, Maintenance, and Overtime;
- Lower Indirect Expenses of \$401,000 for lower Watershed reimbursements and lower insurance costs, mostly for claims.
- Lower Debt Service Expense of \$9.7 million due to favorable short-term interest rates of \$6.5 million and the impact of defeasances related to reserve releases and for not borrowing senior debt scheduled for November.

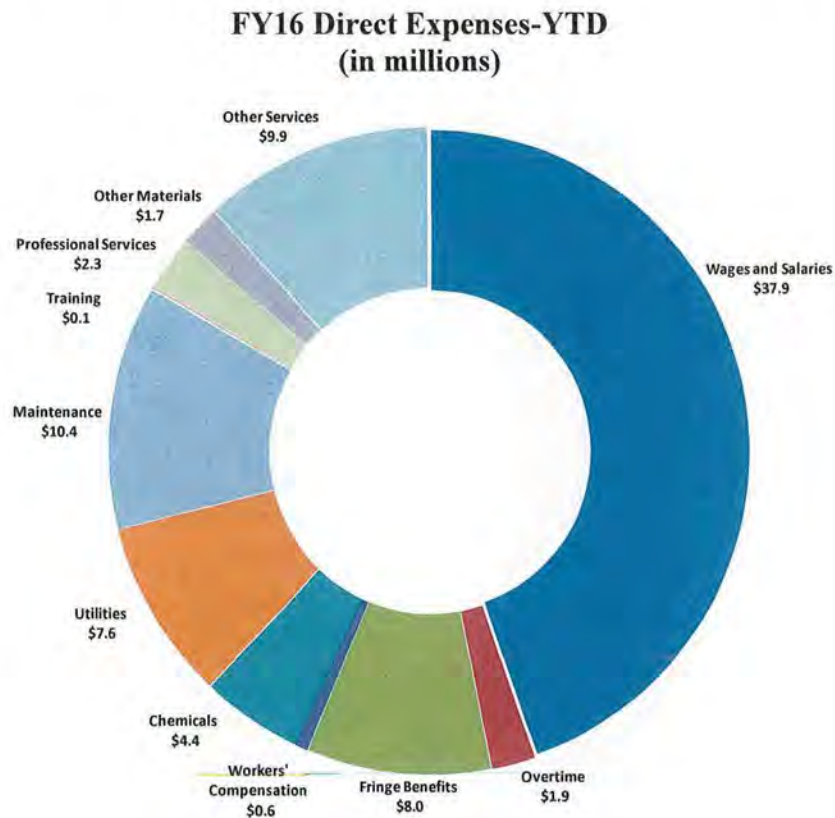
- Revenues exceeded budget by \$1.4 million due to higher non-rate revenue and more than budgeted investment income.

In December, staff intend to once again deposit favorable debt service savings in the defeasance account which will be used for targeted defeasance in the spring. Targeted defeasances are a critical component of the Authority's multi-year rate management strategy.

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

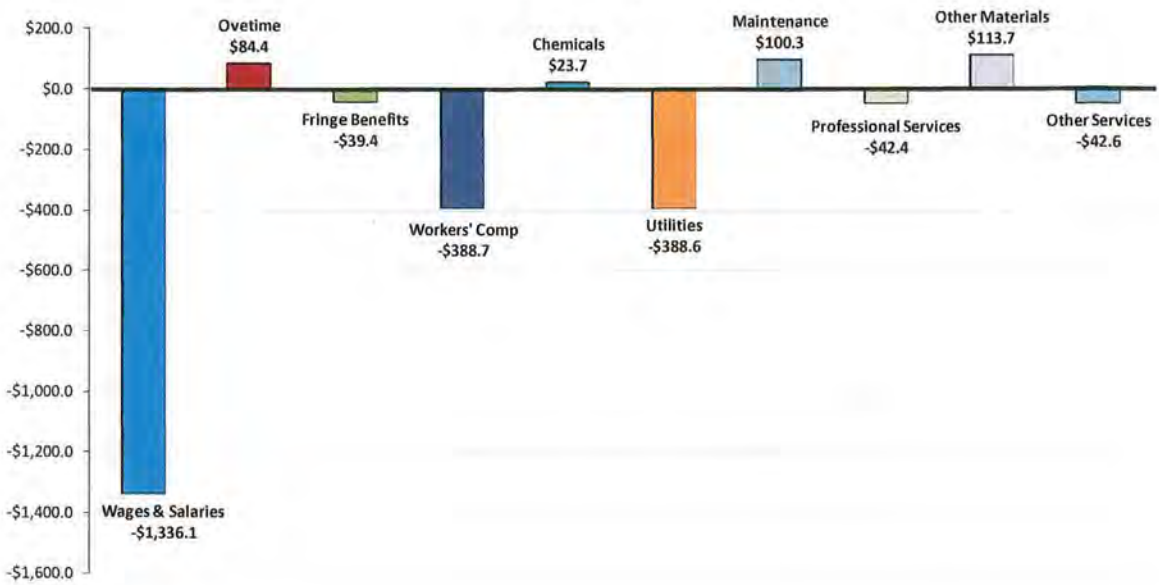
**Direct Expenses**

Year-to-date direct expenses totaled \$84.9 million, \$1.9 million or 2.2% less than budgeted.



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

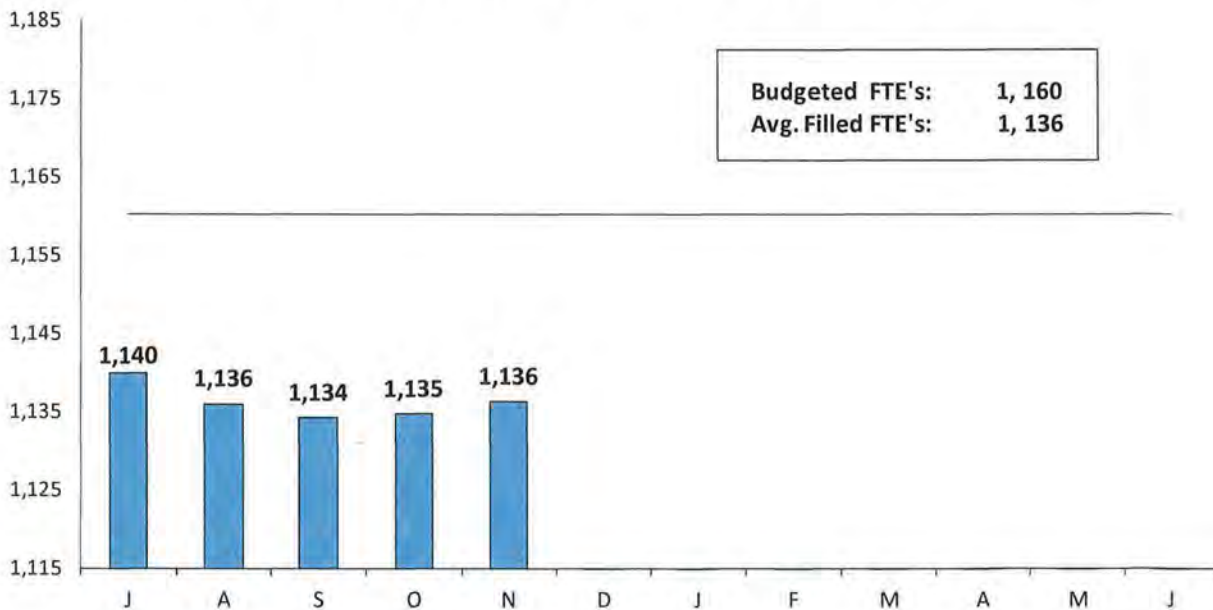
### FY16 Direct Expense Variance (in 000's)



### Wages and Salaries

Wages and Salaries were underspent by \$1,336,000 or 3.4% mainly as a result of lower average Full Time Equivalent positions (FTEs) than budgeted and the timing of back filling vacant positions and the salary mix differential between staff retiring and new hires. The average FTEs through October were 1,136, which was 24 positions lower than the 1,160 FTEs budgeted. Additionally, the Authority had two temporary employees.

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

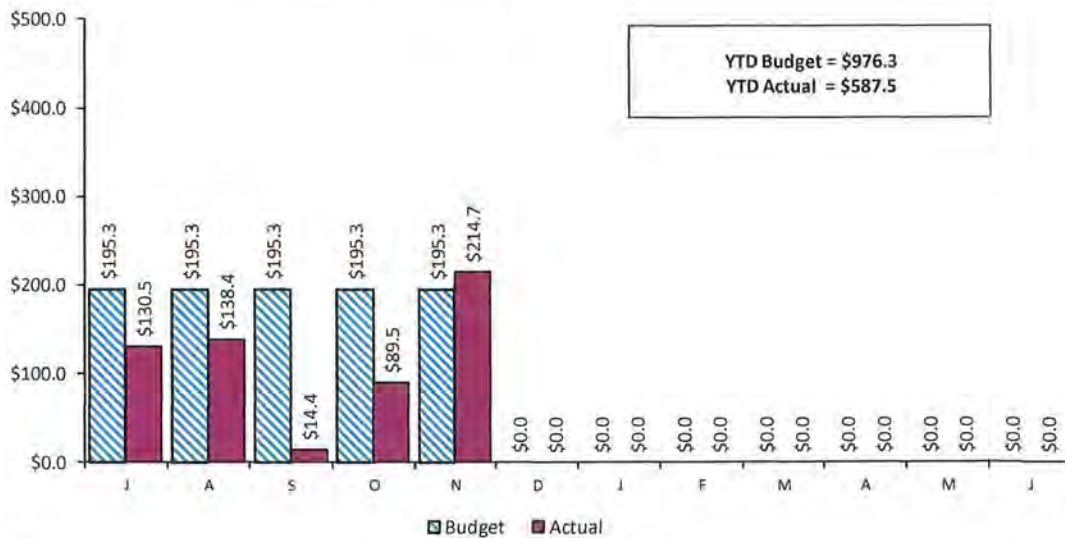


In November 2015, the Authority had 1,144 filled positions vs. 1,170 budgeted positions.

### Workers' Compensation

Workers' Compensation expenses were lower than budget by \$389,000 or 39.8% based on lower compensation payments of \$225,000 and medical expenses of \$161,000. In November, actual spending was \$19,000 over budget. The year to date favorable variance is the result of lump sum settlements in prior periods, thus lowering reserves. It is important to note that spending on this line item can change significantly depending on future claims and severity of cases.

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



# of Open Claims-Lost Time	62	61	62	62	63	0	0	0	0	0	0	0
# of Open Claims-Medical Only	22	17	23	23	23	0	0	0	0	0	0	0

### Utilities

Utilities were underspent \$389,000 or 4.8% for lower Electricity of \$700,000 mainly due to underspending at Deer Island of \$721,000 for over accrual at the end of FY15, lower commodity and transmission and distribution costs, and lower flows which resulted in less pumping demand. This was offset by higher spending on Diesel Fuel of \$285,000 due the early purchase for Deer Island to take advantage of low market pricing. In September, 294,000 gallons of diesel fuel were purchased at a cost of \$1.57/gallon versus a budgeted price of \$2.75/gallon planned for March 2016.

### Other Services

Other Services were lower than budget by \$43,000 or 0.4% due to lower spending of \$61,000 for Grit and Screenings disposal services primarily due to lower quantities; \$51,000 for sludge pelletization services for lower year to date tonnage; \$42,000 for Space Lease Rentals for the Chelsea facility lease due to an overpayment of escrow for insurance; \$30,000 for Other Rentals; and \$14,000 for Health & Safety Services. The underspending is offset by higher spending on

Telephone Services of \$69,000 associated with Field Operations SCADA lines for the water and wastewater facilities; Other Services of \$68,000 for Ward Street Headworks radio tower demolition; and Membership/Dues/Subscription of \$51,000.

### **Professional Services**

Professional Services spending was lower than budget by \$42,000 or 1.8% primarily associated with Lab Testing & Analysis of \$64,000 in ENQUAL-Wastewater; Engineering of \$43,000 at Deer Island and Reservoir Operations; Resident Inspection of \$25,000 in Reservoir Operations; and Legal of \$17,000 in Law and HR. This is offset by higher spending in Treasury.

### **Fringe Benefits**

Fringe Benefits spending is lower than budget by \$39,000 or 0.5% for Health Insurance of \$72,000 and Dental Insurance of \$18,000 due to fewer than budgeted filled positions. This is offset by higher spending in Unemployment Insurance of \$26,000 and Medicare costs of \$17,000.

### **Other Materials**

Other Materials were higher than budget by \$113,000 or 7.1% mainly due to the timing of Vehicle Purchase of \$157,000; Computer Hardware of \$93,000 and Lab and Testing Supplies of \$54,000 mainly due to receipt of equipment ordered in FY15 and received in the first Quarter of FY16, and Health & Safety of \$34,000. The overspending is offset by lower spending for Vehicle Expense of \$126,000 mostly due to lower fuel prices; Other Materials of \$53,000 due to timing and Equipment and Furniture purchases of \$47,000.

### **Maintenance**

Maintenance expenses were higher than budgeted by \$100,000 or 1.0% year-to-date. Services were underspent by \$551,000 primarily due to schedule shifts for several projects planned for this year. Materials were overspent by \$651,000. Some projects such as the CTG maintenance, the roller gates refurbishments and the digester mixer replacement at Deer Island were delayed, and some materials such as transfer switches for Water Pump Stations and a forklift scheduled for FY15 was received this year. Maintenance expenses are projected to be close to budget by year-end.

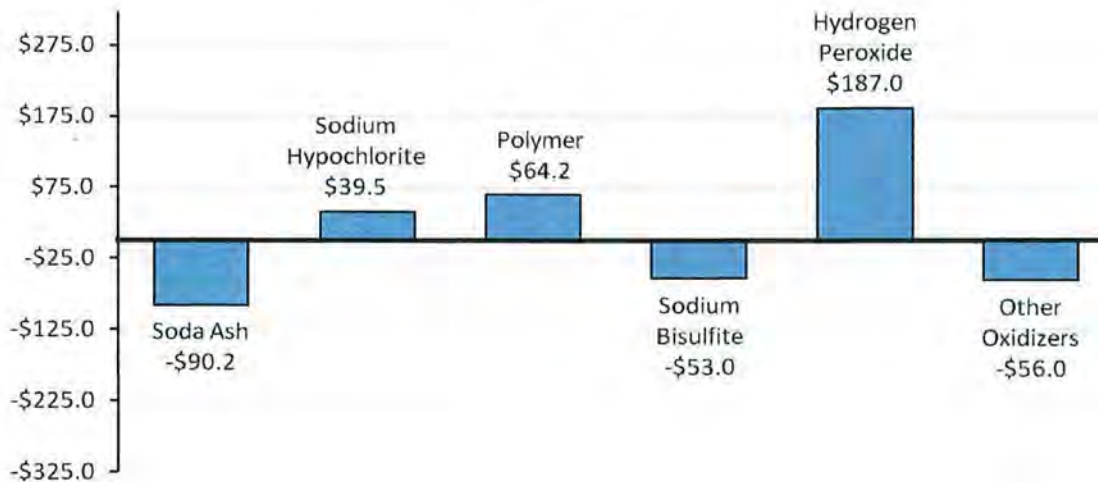
### **Overtime**

Overtime expenses were higher than budgeted by \$84,000 or 4.7% for greater spending in Water Valve Maintenance to reconfigure system flows associated with providing Lynn water, responding to a Cambridge water main break, and start-up at Spot Pond, and Treatment and Transmission Operation for half plant maintenance at Carroll Water Treatment Plant. This is offset by fewer wet weather events and shutdowns related to the North Main Pump Station valve replacement project.

## Chemicals

Chemical expenses were higher than budgeted by \$24,000 or 0.5% year-to-date mainly due to higher than budgeted Hydrogen Peroxide of \$187,000 due to increased need for pretreatment of hydrogen sulfide gas due to lower than budgeted plant flows; Polymer of \$64,000 due to treating high volume of sludge; and Sodium Hypochlorite at DITP due to timing of deliveries and Wastewater Operations due to higher hydrogen sulfide gas levels and use of wet scrubbers at Nut Island Headworks. This is offset by underspending on Soda Ash of \$90,000 and Carbon Dioxide of \$9,000 due to lower usage to meet corrosion control targets and timing of deliveries for Soda Ash; Other Oxidizers of \$56,000 due to timing of deliveries and lower pricing for the new contract; and Sodium Bisulfite of \$53,000 due to time of deliveries at DITP and lower usage at the Carroll Water Treatment Plant for Ozone residual removal.

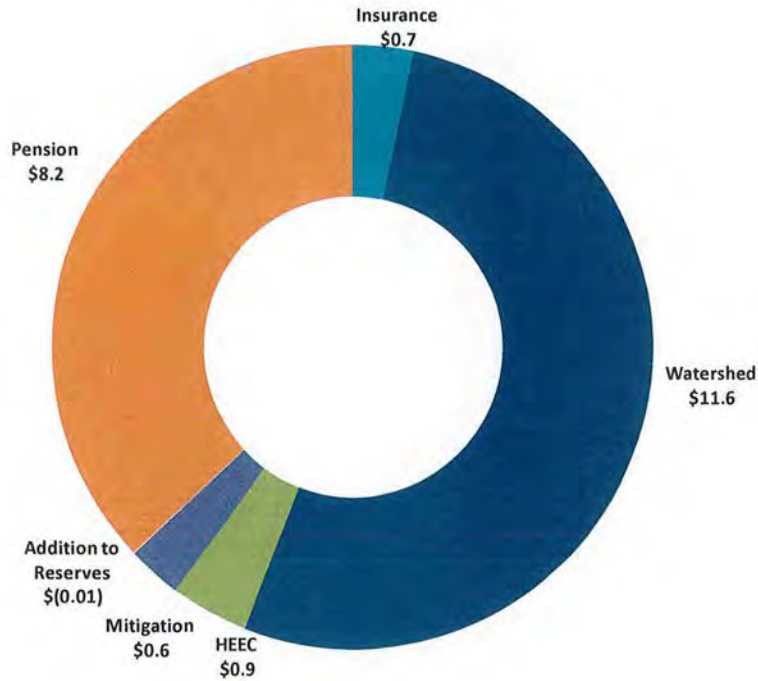
**FY16 Chemical Expense Variances**  
(in 000's)



## Indirect Expenses

Through November Indirect expenses total \$22.1million, \$401,000 or 1.8% lower than budget. The majority of the FY16 underspending is related to lower Watershed Reimbursement of \$255,000 for FY15 over accrual and lower Insurance costs of \$180,000 mostly related to claims. Offset by higher spending of \$51,000 for Winthrop and Quincy mitigation.

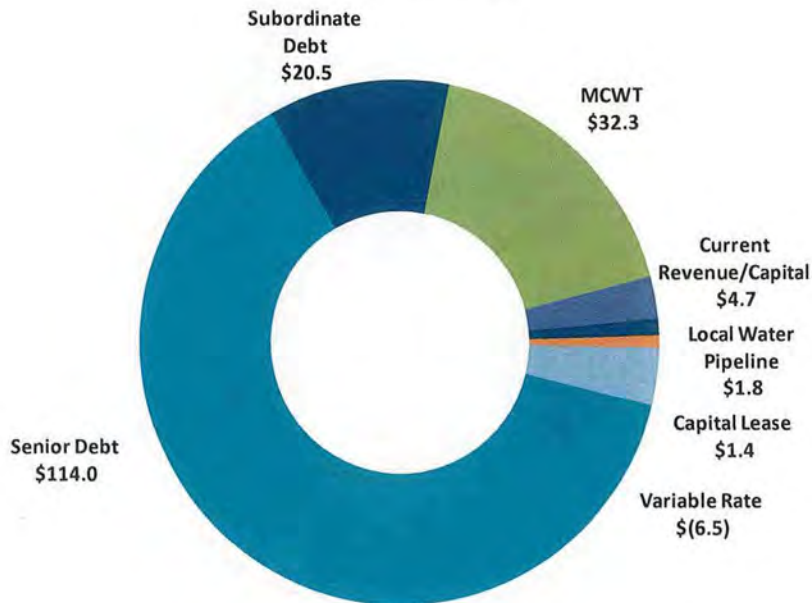
**FY16 Indirect Expenses-YTD  
(in millions)**



**Debt Service Expenses**

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

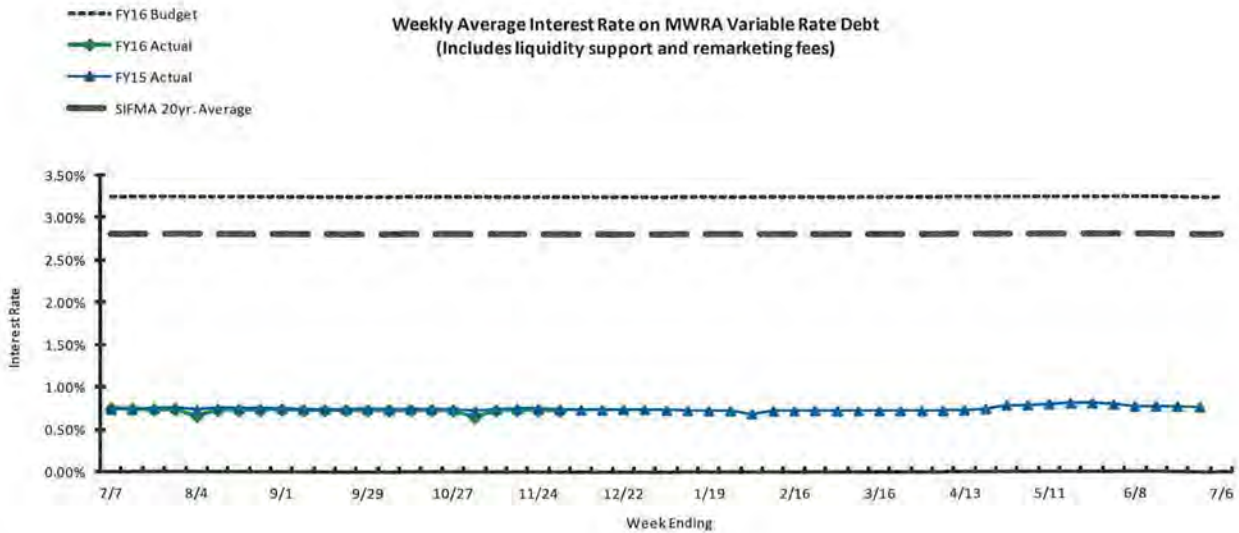
**FY16 Debt Expenses-YTD  
(in millions)**





Debt Service expenses YTD November totaled \$168.2 million which was \$9.7 million or 5.4% lower than budget. Of the \$9.7 million, \$6.5 million is due to the low short-term interest rates and \$3.2 million is the favorable impact of defeasances related to reserve releases and for not borrowing senior debt scheduled for November.

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



## Revenue

Revenue for year to date through November totaled \$302.6 million which was \$1.4 million or 0.5% higher than budget.

The higher non-rate Revenue is due to \$561,000 for TRAC Penalties attributed to a large settlement with a company who had a series of discharge violations to the MWRA sewer, which since then has been addressed and corrective measures were implemented; \$294,000 for Energy Revenue due to timing, higher Miscellaneous Revenue of 184,000, higher surplus equipment sales of \$175,000, and greater Investment Income of \$159,000.

The higher Investment Income of \$159,000 is primarily due to investments called sooner than projected that provided gains on investments not budgeted. This positive variance will erode as long-term funds are reinvested at lower rates than the called investments. Short-term interest rates are higher than budgeted which also had a slightly favorable impact on the investment income variance.

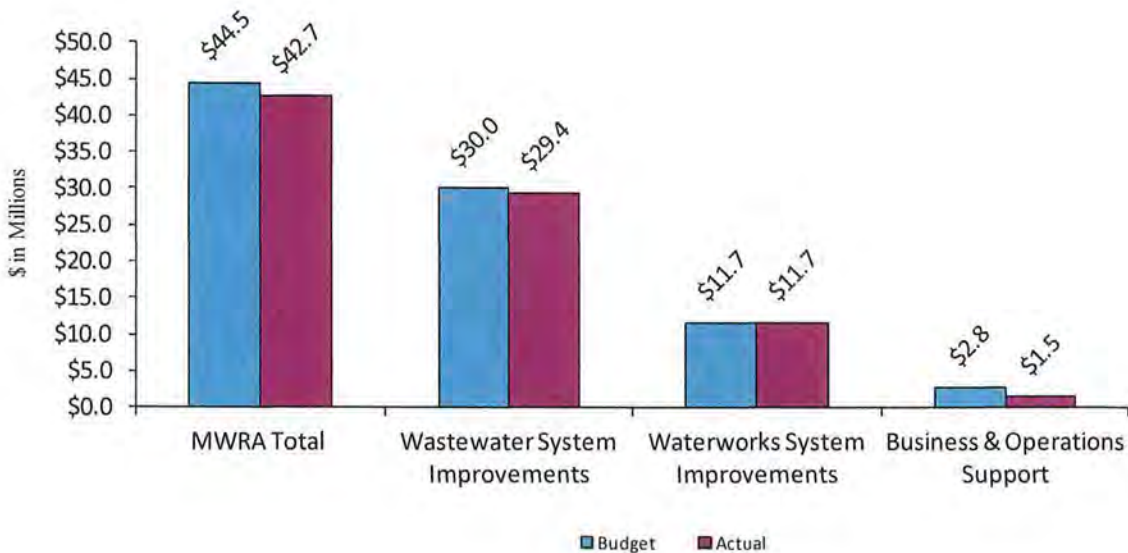
Please refer to Attachment 2 for a more detailed comparison by line item.

## FY16 Capital Improvement Program

Spending year-to-date in FY16 totals \$42.7 million, \$1.8 million or 4.1% below budget. After accounting for programs which are not directly under MWRA's control, most notably the Inflow and Infiltration (I/I) program, the Local Water Pipeline program, and the community managed Combined Sewer Overflow (CSOs) projects, underspending is \$4.5 million or 14.8%. Underspending was reported in Business and Operations Support of \$1.3 million, and Wastewater of \$572,000.

Spending By Program:

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



\$ in Millions	Budget	Actuals	\$ Var.	% Var.
<b>Wastewater System Improvements</b>				
Interception & Pumping	2.3	1.2	-1.1	-46.5%
Treatment	13.3	11.2	-2.2	-16.3%
Residuals	0.0	0.0	0.0	N/A
CSO	6.6	13.9	7.3	109.2%
Other	7.7	3.1	-4.6	-59.5%
<b>Total Wastewater System Improvements</b>	<b>\$30.0</b>	<b>\$29.4</b>	<b>-\$0.6</b>	<b>-1.9%</b>
<b>Waterworks System Improvements</b>				
Drinking Water Quality Improvements	3.3	3.3	0.0	-0.4%
Transmission	1.5	1.0	-0.5	-32.6%
Distribution & Pumping	6.2	7.2	1.0	16.1%
Other	0.6	0.1	-0.5	-77.4%
<b>Total Waterworks System Improvements</b>	<b>\$11.7</b>	<b>\$11.7</b>	<b>\$0.0</b>	<b>0.2%</b>
<b>Business &amp; Operations Support</b>	<b>\$2.8</b>	<b>\$1.5</b>	<b>-\$1.3</b>	<b>-45.4%</b>
<b>Total MWRA</b>	<b>\$44.5</b>	<b>\$42.7</b>	<b>-\$1.8</b>	<b>-4.1%</b>

The main reasons for underspending were:

1. **Wastewater Other** of \$4.6 million – primarily due to less than anticipated community requests for grants and loans.
2. **Wastewater Treatment** of \$2.2 million – underspending on As-Needed Design 7-2 and 7-3 of \$601,000, North Main Pump Station VFD Replacement of \$512,000, Clinton Digester Cleaning & Rehab of \$335,000, Butterfly Valve Replacement of \$272,000, and Clarifier Rehab Phase 2 - Design of \$149,000 due to timing, Steam Turbine Generator System Modifications Construction of \$450,000 due to energy efficiency rebate from Eversource, and other smaller projects totaling \$255,000. Partially offset by overspending on HVAC Equipment Replacement Design/Engineering Services During Construction of \$214,000 due to timing, and Scum Skimmer Replacement of \$187,000 due to contractor progress.
3. **Business and Operations Support** of \$1.3 million – mainly for lower than budgeted spending for Security Equipment of \$434,000 due to delay in award of monitoring equipment and network upgrade contracts, Capital Maintenance Planning & Development of \$424,000 due to lower than projected use of as-needed technical assistance, and MIS-related projects of \$393,000 due to timing of IT Strategic Plan implementation.
4. **Interception & Pumping** of \$1.1 million – reflecting underspending on Chelsea Creek Screen House of \$1.1 million due to timing and Chelsea Creek Upgrade Design of \$188,000.
5. **Waterworks Transmission** of \$499,000 – underspending for Spot Pond Storage Facility of \$499,000 due to timing of work, Watershed Land of \$342,000 due to the timing of land acquisitions, and Long Term Redundancy of \$319,000 due to schedule changes and alternative analysis combined with underspending on the Hultman Interconnect Design of \$73,000. Offset by Hatchery Pipeline Design/Engineering Services During Construction/Resident Engineer Inspection of \$245,000 due to consultant progress and scope changes.
6. **Waterworks Other** of \$461,000 – due to lower community requests partially offset by an amended community repayment schedule approved by the Board after the submittal of the FY16 budget.

Underspending was offset by overspending on the following programs:

1. **Combined Sewer Overflow (CSO)** of \$7.3 million – due to the Cambridge water use of \$5.6M and updated cost estimates of approximately \$2.1 million due to unforeseen utility locations and private utility coordination, subsurface conditions, and additional engineering services during construction, partially offset by MWR003 Gate & Siphon of \$421,000 due to timing.

2. **Water Distribution and Pumping** of \$1.0 million – mainly for Spot Pond Supply Mains Rehabilitation of \$771,000 due to progress on Webster Avenue Bridge Construction and Weston Aqueduct Supply Mains Section 36/W11 C/S 9-All Valve of \$692,000, partially offset by WASM 3 Design of \$240,000 due to schedule shift, Valve Replacement of \$139,000, and NIH Redundancy & Storage of \$103,000.

### **Construction Fund Balance**

The construction fund balance was at \$50.0 million as end of November. Commercial Paper availability was at \$301.0 million to fund construction projects.

Attachment 1 – Variance Summary November 2015

Attachment 2 – Current Expense Variance Explanations

Attachment 3 – Capital Improvement Program Variance Explanations

ATTACHMENT 1

	November 2015 Year-to-Date					
	Period 5 YTD Budget	Period 5 YTD Actual	Period 5 YTD Variance	%	FY16 Approved	% Expended
<b>EXPENSES</b>						
WAGES AND SALARIES	\$ 39,284,229	\$ 37,948,086	\$ (1,336,143)	-3.4%	\$ 99,363,168	38.2%
OVERTIME	1,779,223	1,863,663	84,440	4.7%	4,219,293	44.2%
FRINGE BENEFITS	8,000,099	7,960,705	(39,394)	-0.5%	19,326,756	41.2%
WORKERS' COMPENSATION	976,250	587,529	(388,721)	-39.8%	2,343,000	25.1%
CHEMICALS	4,337,106	4,360,762	23,656	0.5%	9,790,848	44.5%
ENERGY AND UTILITIES	8,034,816	7,646,224	(388,592)	-4.8%	23,164,822	33.0%
MAINTENANCE	10,302,699	10,402,966	100,267	1.0%	28,698,772	36.2%
TRAINING AND MEETINGS	106,592	113,800	7,208	6.8%	413,714	27.5%
PROFESSIONAL SERVICES	2,373,349	2,330,985	(42,364)	-1.8%	5,819,611	40.1%
OTHER MATERIALS	1,605,982	1,719,684	113,702	7.1%	6,164,589	27.9%
OTHER SERVICES	9,988,516	9,945,903	(42,613)	-0.4%	23,529,902	42.3%
<b>TOTAL DIRECT EXPENSES</b>	<b>\$ 86,788,861</b>	<b>\$ 84,880,307</b>	<b>\$ (1,908,552)</b>	<b>-2.2%</b>	<b>\$ 222,834,475</b>	<b>38.1%</b>
<b>INDIRECT EXPENSES</b>						
INSURANCE	\$ 914,183	\$ 734,315	\$ (179,868)	-19.7%	\$ 2,160,797	34.0%
WATERSHED/PILOT	11,886,868	11,631,756	(255,112)	-2.1%	28,096,233	41.4%
BEC <sub>o</sub> PAYMENT	949,393	933,019	(16,374)	-1.7%	1,946,157	47.9%
MITIGATION	592,308	643,077	50,769	8.6%	1,400,000	45.9%
ADDITIONS TO RESERVES	(14,777)	(14,777)	-	0.0%	(34,927)	42.3%
RETIREMENT FUND	8,159,521	8,159,521	-	0.0%	8,159,521	100.0%
POST EMPLOYEE BENEFITS	-	-	-	---	5,224,848	0.0%
<b>TOTAL INDIRECT EXPENSES</b>	<b>\$ 22,487,496</b>	<b>\$ 22,086,911</b>	<b>\$ (400,585)</b>	<b>-1.8%</b>	<b>\$ 46,952,629</b>	<b>47.0%</b>
<b>DEBT SERVICE</b>						
STATE REVOLVING FUND	\$ 32,337,044	\$ 32,337,044	\$ -	0.0%	\$ 81,876,277	39.5%
SENIOR DEBT	117,156,736	113,954,934	(3,201,802)	-2.7%	283,024,431	40.3%
CORD FUND	-	-	-	---	-	---
DEBT SERVICE ASSISTANCE	-	-	-	---	-	---
CURRENT REVENUE/CAPITAL	4,738,462	4,738,462	-	0.0%	11,200,000	42.3%
SUBORDINATE MWRA DEBT	20,510,074	20,510,074	-	0.0%	49,222,442	41.7%
LOCAL WATER PIPELINE CP	1,755,448	1,755,448	-	0.0%	4,149,240	42.3%
CAPITAL LEASE	1,361,065	1,361,065	-	0.0%	3,217,060	42.3%
VARIABLE DEBT	-	(6,457,003)	(6,457,003)	---	-	0.0%
BOND REDEMPTION SAVINGS	-	-	-	---	-	---
DEFEASANCE ACCOUNT	-	-	-	---	-	---
<b>TOTAL DEBT SERVICE</b>	<b>\$ 177,858,829</b>	<b>\$ 168,200,023</b>	<b>\$ (9,658,806)</b>	<b>-5.4%</b>	<b>\$ 432,689,450</b>	<b>38.9%</b>
<b>TOTAL EXPENSES</b>	<b>\$ 287,135,186</b>	<b>\$ 275,167,241</b>	<b>\$ (11,967,944)</b>	<b>-4.2%</b>	<b>\$ 702,476,554</b>	<b>39.2%</b>
<b>REVENUE &amp; INCOME</b>						
RATE REVENUE	\$ 284,493,846	\$ 284,493,846	\$ -	0.0%	\$ 672,440,000	42.3%
OTHER USER CHARGES	3,910,683	3,972,279	61,596	1.6%	8,683,898	45.7%
OTHER REVENUE	9,026,421	10,191,920	1,165,499	12.9%	12,000,066	84.9%
RATE STABILIZATION	-	-	-	---	-	---
INVESTMENT INCOME	3,818,431	3,977,688	159,257	4.2%	9,352,590	42.5%
<b>TOTAL REVENUE &amp; INCOME</b>	<b>\$ 301,249,381</b>	<b>\$ 302,635,733</b>	<b>\$ 1,386,352</b>	<b>0.5%</b>	<b>\$ 702,476,554</b>	<b>43.1%</b>

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

Total MWRA	FY16 Budget YTD November	FY16 Actuals YTD November	FY16 YTD Actual vs. FY16 Budget		Explanations
			\$	%	
<b>Direct Expenses</b>					
Wages & Salaries	39,284,229	37,948,086	(1,336,143)	-3.4%	Underspending is mainly the result of lower average Full Time Equivalent positions (FTEs) than budgeted and the timing of backfilling vacant positions and the salary mix differential between staff retiring and new hires. The average FTEs through November were 1,136, which was 24 positions lower than the 1,160 FTEs budgeted. Additionally, the Authority had two temporary employees.
Overtime	1,779,223	1,863,663	84,440	4.7%	Overspending mainly in Water Valve Maintenance to reconfigure system flows associated with providing Lynn water, responding to a Cambridge water main break, and start-up at Spot Pond, and Treatment and Transmission Operation for half plant maintenance at Carroll Water Treatment Plant. This is offset by fewer wet weather events and shutdowns related to the North Main Pump Station valve replacement project..
Fringe Benefits	8,000,099	7,960,705	(39,394)	-0.5%	Lower than budget mainly due to Health Insurance of \$72,000 and Dental Insurance of \$18,000 due to lower headcount offset by overspending for Unemployment Insurance of \$26,000 and Medicare of \$17,000.
Worker's Compensation	976,250	587,529	(388,721)	-39.8%	Underspending due to lower compensation payments of \$225,000 and medical expenses of \$161,000. In November, actual spending was \$19,000 over budget. The year to date favorable variance is the result of lump sum settlements in prior periods, thus lowering reserves. It is important to note that spending on this line item can change significantly depending on future claims and severity of cases.
Chemicals	4,337,106	4,360,762	23,656	0.5%	Higher year-to-date spending primarily due to higher than budgeted Hydrogen Peroxide of \$187,000 due to increased need for pretreatment of hydrogen sulfide gas due to lower than budgeted plant flows; Polymer of \$64,000 due to treating high volume of sludge; and Sodium Hypochlorite due to DITP for timing of deliveries and Wastewater Operations due to higher hydrogen sulfide gas levels and use of wet scrubbers at Nut Island Headworks. This is offset by underspending on Soda Ash of \$90,000 and Carbon Dioxide of \$9,000 due to lower usage to meet corrosion control targets and timing of deliveries for Soda Ash; Other Oxidizers of \$56,000 due to timing of deliveries and lower pricing for the new contract; and Sodium Bisulfite of \$53,000 due to time of deliveries at DITP and lower usage at the Carroll Water Treatment Plant for Ozone residual removal
Utilities	8,034,816	7,646,224	(388,592)	-4.8%	Underspending due to lower Electricity of \$700,000 mainly due to underspending at Deer Island of \$721,000 for over accrual at the end of FY15, lower commodity and transmission and distribution costs, and lower flows which resulted in less pumping demand. This was offset by higher spending on Diesel Fuel of \$285,000 due the early purchase for Deer Island to take advantage of low market pricing. In September, 294,000 gallons of diesel fuel were purchased at a cost of \$1.57/gallon versus a budgeted price of \$2.75/gallon planned for March 2016.

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

Total MWRA	FY16 Budget YTD November	FY16 Actuals YTD November	FY16 YTD Actual vs. FY16 Budget		Explanations
			\$	%	
Maintenance	10,302,699	10,402,966	100,267	1.0%	Services were underspent by \$551,000 primarily due to schedule shifts for several projects planned for this year. Materials were overspent by \$651,000. Some projects such as the CTG maintenance, the roller gates refurbishments and the digester mixer replacement at Deer Island were delayed, and some materials such as transfer switches for Water Pump Stations and a forklift scheduled for FY15 was received this year. Maintenance expenses are projected to be close to budget by year-end.
Training & Meetings	106,592	113,800	7,209	6.8%	Higher spending primarily associated with timing of Operations and MIS training initiatives. This is offset by lower spending in Fleet Services for training of mechanics.
Professional Services	2,373,349	2,330,985	(42,364)	-1.8%	Lower spending on Lab Testing & Analysis of \$64,000 in ENQUAL-Wastewater; Engineering of \$43,000 at Deer Island and Reservoir Operations; Resident Inspection of \$25,000 in Reservoir Operations; and Legal of \$17,000 in Law and HR. This is offset by higher spending in Other in Treasury.
Other Materials	1,605,982	1,719,684	113,702	7.1%	Higher than budget mainly due to timing of Vehicle Purchase of \$157,000 due to timing; Computer Hardware of \$93,000 and Lab and Testing Supplies of \$54,000 mainly due to receipt of equipment ordered in FY15 and received in the first Quarter of FY16, and Health & Safety of \$34,000. The overspending is offset by lower spending for Vehicle Expense of \$126,000 mostly due to lower fuel prices; Other Materials of \$53,000 due to timing and Equipment and Furniture purchases of \$47,000.
Other Services	9,988,516	9,945,903	(42,613)	-0.4%	Lower than budgeted spending of \$61,000 for Grit and Screenings disposal services primarily due to lower quantities; \$51,000 for sludge pelletization services for lower year to date tonnage; \$42,000 for Space Lease Rentals for the Chelsea facility lease due to an overpayment of escrow for insurance; \$30,000 for Other Rentals; and \$14,000 for Health & Safety Services. The underspending is offset by higher spending on Telephone Services of \$69,000 associated with Field Operations SCADA lines for the water and wastewater facilities; Other Services of \$68,000 for Ward Street Headworks radio tower demolition; and Membership/Dues/Subscription of \$51,000.
<b>Total Direct Expenses</b>	<b>86,788,861</b>	<b>84,880,307</b>	<b>(1,908,552)</b>	<b>-2.2%</b>	

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

Total MWRA	FY16 Budget YTD November	FY16 Actuals YTD November	FY16 YTD Actual vs. FY16 Budget		Explanations
			\$	%	
<b>Indirect Expenses</b>					
Insurance	914,183	734,315	(179,868)	-19.7%	Lower Payments/Claims of \$130,000 and Premiums of \$49,000.
Watershed/PILOT	11,886,868	11,631,756	(255,112)	-2.1%	Underspending due to lower Reimbursement expenses of \$255k due to FY15 overaccrual.
HEEC Payment	949,393	933,019	(16,374)	-1.7%	Lower O&M charges.
Mitigation	592,308	643,077	50,769	8.6%	
Addition to Reserves	(14,777)	(14,777)	-	0.0%	
Pension Expense	8,159,521	8,159,521	-	0.0%	
Post Employee Benefits	-	-	-		
<b>Total Indirect Expenses</b>	<b>22,487,496</b>	<b>22,086,911</b>	<b>(400,585)</b>	<b>-1.8%</b>	
<b>Debt Service</b>					
Debt Service	177,858,829	168,200,023	(9,658,806)	-5.4%	\$6.5 million of the variance is due to the low short-term interest rates and \$3.2 million is the favorable impact of defeasances related to reserve releases and not borrowing senior debt that was scheduled for November.
Debt Service Assistance	-	-	-		
<b>Total Debt Service Expenses</b>	<b>177,858,829</b>	<b>168,200,023</b>	<b>(9,658,806)</b>	<b>-5.4%</b>	
<b>Total Expenses</b>	<b>287,135,186</b>	<b>275,167,241</b>	<b>(11,967,944)</b>	<b>-4.2%</b>	
<b>Revenue &amp; Income</b>					
Rate Revenue	284,493,846	284,493,846	-	0.0%	
Other User Charges	3,910,683	3,972,279	61,596	1.6%	
Other Revenue	9,026,421	10,191,920	1,165,499	12.9%	TRAC penalty payment of \$565,000, higher Energy revenue of \$294,000 due to timing, Miscellaneous Revenue of \$184,000 and sale of surplus equipment of \$175,000.
Rate Stabilization	-	-	-		
Investment Income	3,818,431	3,977,688	159,258	4.2%	The higher Investment Income of \$159,000 is primarily due to investments called sooner than projected that provided gains on investments not budgeted. This positive variance will erode as long-term funds are reinvested at lower rates than the called investments. Short-term interest rates are higher than budgeted which also had a slightly favorable impact on the investment income variance.
<b>Total Revenue</b>	<b>301,249,381</b>	<b>302,635,733</b>	<b>1,386,353</b>	<b>0.5%</b>	
<b>Net Revenue in Excess of Expenses</b>	<b>14,114,195</b>	<b>27,468,490</b>	<b>13,354,297</b>		




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

	FY16 Budget YTD November	FY16 Actuals YTD November	YTD Actuals vs. Budget		Explanations
			\$	%	
Interception & Pumping (I&P)	\$2,291	\$1,225	(\$1,066)	-46.5%	Underspending mainly due to Chelsea Screenhouse Upgrades of \$1.1M due to timing, and other smaller projects totaling \$230,000. Offset by Nut Island Headworks Electric, Grit & Screenings Conveyance Design and Construction of \$247,000 due to progress.
Treatment	\$13,335	\$11,162	(\$2,173)	-16.3%	Underspending on As-Needed Design 7-2 and 7-3 of \$601,000, North Main Pump Station VFD Replacement of \$512,000, Clinton Digester Cleaning & Rehab of \$335,000, Butterfly Valve Replacement of \$272,000, and Clarifier Rehab Phase 2 - Design of \$149,000 due to timing, Steam Turbine Generator System Modifications Construction of \$450,000 due to energy efficiency rebate from Eversource, and other smaller projects totaling \$255,000. Offset by overspending on HVAC Equipment Replacement Design/Engineering Services During Construction of \$214,000 due to timing, and Scum Skimmer Replacement of \$187,000 due to contractor progress.
Residuals	\$0	\$0	\$0	-	
CSO	\$6,645	\$13,902	\$7,257	109.2%	Overspending on Cambridge Sewer Separation of \$7.7M due to water use during construction activities and updated cost estimates as a result of additional unforeseen conditions. Offset by MWR003 Gate & Siphon of \$421,000 due to timing.
Other Wastewater	\$7,718	\$3,129	(\$4,590)	-59.5%	Underspending on Infiltration and Inflow (I/I) due to community requests for grants and loans being less than budgeted.
<b>Total Wastewater</b>	<b>\$29,990</b>	<b>\$29,417</b>	<b>(\$572)</b>	<b>-1.9%</b>	
Drinking Water Quality Improvements	\$3,317	\$3,303	(\$14)	-0.4%	Underspending due to timing of work and weather delays for Spot Pond Storage Facility of \$499,000. Offset by overspending primarily on Existing Facilities CP-7 of \$362,000 and Carroll Water Treatment Plant's Ultraviolet Disinfection - Design/Engineering Services During Construction/Resident Engineer Inspection of \$221,000 due to timing.

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

	FY16 Budget YTD November	FY16 Actuals YTD November	YTD Actuals vs. Budget		Explanations
			\$	%	
Transmission	\$1,531	\$1,032	(\$499)	-32.6%	Underspending for Watershed Land of \$342,000 due to the timing of land acquisitions and Long Term Redundancy of \$319,000 due to schedule change for Wachusett Aqueduct Pump Station and alternative analysis. Offset by Hatchery Pipeline Design/Engineering Services During Construction/Resident Engineer Inspection of \$245,000 due to consultant progress and scope changes.
Distribution & Pumping	\$6,239	\$7,241	\$1,002	16.1%	Overspending on Spot Pond Supply Mains Rehab of \$771,000 mainly for Section 4 Webster Avenue Bridge Pipe Rehabilitation - Construction, and Weston Aqueduct Supply Mains Section 36/C/S9 - A11 Valve of \$692,000 due to contractor progress. Offset by WASM 3 - MEPA/Design/CA/RI of \$240,000 due to schedule shift, Valve Replacement of \$139,000 and NIH Redundancy & Storage of \$103,000.
Other Waterworks	\$595	\$135	(\$461)	-77.4%	Underspending due to lower community requests for Local Water System Loans and an amended community repayment schedule approved by the Board after the submittal of the FY16 budget.
<b>Total Waterworks</b>	<b>\$11,682</b>	<b>\$11,711</b>	<b>\$29</b>	<b>0.2%</b>	
Business & Operations Support	\$2,832	\$1,547	(\$1,285)	-45.4%	Underspending on Security Equipment of \$434,000 due to delay in award of network upgrade and monitoring equipment contracts, Capital Maintenance Planning & Development of \$424,000 due to lower than projected use of as-needed technical assistance, and MIS-related projects of \$393,000 due to timing of IT Strategic Plan implementation.
<b>Total MWRA</b>	<b>\$44,504</b>	<b>\$42,675</b>	<b>(\$1,829)</b>	<b>-4.1%</b>	

## STAFF SUMMARY

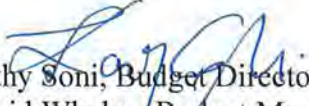
**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** December 16, 2015  
**SUBJECT:** Transmittal of the FY17 Proposed Capital Improvement Program


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COMMITTEE: Administration, Finance & Audit

VOTE

INFORMATION

  
Kathy Soni, Budget Director  
David Whelan, Budget Manager  
Preparer/Title

  
Thomas J. Durkin,  
Director, Administration and Finance

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### RECOMMENDATION:

To approve the transmittal of the FY17 Proposed Capital Improvement Program (CIP) to the Advisory Board for its 60-day review and comment period.

### DISCUSSION:

The Fiscal Year 2017 Proposed Capital Improvement Program (CIP) represents an update to the program approved by the Board in June 2015 for Fiscal Year 2016. The Proposed CIP includes the latest cost estimates, revised schedules, and new projects.

The FY17 Proposed Capital Improvement Program projects \$160.1 million spending for FY17, of which \$87.3 million supports Wastewater System Improvements, \$61.0 million supports Waterworks System Improvements, and \$11.9 million is for Business and Operations Support.

The single largest change to the Program is the updated plan to address critical redundancy improvements for the City Tunnel, the City Tunnel Extension and the Dorchester Tunnel. For the past few years, the CIP has included funding for various alternatives to accomplish this, such as the rehabilitation of sections of the Weston Aqueduct Supply Mains and the sliplining of the Sudbury Aqueduct. The FY16 CIP included \$518 million for these projects. Based on the current range of options, the placeholder value in the FY17 CIP increases that amount by \$882 million to \$1.4 billion.

After extensive review and evaluation, staff are planning a series of presentations to the Board of Directors over the next several months - working closely with the Advisory Board - on project need, evaluation of alternatives, affordability and next steps in the hopes that a decision on whether to proceed and which option to pursue be reached by June, when the Final FY17 CIP is approved.

Another significant development in establishing the FY17 Proposed CIP was the acceleration of critical pipeline rehabilitation projects both in the Water and Wastewater systems. This is in direct response to the Advisory Board's recommendation to "replace" projects which might be delayed for a variety of reasons.

In FY16 the Authority awarded large projects including the construction of the Wachusett Aqueduct Pump Station, the Alewife Brook Pump Station Rehabilitation, the NIH Section 89/29 Redundancy Construction, and the Deer Island Fuel System Modification project, which will all contribute to higher spending in the next few years. The award of the Chelsea Headworks Upgrade Construction contract is scheduled for Spring of FY16.

The highest spending projects in FY17 account for over 56% of total annual spending and includes expenditures for Wachusett Aqueduct Pump Station Construction, Chelsea Creek Upgrade Construction, NIH Section 89/29, Alewife Brook Pump Station Rehabilitation, and the Deer Island North Main Pump Station variable frequency drives and valve Replacements.

It is important to note that The MWRA continues to reduce debt levels, paying more in principal than capital improvement spending.

### The Five-Year Spending Cap

MWRA established its first five-year Cap in FY03 covering the FY04-08 period. The intent of the Cap was to create a ceiling or not-to-exceed amount for spending over a five-year period. The goal of the Cap is to control spending while still ensuring an adequate level of investment to support the core operational needs of the Authority.

### FY14-18 Base-Line Cap

The FY14 Final CIP established the FY14-18 Base-Line Cap at \$791.7 million with the following breakdown. FY17 is the fourth year of the Base-Line Cap.

FY14-18 Base-Line Cap		FY14	FY15	FY16	FY17	FY18	Total FY14-18
	Projected Expenditures	\$142.5	\$147.6	\$149.3	\$141.8	\$136.8	\$718.0
Contingency	7.6	9.5	10.1	9.8	9.3	46.1	
Inflation on Unawarded Construction	0.8	4.2	8.4	11.1	13.5	37.9	
Less: Chicopee Valley Aqueduct Projects	(5.0)	(2.2)	(1.4)	(1.3)	(0.4)	(10.3)	
<b>FY14-18 Base-Line Cap</b>	<b>\$145.8</b>	<b>\$159.1</b>	<b>\$166.4</b>	<b>\$161.3</b>	<b>\$159.1</b>	<b>\$791.7</b>	

In FY15, at the recommendation of the Advisory Board, the Base-Line Cap was modified to exclude Community Assistance Programs from the Cap calculation which resulted in a net change of \$4.7 million (restated Cap would be ~\$787.0 million).

Based on the FY17 Proposed CIP, the five-year spending is now at \$656.9 million, with some cash flow changes between the years based on the latest cost estimates and updated schedules. The exclusion of the Community Assistance Programs from the Cap calculation account for \$68.8 million of the total \$134.7 million underspending.

The FY14-18 Cap based on the FY17 Proposed CIP complies with the overall Cap requirement.

## FY17 Proposed Cap Spending versus the Base-Line Cap

FY17 Proposed		FY14	FY15	FY16	FY17	FY18	Total FY14-18
		Projected Expenditures	\$102.2	\$103.6	\$118.3	\$160.1	\$194.6
	Contingency	0.0	0.0	9.5	12.0	14.5	36.0
	Inflation on Unawarded Construction	0.0	0.0	2.1	5.3	11.1	18.5
	Less: I/I Program	0.0	(17.5)	(19.4)	(19.0)	(17.3)	(73.1)
	Less: Water Loan Program	0.0	1.4	1.4	2.0	(0.6)	4.3
	Less: Chicopee Valley Aqueduct Projects	(5.6)	(1.2)	(0.5)	(0.1)	(0.0)	(7.4)
	<b>FY17 Proposed FY14-18 Spending</b>	<b>\$96.6</b>	<b>\$86.3</b>	<b>\$111.4</b>	<b>\$160.4</b>	<b>\$202.2</b>	<b>\$656.9</b>

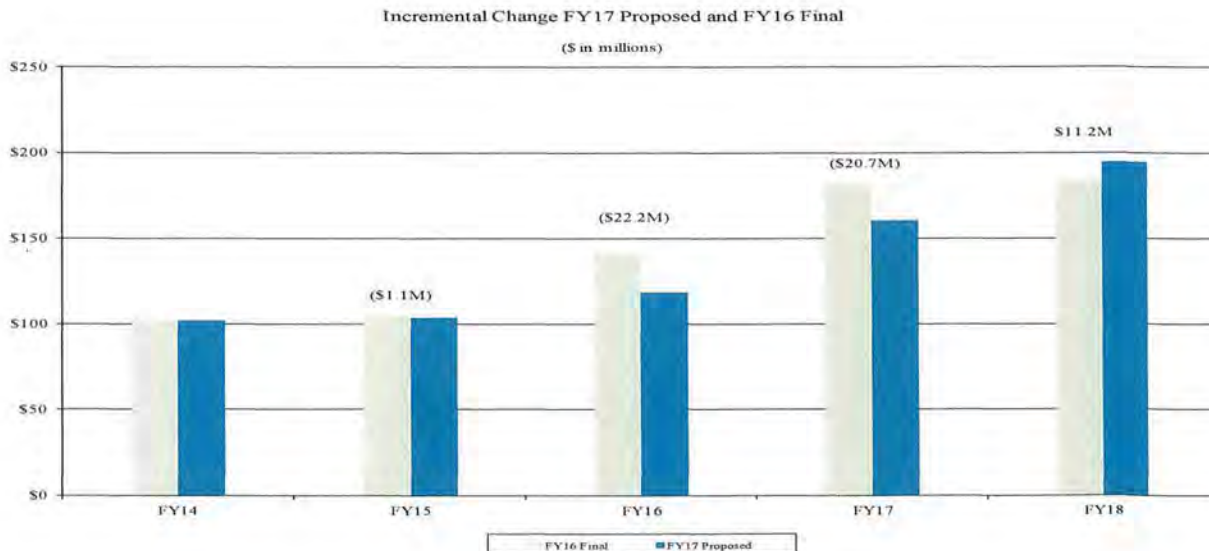
FY17 Proposed vs. FY14-18 Base-Line Cap		FY14	FY15	FY16	FY17	FY18	Total FY14-18
		Projected Expenditures	(\$40.3)	(\$43.9)	(\$31.1)	\$18.3	\$57.8
	Contingency	(7.6)	(9.5)	(0.6)	2.2	5.3	(10.1)
	Inflation on Unawarded Construction	(0.8)	(4.2)	(6.2)	(5.8)	(2.4)	(19.4)
	Less: I/I Program	0.0	(17.5)	(19.4)	(19.0)	(17.3)	(73.1)
	Less: Water Loan Program	0.0	1.4	1.4	2.0	(0.6)	4.3
	Less: Chicopee Valley Aqueduct Projects	(0.6)	0.9	0.9	1.2	0.4	2.9
	<b>FY14-18 Cap (\$ Change)</b>	<b>(\$49.2)</b>	<b>(\$72.7)</b>	<b>(\$54.9)</b>	<b>(\$0.9)</b>	<b>\$43.1</b>	<b>(\$134.7)</b>

## FY17 Proposed CIP Compared to the FY16 Final CIP by Program

The FY17 Proposed CIP increased by \$975.1 million versus the FY16 Final CIP approved by the Board of Directors in June 2015, with most of the additional spending in years outside of the current Cap period.

(000s)	FY16 Final	FY17 Proposed	\$ Change	% Change	FY16 Final FY14-18	FY17 Proposed FY14-18	FY14-18 \$ Change	FY14-18 % Change
<b>Total Wastewater</b>	\$ 2,974.6	\$3,062.3	\$ 87.7	2.9%	\$ 419.3	\$ 397.5	\$ (21.8)	-5.2%
<b>Total Waterworks</b>	\$ 2,909.4	\$3,790.6	\$ 881.1	30.3%	\$ 251.3	\$ 239.4	\$ (11.9)	-4.7%
<b>Business &amp; Operations Support</b>	\$ 128.4	\$ 134.7	\$ 6.3	4.9%	\$ 40.9	\$ 41.8	\$ 0.9	2.1%
<b>Total MWRA</b>	\$ 6,012.4	\$6,987.5	\$ 975.1	16.2%	\$ 711.5	\$ 678.7	\$ (32.8)	-4.6%

The chart below shows the incremental change between the FY17 Proposed CIP and the FY16 Final CIP by fiscal year.



Please refer to Attachment C for detailed changes at the project level for the FY14-18 Cap and potential spending beyond FY18.

### Major Planned Contract Awards for Fiscal Year 2017

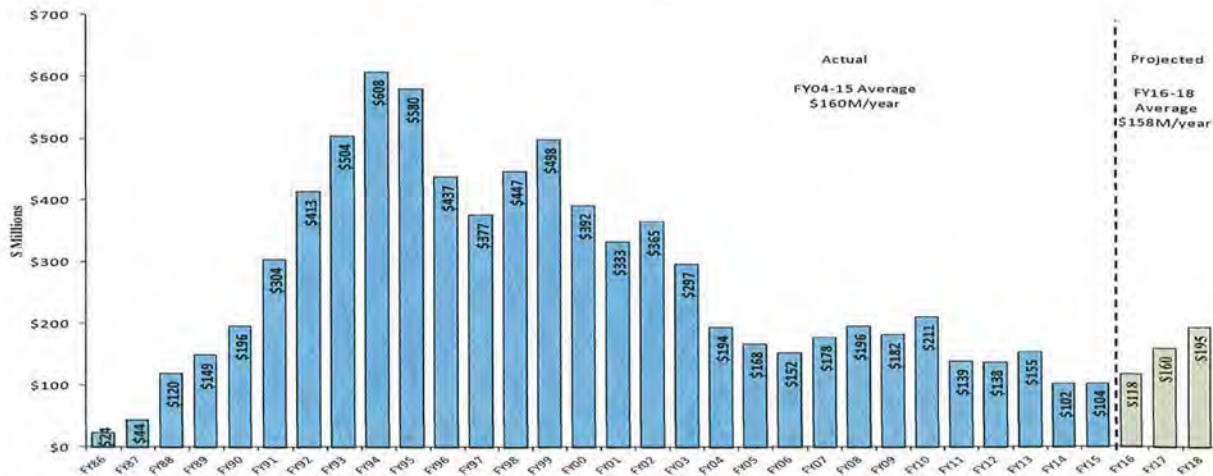
In FY17, 27 contracts totaling \$101.7 million are projected to be awarded. The largest ten projected contract awards total \$86.1 million and are listed below, accounting for over 84% of expected awards:

Project	Subphase	NTP	FY17 Proposed
NIH Redundancy & Storage	Sec 89 & 29 Redundancy Construction Phase 2	Jul-16	\$21.4
Central Monitoring System	Waterworks SCADA/PLC Upgrades	Oct-16	\$18.5
SEH Redundancy & Storage	Redundancy Pipeline Section III Construction 2	Jul-16	\$10.8
Residuals Asset Protection	Residuals Facility Upgrade-Construction	Jul-16	\$10.0
SEH Redundancy & Storage	Redundancy Pipeline Section III Construction 3	Oct-16	\$7.4
DI Treatment Plant Asset Protection	Future Miscellaneous VFD Replacements-Construction	May-17	\$5.3
Facility Asset Protection	IR-Construction 1 Reading Extension Sewer	Mar-17	\$4.3
Applicat Improvement Program	Enterprise Content Management	Aug-16	\$4.0
Alternative Energy Initiatives	DI Wind Phase II Construction	Jan-17	\$2.5
DI Treatment Plant Asset Protection	North Main Pump Station Motor Control Center Phase 2 Design/Engineering Services During Construction/Resident Engineer Inspection	Jul-16	\$2.0
<b>Top 10 Awards for FY17</b>			<b>\$86.1</b>
<b>27 Contract Awards Planned for FY17</b>			<b>\$101.7</b>

It is noteworthy that the amount of projected awards for FY17 is significantly lower than in FY16, reflecting the Authority’s intent to project more realistic goals.

### Historical Spending

The chart below captures the historical CIP spending through FY15 and projects spending to FY18 based on the FY17 Proposed CIP.



***Changing Nature of the Capital Program - Shift from Mandated Projects***

Since 1985, nearly 80% of the Authority’s spending had been on court mandated projects. Going forward, the majority of spending will support Asset Protection, Water System Redundancy, Pipeline Replacement and Rehabilitation, and continued support for Community Assistance programs. Asset Protection and Water System Redundancy spending is projected to rise from past levels and currently accounts for 53.0% and 27.5% of FY14-18 capital expenditures respectively, a total of nearly \$546.3 million of the \$678.7 million projected to be spent over the 5-year period.

	<b>FY14-18</b>	<b>FY19-23</b>	<b>Beyond 23</b>
Asset Protection	\$359.8	\$760.7	\$331.7
Carroll WTP	15.0	11.2	0.6
Water Redundancy	186.5	431.8	1156.7
CSO	65.9	3.0	0.0
Other	51.5	-6.3	-68.7
<b>Total</b>	<b>\$678.7</b>	<b>\$1,200.4</b>	<b>\$1,420.3</b>
<b>Asset Protection</b>	<b>53.0%</b>	<b>63.4%</b>	<b>23.4%</b>
Carroll WTP	2.2%	0.9%	0.0%
<b>Water Redundancy</b>	<b>27.5%</b>	<b>36.0%</b>	<b>81.4%</b>
CSO	9.7%	0.2%	0.0%
Other	7.6%	-0.5%	-4.8%
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

As the capital improvement program advances over time, more projects will be included beyond the 10-year horizon from the long-term Master Plan and it is expected that Asset Protection will remain a significant spending initiative.

The FY17 Proposed Budget projects total CIP spending of \$3.1 billion starting in FY16.

(000s)	Total Contract Amount	Payments Thru FY15	Total Future Spending	Total FY14-18	Total FY19-23	Beyond 23
<b>Wastewater System Improvements</b>	<b>\$3,062.3</b>	<b>\$1,867.1</b>	<b>\$1,195.2</b>	<b>\$397.5</b>	<b>\$648.6</b>	<b>\$280.1</b>
Interception & Pumping	926.8	536.0	390.8	86.8	176.6	142.9
Treatment	818.4	239.6	578.9	163.1	413.5	57.1
Residuals	167.6	64.6	103.0	4.6	8.5	90.1
CSO	906.6	876.8	29.8	65.9	3.0	-
Other Wastewater	242.9	150.1	92.8	77.2	47.1	(9.9)
<b>Waterworks System Improvements</b>	<b>\$3,790.6</b>	<b>\$1,938.4</b>	<b>\$1,852.2</b>	<b>\$239.4</b>	<b>\$536.3</b>	<b>\$1,140.2</b>
Drinking Water Quality Improvements	665.9	637.8	28.1	58.5	11.6	0.6
Transmission	2,285.7	762.0	1,523.7	73.9	373.1	1,083.6
Distribution & Pumping	768.5	386.5	382.0	100.0	180.2	115.6
Other Waterworks	70.4	152.1	(81.7)	6.9	(28.6)	(59.7)
Business & Operations Support	134.7	88.5	46.2	41.8	15.4	-
<b>Total MWRA</b>	<b>\$6,987.5</b>	<b>\$3,893.9</b>	<b>\$3,093.6</b>	<b>\$678.7</b>	<b>\$1,200.4</b>	<b>\$1,420.3</b>

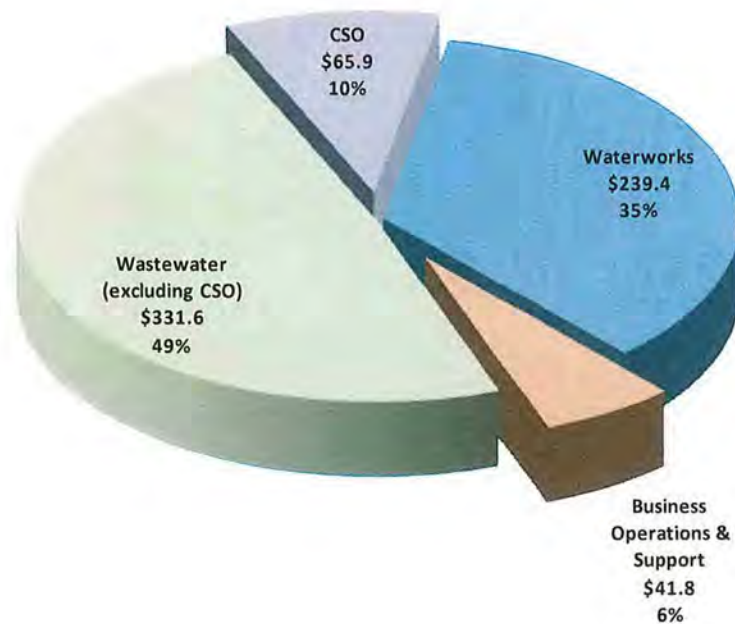
### CIP Actual/Projected Spending for the FY14-18 Cap Period

Spending during the FY14-18 timeframe is projected to be \$678.7 million. Yearly cash-flows for the proposed Cap period are shown below:

(000s)	FY14	FY15	FY16	FY17	FY18	Total FY14-18
<b>Wastewater System Improvements</b>	<b>\$55.7</b>	<b>\$75.4</b>	<b>\$79.4</b>	<b>\$87.3</b>	<b>\$99.8</b>	<b>\$397.5</b>
Interception & Pumping	6.9	8.6	10.7	29.3	31.2	86.8
Treatment	29.1	25.7	30.3	31.1	46.9	163.1
Residuals	0.1	-	-	2.9	1.6	4.6
CSO	15.6	23.6	19.0	5.0	2.8	65.9
Other Wastewater	4.0	17.5	19.4	19.0	17.3	77.2
<b>Waterworks System Improvements</b>	<b>\$41.0</b>	<b>\$22.7</b>	<b>\$30.6</b>	<b>\$61.0</b>	<b>\$84.1</b>	<b>\$239.4</b>
Drinking Water Quality Improvements	30.2	12.4	8.4	3.6	3.9	58.5
Transmission	4.5	2.5	7.5	23.2	36.3	73.9
Distribution & Pumping	4.8	8.9	14.1	31.5	40.6	100.0
Other Waterworks	1.5	(1.1)	0.6	2.7	3.4	6.9
Business & Operations Support	5.5	5.5	8.3	11.9	10.6	41.8
<b>Total MWRA</b>	<b>\$102.2</b>	<b>\$103.6</b>	<b>\$118.3</b>	<b>\$160.1</b>	<b>\$194.6</b>	<b>\$678.7</b>



The graph below illustrates a breakdown of the major program spending for the FY14-18 timeframe.



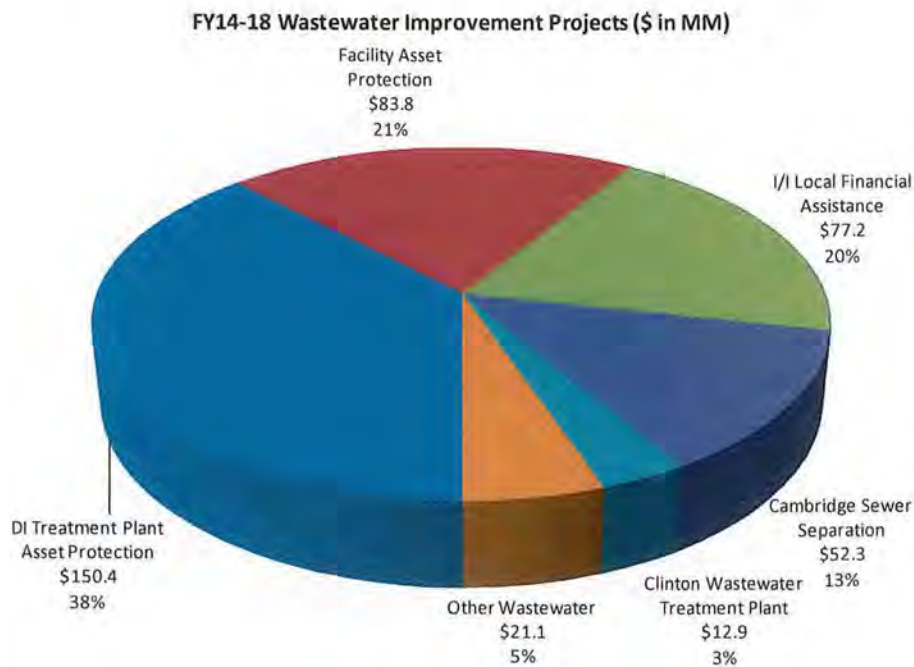
Please refer to Attachment B for a more detailed project listing and projected cash flows.

### **Top 5 Projects in the Water and Wastewater Programs in the FY14-FY18 Cap Period**

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 FY14-18 timeframe. These projects are either currently under construction or soon to be presented for award. The top 5 projects for the Wastewater program total \$376.5 million for FY14-18 period and represent 94.7% of the \$397.5 million total program.

## Wastewater Program

The breakdown of the \$397.5 million Wastewater program by major project is illustrated below:



The FY14-18 sub-phases of projects with spending greater than \$20 million along with a brief description of the scope of work are included below:

**Infiltration/Inflow (I/I) Local Financial Assistance** - \$77.2 million – This program provides funding assistance for communities to rehabilitate their collection systems with the goal of structurally reducing I/I flow.

**Chelsea Headworks Construction** - \$30.4 million (\$62.0 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 will be automated and the building's egress and fire suppressions systems will also be upgraded.

**Cambridge Sewer Separation CSO Control Program Design and Construction**- \$52.3 million (\$102.8 million total costs, \$93.1 million already spent). This project, along with Cambridge Floatables Control at an additional cost and spending to date of \$1.1 million, encompasses the wastewater system improvements implemented by the City of Cambridge to control CSO discharges to the Alewife Brook. Completed work includes the CAM004 Stormwater Outfall and Wetland Basin, Interceptor Connection Relief and Floatables Controls, Sewer Separation at Outfall CAM400, and two of the four contracts to complete CAM004 Sewer Separation, including Contract 8A (Huron Ave West) and Concord Lane. Remaining work

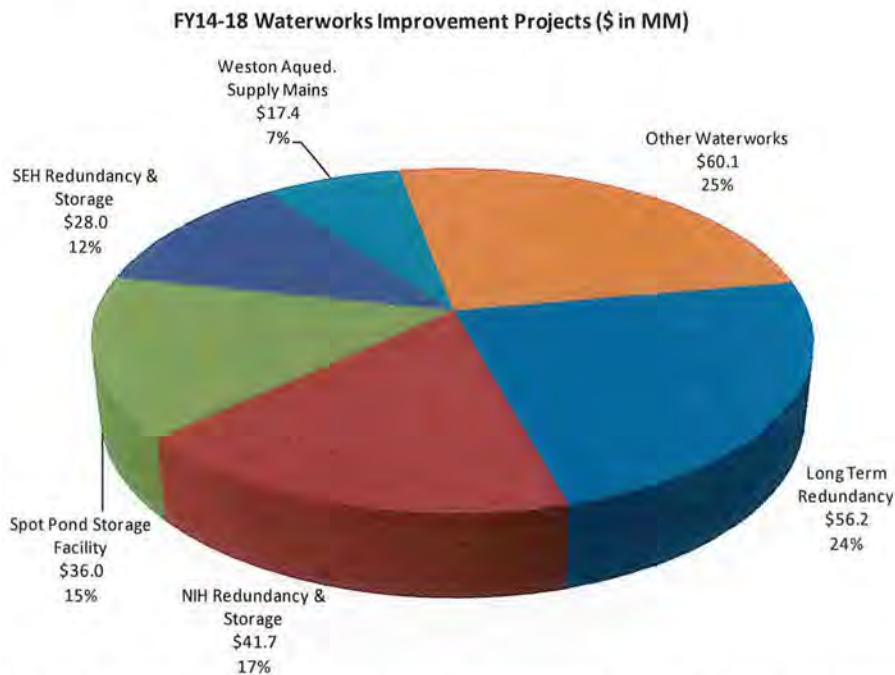
involves the completion of contracts 8B (Huron Ave East) and 9 (Concord) later this month. The CAM004 project is separating combined sewers in a 211-acre area upstream of Outfall CAM004 in the Huron Avenue and Concord Avenue neighborhoods, east of Fresh Pond Parkway. The final element of the Contract 9 work will redirect stormwater removed from the sewer system to the Alewife wetland basin and close Outfall CAM004. Schedule Seven of the Federal District Court Order requires all CSO related work to be complete by December 2015.

**Deer Island Scum Skimmer Replacement** - \$20.3 million - This is an asset protection replacement project which proposes to replace degraded carbon steel tip tubes and drive mechanisms for 40 Primary Clarifier tanks and 54 Secondary Clarifier tanks with stainless steel components to improve the system reliability and overall maintenance.

**Water program**

Similarly, the top 5 projects for the Waterworks program total \$179.3 million for FY14-18 and represent 74.9% of the \$239.4 million total program.

The breakdown of the \$239.4 million program by major project is illustrated below:



The FY14-18 sub-phases of projects with spending greater than \$20 million along with a brief description of the scope of work are included below:

**Wachusett Aqueduct Pump Station Design and Construction** - \$39.3 million (\$53.6 million in total cost) - This is a redundancy project for construction of a 240 mgd emergency pump station which will provide redundancy for the Cosgrove Tunnel by pumping raw water from the Wachusett Aqueduct to the Carroll Water Treatment Plant. This project, along with the completed Hultman Aqueduct rehabilitation and interconnections project, will provide fully

treated water transmission redundancy from the Wachusett Reservoir to the beginning of the metropolitan distribution system in Weston.

**Spot Pond Storage Facilities** - \$36.0 million (\$60.6 million in total cost) - This project is for the construction of a 20 million-gallon drinking water storage facility and redundant pump station in Stoneham. The underground, concrete tanks will provide drinking water storage for MWRA's Low Service area. Additionally, this project will provide system redundancy for 21 communities in the Northern Intermediate High and Northern High service areas currently served by the Gillis Pump Station. In August 2015, the storage tanks were placed in service.

**Northern Intermediate High (NIH) Section 89 & 29 Redundancy Construction Phases 1A-C & 2** - \$22.7 million and \$12.5 million respectively (total construction cost \$22.7 million and \$21.4 million) - This is a redundancy project for the 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 proposes a new seven mile redundant pipeline under four construction phases and will provide uninterrupted water supply to the service area in the event of a failure of the existing single supply pipe and to allow the existing pipe to be removed from service for inspection, maintenance, and repair. Phase 1A was completed and Phase 1B was awarded in November 2015.

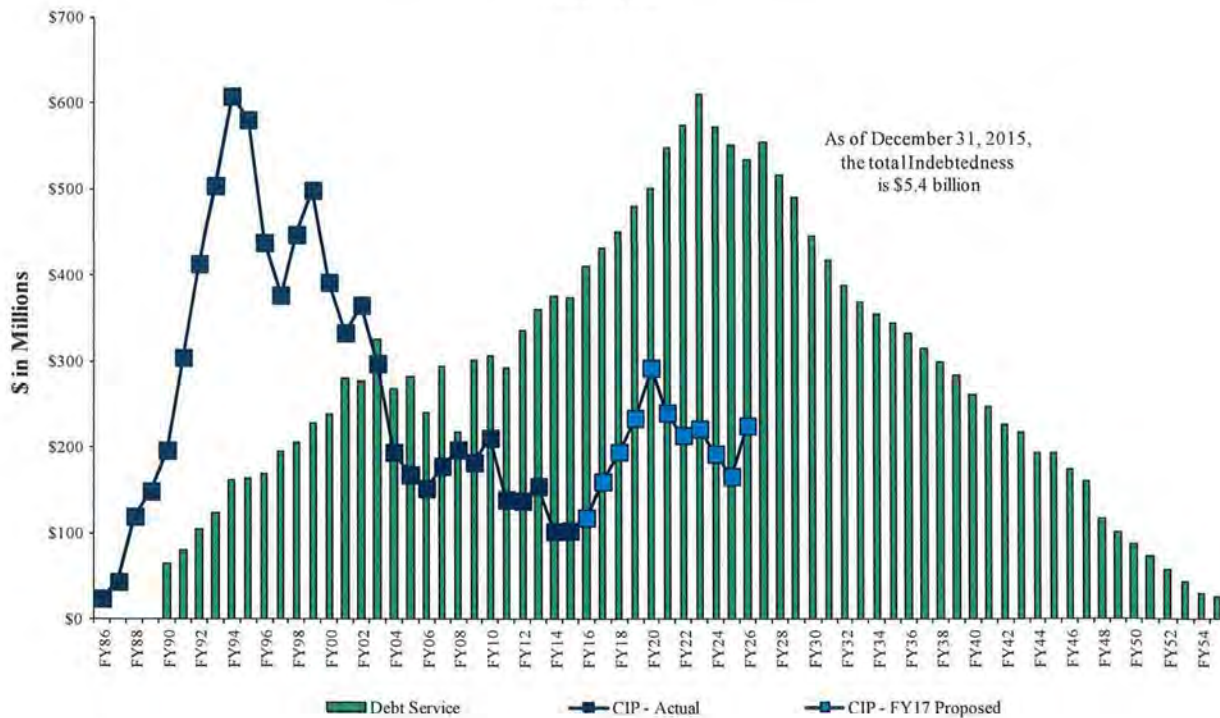
#### ***MWRA Capital Improvement Spending versus Debt Service***

The following graph was updated with the FY17 Proposed CIP spending and debt service projections to illustrate the relationship between the MWRA's CIP and debt service.

As of December 31, 2015, MWRA's total debt was \$5.4 billion. The Authority's debt service obligation as a percent of total expenses has increased from 36% in 1990 to over 61% in the FY16 Final Current Expense Budget.

The FY17 Proposed CIP reaffirms that the MWRA is reducing its total bonded indebtedness over the Cap period by paying off more principal on debt than annual CIP spending and resulting borrowing.

### MWRA Capital Improvement Spending & Debt Service



### Contingency

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. The total contingency budget in the FY17 Proposed CIP is \$211.4 million, with \$36.0 million during FY14-18.

### CIP Review and Adoption Process

The Advisory Board will have 60 days from the transmittal of the FY17 Proposed CIP 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 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 FY17 Final CIP to the Board for adoption.

**ATTACHMENTS:**

- A. New Capital Projects Added to the FY17 Proposed CIP
- B. FY17 Proposed Project Level Expenditure Forecast
- C. Overview of the FY17 Proposed CIP and Changes from the FY16 Final CIP

**ATTACHMENT A**  
**New Capital Projects Added to the FY17 Proposed CIP**

<b>Program</b>	<b>Project</b>	<b>Subphase</b>	<b>Total Contract Amount</b>	<b>FY17</b>	<b>FY18</b>	<b>FY14-18</b>	<b>Total Expenditures</b>
Interception & Pumping	Facility Asset Protection	DeLauri Pump Station Screens and Security	\$ 1,029,700	\$ 772,000	\$ 257,700	\$ 1,029,700	\$ 1,029,700
Distribution and Pumping	Chestnut Hill Connecting Mains	Chestnut Hill Gatehouse Repairs	725,000	725,000	-	725,000	725,000
<b>SUMMARY:</b>							
<b>Total Wastewater Projects</b>			\$ 1,029,700	\$ 772,000	\$ 257,700	\$ 1,029,700	\$ 1,029,700
<b>Total Waterworks Projects</b>			725,000	725,000	-	725,000	725,000
<b>Total Projects</b>			\$ 1,754,700	\$ 1,497,000	\$ 257,700	\$ 1,754,700	\$ 1,754,700

**ATTACHMENT B  
FY17 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

Program / Project	Total Contract Amount	Payments through FY15	Remaining Balance	FY14 - FY18	FY19-FY23	Beyond FY23
<b>Total MWRA</b>	<b>6,987,524,240</b>	<b>3,893,903,967</b>	<b>3,093,620,273</b>	<b>678,704,788</b>	<b>1,200,390,321</b>	<b>1,420,304,198</b>
<b>Wastewater</b>	<b>3,062,317,439</b>	<b>1,867,077,488</b>	<b>1,195,239,951</b>	<b>397,539,420</b>	<b>648,643,045</b>	<b>280,134,323</b>
<b>Interception &amp; Pumping</b>	<b>926,776,993</b>	<b>535,991,369</b>	<b>390,785,624</b>	<b>86,752,495</b>	<b>176,616,266</b>	<b>142,868,169</b>
102 Quincy Pump Facilities	25,907,203	25,907,203	-			
104 Braintree-Weymouth Relief Facilities	232,454,622	227,704,621	4,750,001	208,189	4,542,500	
105 New Neponset Valley Relief Sewer	30,300,303	30,300,303	-			
106 Wellesley Extension 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	6,669,019	939,770	5,729,249			
131 Upper Neponset Valley Sewer System	54,174,078	54,174,078	-			
132 Corrosion & Odor Control	23,366,829	3,001,406	20,365,423	908,852	19,456,571	
136 West Roxbury Tunnel	11,313,573	10,313,573	1,000,000		1,000,000	
137 Wastewater Central Monitoring	27,482,036	19,782,036	7,700,000	374,836	2,910,000	4,415,000
139 South System Relief Project	4,939,244	3,439,244	1,500,000		1,500,000	
141 Wastewater Process Optimization	10,389,301	1,463,147	8,926,154	296,605	5,168,493	3,719,023
142 Wastewater Meter System - Equipment Replace.	27,737,912	5,137,912	22,600,000	1,200,000	6,800,000	14,600,000



**ATTACHMENT B  
FY17 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

Program / Project	Total Contract Amount	Payments through FY15	Remaining Balance	FY14 - FY18	FY19-FY23	Beyond FY23
143 Regional I/I Management Planning	168,987	168,987	-			
145 Facility Asset Protection	344,910,590	32,445,794	312,464,797	83,764,013	123,759,453	120,134,146
146 D.I. Cross Harbor Tunnel	5,000,000	-	5,000,000		5,000,000	
147 Randolph Trunk Sewer Relief	750,000	-	750,000		750,000	
<b>Treatment</b>	<b>818,428,214</b>	<b>239,554,101</b>	<b>578,874,113</b>	<b>163,111,224</b>	<b>413,526,354</b>	<b>57,067,862</b>
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 PI Asset Protection	763,924,744	200,289,871	563,634,873	150,358,143	409,355,688	56,710,334
210 Clinton Wastewater Treatment Plant	19,955,076	4,715,835	15,239,242	12,901,161	4,170,666	357,528
211 Laboratory Services	2,227,674	2,227,674	-			
<b>Residuals</b>	<b>167,642,622</b>	<b>64,642,623</b>	<b>103,000,000</b>	<b>4,570,307</b>	<b>8,469,507</b>	<b>90,066,993</b>
261 Residuals	63,810,848	63,810,848	-			
271 Residuals Asset Protection	103,831,775	831,775	103,000,000	4,570,307	8,469,507	90,066,993
<b>CSO</b>	<b>906,603,747</b>	<b>876,839,209</b>	<b>29,764,539</b>	<b>65,923,673</b>	<b>2,973,757</b>	
<b>CSO MWRA Managed</b>	<b>433,759,856</b>	<b>433,198,973</b>	<b>560,883</b>	<b>3,881,390</b>		
339 North Dorchester Bay	221,597,299	221,597,299	-	(23,295)		
347 East Boston Branch Sewer Relief	85,637,164	85,637,164	-	(8,831)		

**ATTACHMENT B  
FY17 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

Program / Project	Total Contract Amount	Payments through FY15	Remaining Balance	FY14 - FY18	FY19-FY23	Beyond FY23
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	4,562,261	4,001,378	560,883	3,913,516		
357 Charles River CSO Controls	3,633,077	3,633,077	-			
<b>CSO Community Managed</b>	<b>422,595,771</b>	<b>395,442,852</b>	<b>27,152,919</b>	<b>62,756,103</b>	<b>1,376,229</b>	
340 Dorchester Bay Sewer Separation (Fox Point)	54,625,590	54,625,590	-	473,295		
341 Dorchester Bay Sewer Sep. (Commercial Point)	64,173,625	60,542,452	3,631,173	1,650,246	1,376,229	
342 Neponset River Sewer Separation	2,549,086	2,549,086	-	104,692		
343 Constitution Beach Sewer Separation	3,731,315	3,731,315	-	(37,573)		
344 Stony Brook Sewer Separation	44,246,462	44,246,463	-	48,079		
346 Cambridge Sewer Separation	102,764,877	79,404,780	23,360,096	52,280,673		
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	11,917,090	11,917,089	-	(89,619)		

**ATTACHMENT B  
FY17 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

Program / Project	Total Contract Amount	Payments through FY15	Remaining Balance	FY14 - FY18	FY19-FY23	Beyond FY23
358 Morrissey Boulevard Drain	32,185,790	32,188,262	(2,472)	(160,998)		
359 Reserved Channel Sewer Separation	70,559,596	70,395,476	164,119	10,519,694		
360 Brookline Sewer Separation	24,715,291	24,715,290	-	(1,282,073)		
361 Bulfinch Triangle Sewer Separation	9,054,405	9,054,404	-	(803,052)		
<b>CSO Planning &amp; Support</b>	<b>50,248,120</b>	<b>48,197,384</b>	<b>2,050,737</b>	<b>(713,820)</b>	<b>1,597,528</b>	
324 CSO Support	50,248,120	48,197,384	2,050,737	(713,820)	1,597,528	
<b>Other Wastewater</b>	<b>242,865,861</b>	<b>150,050,187</b>	<b>92,815,674</b>	<b>77,181,721</b>	<b>47,057,161</b>	<b>(9,868,701)</b>
128 I/I Local Financial Assistance	242,584,985	149,769,311	92,815,674	77,181,721	47,057,161	(9,868,701)
138 Sewerage System Mapping Upgrades	280,876	280,876	-			
<b>Waterworks</b>	<b>3,790,556,487</b>	<b>1,938,353,443</b>	<b>1,852,203,045</b>	<b>239,374,395</b>	<b>536,329,799</b>	<b>1,140,169,875</b>
<b>Drinking Water Quality Improvements</b>	<b>665,945,031</b>	<b>637,824,475</b>	<b>28,120,556</b>	<b>58,493,604</b>	<b>11,606,864</b>	<b>637,009</b>
542 Carroll Water Treatment Plant	438,074,295	416,046,024	22,028,271	15,018,761	11,210,000	637,009
543 Quabbin Water Treatment Plant	20,023,993	19,575,769	448,224	7,255,749		
544 Norumbega Covered Storage	106,674,146	106,674,146	-			
545 Blue Hills Covered Storage	40,557,301	40,082,837	474,464	197,600	396,864	
550 Spot Pond Storage Facility	60,615,295	55,445,699	5,169,596	36,021,494		

**ATTACHMENT B  
FY17 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

<b>Program / Project</b>	<b>Total Contract Amount</b>	<b>Payments through FY15</b>	<b>Remaining Balance</b>	<b>FY14 - FY18</b>	<b>FY19-FY23</b>	<b>Beyond FY23</b>
<b>Transmission</b>	<b>2,285,713,191</b>	<b>762,009,974</b>	<b>1,523,703,217</b>	<b>73,947,351</b>	<b>373,126,026</b>	<b>1,083,601,653</b>
597 Winsor Station Pipeline	30,019,846	1,954,234	28,065,611	4,940,758	23,683,498	
601 Sluice Gate Rehabilitation	9,158,411	9,158,411	-			
604 MetroWest Tunnel	707,421,427	696,805,015	10,616,413	1,981,814	9,922,884	118,221
615 Chicopee Valley Aqueduct Redundancy	8,666,292	8,666,292	-			
616 Quabbin Transmission System	15,456,914	7,456,913	8,000,000	773,199	7,481,250	
617 Sudbury/Weston Aqueduct Repairs	6,846,487	659,948	6,186,538	2,841,258	3,345,280	
620 Wachusett Reservoir Spillway Improvements	9,287,460	9,287,461	-			
621 Watershed Land	24,000,000	18,248,400	5,751,600	6,657,600		
623 Dam Projects	4,538,205	3,092,761	1,445,444	545,664	907,353	
625 Long Term Redundancy	1,470,318,149	6,680,538	1,463,637,610	56,207,058	327,785,761	1,083,483,432
<b>Distribution And Pumping</b>	<b>768,485,280</b>	<b>386,452,802</b>	<b>382,032,478</b>	<b>99,995,692</b>	<b>180,164,491</b>	<b>115,621,515</b>
618 Northern High NW Transmission Section 70	1,000,000	-	1,000,000	474,000	526,000	
677 Valve Replacement	22,749,419	12,016,378	10,733,041	2,682,040	3,653,539	4,397,459
678 Boston Low Service - Pipe & Valve Rehab.	23,690,864	23,690,863	-			
683 Heath Hill Road Pipe Replacement	19,358,036	19,358,036	-			

**ATTACHMENT B  
FY17 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

Program / Project	Total Contract Amount	Payments through FY15	Remaining Balance	FY14 - FY18	FY19-FY23	Beyond FY23
689 James L. Gillis Pump Station	33,419,006	33,419,007	-			
692 Northern High Service - Section 27 Improvements	1,097,441	123,646	973,795	183,379	790,416	
693 NHS - Revere & Malden Pipeline Improvements	55,359,978	26,832,740	28,527,239	2,910,498	25,616,741	
702 New Connecting Mains-Shaft 7 to WASM 3	34,765,084	11,315,807	23,449,277	1,559,000	22,147,945	97,331
704 Rehab of Other Pump Stations	55,057,852	30,057,852	25,000,000		18,750,000	6,250,000
706 NHS-Connecting Mains from Section 91	2,360,194	2,360,194	-			
708 Northern Extra High Service - New Pipelines	7,888,833	3,632,119	4,256,714	61,114	3,495,000	700,601
712 Cathodic Protection of Distribution Mains	1,655,601	140,913	1,514,688	417,750	1,096,939	
713 Spot Pond Supply Mains Rehab	67,377,554	61,696,403	5,681,151	3,281,607	3,113,947	
714 Southern Extra High - Sections 41 & 42	3,657,243	3,657,243	-			
719 Chestnut Hill Connecting Mains	24,174,658	17,486,675	6,687,983	725,000	102,000	5,860,983
720 Warren Cottage Line Rehab	1,204,822	1,204,821	-			
721 Southern Spine Distribution Mains	74,983,108	36,681,373	38,301,735	368,216	3,963,126	33,960,118
722 NIH Redundancy & Storage	89,448,252	11,149,175	78,299,078	41,661,429	41,812,459	
723 Northern Low Service Rehab - Section 8	23,441,424	2,320,986	21,120,437	48,588	20,031,171	1,040,679
725 Hydraulic Model Update	598,358	598,358	-			
727 SEH Redundancy & Storage	97,353,883	7,620,602	89,733,281	28,038,913	7,938,943	54,619,056

**ATTACHMENT B  
FY17 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

<b>Program / Project</b>	<b>Total Contract Amount</b>	<b>Payments through FY15</b>	<b>Remaining Balance</b>	<b>FY14 - FY18</b>	<b>FY19-FY23</b>	<b>Beyond FY23</b>
730 Weston Aqueduct Supply Mains	109,605,168	72,746,641	36,858,527	17,388,851	18,060,265	8,112,757
731 Lynnfield Pipeline	5,625,832	5,625,828	-	(51,693)		
732 Walnut St. & Fisher Hill Pipeline Rehab	2,717,140	2,717,141	-			
735 Section 80 Rehabilitation	9,895,531	-	9,895,531	247,000	9,066,000	582,531
<b>Other Waterworks</b>	<b>70,412,986</b>	<b>152,066,192</b>	<b>(81,653,206)</b>	<b>6,937,748</b>	<b>(28,567,581)</b>	<b>(59,690,302)</b>
753 Central Monitoring System	39,106,328	16,030,643	23,075,684	6,396,599	6,220,000	10,686,000
763 Distribution Systems Facilities Mapping	2,298,919	1,036,368	1,262,551	532,819	729,732	
764 Local Water Infrastructure Rehab	7,487,762	7,487,762	-			
765 Local Water Pipeline Assistance Program	-	126,865,175	(126,865,175)	(2,814,293)	(50,947,647)	(73,097,302)
766 Waterworks Facility Asset Protection	21,519,976	646,243	20,873,733	2,822,624	15,430,334	2,721,000
<b>Business &amp; Operations Support</b>	<b>134,650,313</b>	<b>88,473,036</b>	<b>46,177,278</b>	<b>41,790,972</b>	<b>15,417,477</b>	
881 Equipment Purchase	28,534,878	16,708,657	11,826,221	10,822,549	5,605,000	
925 Technical Assistance	1,125,000	-	1,125,000	750,000	375,000	
930 MWRA Facility - Chelsea	9,813,633	9,813,633	-			
931 Business Systems Plan	24,527,709	24,527,709	-	76,479		
932 Environmental Remediation	1,478,602	1,478,602	-	(200)		
933 Capital Maintenance Planning & Development	16,446,993	11,539,126	4,907,867	6,322,752		

**ATTACHMENT B  
FY17 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

<b>Program / Project</b>	<b>Total Contract Amount</b>	<b>Payments through FY15</b>	<b>Remaining Balance</b>	<b>FY14 - FY18</b>	<b>FY19-FY23</b>	<b>Beyond FY23</b>
934 MWRA Facilities Management	2,150,535	370,533	1,780,002		1,780,002	
935 Alternative Energy Initiatives	25,838,007	17,387,564	8,450,443	3,755,748	4,885,450	
940 Application Improvement Program	10,175,904	484,231	9,691,673	8,419,128	1,683,651	
942 Information Security Program (ISP)	3,365,411	819,825	2,545,586	2,289,681	540,540	
944 Information Technology Management Program	922,640	-	922,640	850,030	72,610	
946 IT Infrastructure Program	10,271,000	5,343,155	4,927,845	8,504,805	475,224	

**Attachment C**  
**Overview of the FY17 Proposed and Changes from the Final FY16 CIP**

Program and Project	Final FY16			
	Total Budget Amount	FY14-18	FY19-23	Beyond 23
<b>Total MWRA</b>	<b>6,012,395</b>	<b>711,532</b>	<b>1,223,762</b>	<b>388,976</b>
<b>Wastewater</b>	<b>2,974,567</b>	<b>419,344</b>	<b>634,899</b>	<b>184,324</b>
<b>Interception &amp; Pumping</b>	<b>890,031</b>	<b>98,024</b>	<b>224,870</b>	<b>46,598</b>
102 Quincy Pump Facilities	25,907	-	-	-
104 Braintree-Weymouth Relief Facilities	232,455	310	4,441	-
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	6,635	-	5,695	-
131 Upper Neponset Valley Sewer	54,174	-	-	-
132 Corrosion & Odor Control	19,782	543	16,238	-
136 West Roxbury Tunnel	11,314	-	1,000	-
137 Wastewater Central Monitoring	27,482	760	2,910	4,030
139 South System Relief Project	4,939	-	1,500	-
141 Wastewater Process Optimization	10,383	1,391	5,817	1,970
142 Wastewater Meter System-Equipment	27,738	6,436	1,564	14,600
143 Regional I/I Management Planning	169	-	-	-
145 Facility Asset Protection	311,791	88,585	179,955	25,999
146 D.I. Cross Harbor Tunnel Inspection	5,000	-	5,000	-
147 Randolph Trunk Sewer Relief	750	-	750	-
<b>Treatment</b>	<b>775,573</b>	<b>183,994</b>	<b>352,083</b>	<b>54,773</b>
182 DI Primary and Secondary	(958)	-	-	-
200 DI Plant Optimization	33,427	-	-	-
206 DI Treatment Plant Asset Protection	720,365	170,511	347,938	54,416
210 Clinton Wastewater Treat Plant	20,511	13,483	4,145	358
211 Laboratory Services	2,228	-	-	-
<b>Residuals</b>	<b>167,643</b>	<b>4,570</b>	<b>8,470</b>	<b>90,067</b>
261 Residuals	63,811	-	-	-
271 Residuals Asset Protection	103,832	4,570	8,470	90,067

Program and Project	FY17 Proposed			
	Total Budget Amount	FY14-18	FY19-23	Beyond 23
<b>Total MWRA</b>	<b>6,987,519</b>	<b>678,703</b>	<b>1,200,390</b>	<b>1,420,302</b>
<b>Wastewater</b>	<b>3,062,316</b>	<b>397,538</b>	<b>648,643</b>	<b>280,132</b>
<b>Interception &amp; Pumping</b>	<b>926,776</b>	<b>86,752</b>	<b>176,616</b>	<b>142,867</b>
102 Quincy Pump Facilities	25,907	-	-	-
104 Braintree-Weymouth Relief Facilities	232,455	208	4,543	-
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	6,669	-	5,729	-
131 Upper Neponset Valley Sewer	54,174	-	-	-
132 Corrosion & Odor Control	23,367	909	19,457	-
136 West Roxbury Tunnel	11,314	-	1,000	-
137 Wastewater Central Monitoring	27,482	375	2,910	4,415
139 South System Relief Project	4,939	-	1,500	-
141 Wastewater Process Optimization	10,389	297	5,168	3,719
142 Wastewater Meter System-Equipment	27,738	1,200	6,800	14,600
143 Regional I/I Management Planning	169	-	-	-
145 Facility Asset Protection	344,911	83,764	123,759	120,134
146 D.I. Cross Harbor Tunnel Inspection	5,000	-	5,000	-
147 Randolph Trunk Sewer Relief	750	-	750	-
<b>Treatment</b>	<b>818,429</b>	<b>163,111</b>	<b>413,527</b>	<b>57,067</b>
182 DI Primary and Secondary	(958)	-	-	-
200 DI Plant Optimization	33,279	(148)	-	-
206 DI Treatment Plant Asset Protection	763,925	150,358	409,356	56,710
210 Clinton Wastewater Treat Plant	19,955	12,901	4,171	358
211 Laboratory Services	2,228	-	-	-
<b>Residuals</b>	<b>167,643</b>	<b>4,570</b>	<b>8,470</b>	<b>90,067</b>
261 Residuals	63,811	-	-	-
271 Residuals Asset Protection	103,832	4,570	8,470	90,067

Program and Project	Change from Final FY16			
	Total Budget Amount	FY14-18	FY19-23	Beyond 23
<b>Total MWRA</b>	<b>975,124</b>	<b>(32,829)</b>	<b>(23,372)</b>	<b>1,031,326</b>
<b>Wastewater</b>	<b>87,749</b>	<b>(21,806)</b>	<b>13,744</b>	<b>95,808</b>
<b>Interception &amp; Pumping</b>	<b>36,745</b>	<b>(11,272)</b>	<b>(48,254)</b>	<b>96,269</b>
102 Quincy Pump Facilities	-	-	-	-
104 Braintree-Weymouth Relief Facilities	-	(102)	102	-
105 New Neponset Valley Relief Sewer	-	-	-	-
106 Wellesley Extension Replacement Sewer	-	-	-	-
107 Framingham Extension Relief Sewer	-	-	-	-
127 Cummingsville Replacement Sewer	-	-	-	-
130 Siphon Structure Rehabilitation	34	-	34	-
131 Upper Neponset Valley Sewer	-	-	-	-
132 Corrosion & Odor Control	3,585	366	3,219	-
136 West Roxbury Tunnel	-	-	-	-
137 Wastewater Central Monitoring	-	(385)	-	385
139 South System Relief Project	-	-	-	-
141 Wastewater Process Optimization	6	(1,094)	(649)	1,749
142 Wastewater Meter System-Equipment	-	(5,236)	5,236	-
143 Regional I/I Management Planning	-	-	-	-
145 Facility Asset Protection	33,120	(4,821)	(56,196)	94,135
146 D.I. Cross Harbor Tunnel Inspection	-	-	-	-
147 Randolph Trunk Sewer Relief	-	-	-	-
<b>Treatment</b>	<b>42,856</b>	<b>(20,883)</b>	<b>61,444</b>	<b>2,294</b>
182 DI Primary and Secondary	-	-	-	-
200 DI Plant Optimization	(148)	(148)	-	-
206 DI Treatment Plant Asset Protection	43,560	(20,153)	61,418	2,294
210 Clinton Wastewater Treat Plant	(556)	(582)	26	-
211 Laboratory Services	-	-	-	-
<b>Residuals</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
261 Residuals	-	-	-	-
271 Residuals Asset Protection	-	-	-	-





**Attachment C**  
**Overview of the FY17 Proposed and Changes from the Final FY16 CIP**

Program and Project	Final FY16			
	Total Budget Amount	FY14-18	FY19-23	Beyond 23
<b>Transmission</b>	<b>1,224,185</b>	<b>78,812</b>	<b>275,900</b>	<b>114,434</b>
597 Winsor Station Pipeline	27,883	9,661	16,827	-
601 Sluice Gate Rehabilitation	9,158	-	-	-
604 MetroWest Tunnel	708,664	3,260	9,888	118
615 Chicopee Valley Aqueduct Redundancy	8,666	-	-	-
616 Quabbin Transmission System	15,457	773	7,481	-
617 Sudbury/Weston Aqueduct Repairs	7,149	3,146	3,343	-
620 Wachusett Reservoir Spillway Improvement	9,287	-	-	-
621 Watershed Land	24,000	6,658	-	-
622 Cosgrove/Wachusett Redundancy	-	-	-	-
623 Dam Projects	4,538	978	475	-
625 Long Term Redundancy	409,381	54,336	237,886	114,317
<b>Distribution &amp; Pumping</b>	<b>949,123</b>	<b>105,791</b>	<b>324,977</b>	<b>145,651</b>
618 Northern High NW Tran Sections 70 & 71	1,000	474	526	-
677 Valve Replacement	22,702	2,717	3,619	4,351
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	1,092	178	790	-
693 NHS - Revere & Malden Pipeline Improvement	55,161	11,020	16,607	702
702 New Connect Mains-Shaft 7 to WASM 3	34,296	403	17,111	5,821
704 Rehabilitation of Other Pump Stations	55,058	-	18,750	6,250
706 NHS-Connecting Mains from Section 91	2,360	-	-	-
708 Northern Extra High Service New Pipelines	7,863	61	3,495	675
712 Cathodic Protection Of Distribution Mains	1,668	509	763	254
713 Spot Pond Supply Mains Rehabilitation	66,807	2,713	3,112	-
714 Southern Extra High Sections 41 & 42	3,657	-	-	-
719 Chestnut Hill Connecting Mains	32,035	316	10,156	4,076
720 Warren Cottage Line Rehabilitation	1,205	-	-	-
721 South Spine Distribution Mains	74,773	369	4,037	33,676
722 NIH Redundancy & Storage	90,187	43,327	40,885	-
723 Northern Low Service Rehabilitation Section 8	23,334	553	20,459	-
724 Northern High Service - Pipeline Rehabilitation	-	-	-	-
725 Hydraulic Model Update	598	-	-	-
727 Southern Extra High Redundancy & Storage	99,544	23,224	15,274	54,289
730 Weston Aqueduct Supply Mains	281,137	19,422	160,114	35,557
731 Lynnfield Pipeline	5,626	(52)	-	-
732 Walnut St. & Fisher Hill Pipeline Rehabilitation	2,717	-	-	-
733 NHS Pipeline Rehabilitation 13-18 & 48	-	-	-	-
734 Southern Extra High Pipelines-Sections 30, 39,40, & 44	-	-	-	-
735 Section 80 Rehabilitation	9,836	558	9,278	-

Total Budget Amount	FY17 Proposed		
	FY14-18	FY19-23	Beyond 23
<b>2,285,713</b>	<b>73,948</b>	<b>373,125</b>	<b>1,083,600</b>
30,020	4,941	23,683	-
9,158	-	-	-
707,421	1,982	9,923	118
8,666	-	-	-
15,457	773	7,481	-
6,846	2,841	3,345	-
9,287	-	-	-
24,000	6,658	-	-
-	-	-	-
4,538	546	907	-
1,470,318	56,207	327,786	1,083,483
<b>768,484</b>	<b>99,994</b>	<b>180,165</b>	<b>115,622</b>
1,000	474	526	-
22,749	2,682	3,654	4,397
23,691	-	-	-
19,358	-	-	-
33,419	-	-	-
1,097	183	790	-
55,360	2,910	25,617	-
34,765	1,559	22,148	97
55,058	-	18,750	6,250
2,360	-	-	-
7,889	61	3,495	701
1,656	418	1,097	-
67,378	3,282	3,114	-
3,657	-	-	-
24,175	725	102	5,861
1,205	-	-	-
74,983	368	3,963	33,960
89,448	41,661	41,812	-
23,441	49	20,031	1,041
-	-	-	-
598	-	-	-
97,354	28,039	7,939	54,619
109,605	17,389	18,060	8,113
5,626	(52)	-	-
2,717	-	-	-
-	-	-	-
-	-	-	-
9,896	247	9,066	583

Total Budget Amount	Change from Final FY16		
	FY14-18	FY19-23	Beyond 23
<b>1,061,528</b>	<b>(4,864)</b>	<b>97,225</b>	<b>969,166</b>
2,137	(4,720)	6,856	-
-	-	-	-
(1,243)	(1,278)	35	-
-	-	-	-
-	-	-	-
(303)	(305)	2	-
-	-	-	-
-	-	-	-
-	(432)	432	-
1,060,937	1,871	89,900	969,166
<b>(180,639)</b>	<b>(5,797)</b>	<b>(144,812)</b>	<b>(30,029)</b>
-	-	-	-
47	(35)	35	46
-	-	-	-
-	-	-	-
5	5	-	-
199	(8,110)	9,010	(702)
469	1,156	5,037	(5,724)
-	-	-	-
-	-	-	-
26	-	-	26
(12)	(91)	334	(254)
571	569	2	-
-	-	-	-
(7,860)	409	(10,054)	1,785
-	-	-	-
210	(1)	(74)	284
(739)	(1,666)	927	-
107	(504)	(428)	1,041
-	-	-	-
-	-	-	-
(2,190)	4,815	(7,335)	330
(171,532)	(2,033)	(142,054)	(27,444)
-	-	-	-
-	-	-	-
60	(311)	(212)	583

**Attachment C**  
**Overview of the FY17 Proposed and Changes from the Final FY16 CIP**

Program and Project	Final FY16			
	Total Budget Amount	FY14-18	FY19-23	Beyond 23
<b>Other</b>	<b>69,836</b>	<b>7,760</b>	<b>(34,203)</b>	<b>(55,454)</b>
753 Central Monitoring System	39,006	6,297	6,220	10,686
763 Distribution Systems Facilities Mapping	2,299	914	348	-
764 Local Water Infrastructure Rehabilitation Assistance	7,488	-	-	-
765 Local Water Pipeline Improvement Loan Program	-	(4,508)	(53,490)	(68,861)
766 Waterworks Facility Asset Protection	21,043	5,058	12,719	2,721
<b>Business &amp; Operations Support</b>	<b>128,393</b>	<b>40,922</b>	<b>10,029</b>	<b>-</b>
881 Equipment Purchase	23,168	10,063	997	-
925 Technical Assistance	1,125	1,125	-	-
930 MWRA Facility - Chelsea	9,814	-	-	-
931 Business Systems Plan	24,552	101	-	-
932 Environmental Remediation	1,479	-	-	-
933 Capital Maintenance Planning	16,721	6,597	-	-
934 MWRA Facilities Management	2,151	-	1,780	-
935 Alternative Energy Initiatives	25,630	3,576	4,857	-
940 Applicat Improv Program	10,176	8,437	1,666	-
942 Info Security Program ISP	2,385	1,595	255	-
944 Info Tech Mgmt Program	923	863	59	-
946 IT Infrastructure Program	10,271	8,566	414	-

Total Budget Amount	FY17 Proposed		
	FY14-18	FY19-23	Beyond 23
<b>70,413</b>	<b>6,938</b>	<b>(28,568)</b>	<b>(59,690)</b>
39,106	6,397	6,220	10,686
2,299	533	730	-
7,488	-	-	-
-	(2,814)	(50,948)	(73,097)
21,520	2,823	15,430	2,721
<b>134,650</b>	<b>41,791</b>	<b>15,419</b>	<b>-</b>
28,535	10,823	5,605	-
1,125	750	375	-
9,814	-	-	-
24,528	76	-	-
1,479	-	-	-
16,447	6,323	-	-
2,151	-	1,780	-
25,838	3,756	4,885	-
10,176	8,419	1,684	-
3,365	2,290	541	-
923	850	73	-
10,271	8,505	475	-

Total Budget Amount	Change from Final FY16		
	FY14-18	FY19-23	Beyond 23
<b>577</b>	<b>(822)</b>	<b>5,635</b>	<b>(4,236)</b>
100	100	-	-
-	(381)	382	-
-	-	-	-
-	1,694	2,542	(4,236)
477	(2,235)	2,711	-
<b>6,257</b>	<b>869</b>	<b>5,390</b>	<b>-</b>
5,367	760	4,608	-
-	(375)	375	-
-	-	-	-
(24)	(25)	-	-
-	-	-	-
(274)	(274)	-	-
-	-	-	-
208	180	28	-
-	(18)	18	-
980	695	286	-
-	(13)	14	-
-	(61)	61	-

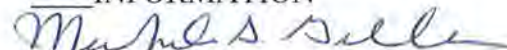
## STAFF SUMMARY



**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** December 16, 2015  
**SUBJECT:** Bond Counsel Services  
McCarter & English, LLP  
Contract F236




COMMITTEE: Administration, Finance & Audit

VOTE  
 INFORMATION

  
Michele S. Gillen  
Director, Administration

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

  
Thomas J. Durkin  
Director, Finance

### RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to award Contract F236 to McCarter & English, LLP for Bond Counsel services and to authorize the Executive Director, on behalf of the Authority, to execute contract F236 in an amount not to exceed \$1,454,240 and for a term of four years from the Notice to Proceed.

### DISCUSSION:

All issuers of tax-exempt debt are required to have a bond counsel for their bond issuances. During the issuance process, Bond Counsel ensures that bonds are being issued in compliance with all applicable federal and state laws and regulations, and MWRA's General Revenue Bond Resolution. This includes rendering an opinion that the bonds are legal, binding obligations of the Authority and are exempt from federal and state income taxes. Beyond the issuance process, Bond Counsel assists with providing legal opinions and advice on the management of the outstanding debt, ensuring compliance with the requirements of the General Revenue Bond Resolution and all applicable laws, regulations, and pronouncements on an ongoing basis. Along with the maintenance of the existing outstanding debt, Bond Counsel also provides MWRA with advice as it relates to questions from the rating agencies, Internal Revenue Service, bondholders, underwriters and other interested parties.

### PROCUREMENT PROCESS:

The procurement process to select Bond Counsel utilized a one step Request for Qualification Statements and Proposals (RFQ/P), which was issued on November 4, 2015. In addition to MWRA's standard procurement advertising requirements, copies of the advertisement were sent directly to six firms.

Four firms, Hinckley & Allen LLP (Hinckley), Locke Lord, LLP (Locke), McCarter English, LLP (McCarter), and Mintz, Levin, Cohn, Ferris, Glovsky, and Popeo, P.C. (Mintz Levin), submitted proposals on November 24, 2015.

As part of the procurement process, proposers are required to provide MWRA with Disclosure Statements assuring that firm's engagement would not result in a form of Conflict of Interest or other activity prohibited by Rules 1.7-1.10 under Rule 3:07 of the Massachusetts Supreme Judicial Court Rules (SJC Rules). Those statements are reviewed by a separate Disclosure Panel, comprised of staff from Procurement and the Law Division, which reports any areas of non-compliance or concern to the Selection Committee. After review of the Disclosure Statements and clarifications received from Locke, McCarter and Mintz the panel determined that those firms did not have conflict of interest or other prohibited activity under the SJC Rules. Hinckley, however, reserved its right to assist clients in procurement and construction matters without disclosing potential conflicts of interest to MWRA and further requested that MWRA provide an advance waiver of any potential conflicts of interest. After consulting with MWRA's General Counsel and the Director of Procurement it was determined that it was adverse to MWRA's interests to agree to such a waiver. In addition, the Disclosure Panel determined that since Hinckley serves as bond counsel to the Massachusetts Clean Water Trust there could be a potential for disalignment in interests. As result of these factors, the Disclosure Panel concluded that Hinckley was not eligible to serve as bond counsel and reported this to the Selection Committee. The Selection Committee then voted not to evaluate the proposal submitted by Hinckley.

The Selection Committee evaluated and ranked the proposals from Locke, McCarter and Mintz based on the criteria contained in the RFQ/P (Cost, Qualifications and Key Personnel, Experience and Past Performance, Capacity/Organization, Management and Technical Approach, and MBE/WBE Participation). The proposals for Bond Counsel Services were ranked as follows:

<b>Rank</b>	<b>Firm</b>	<b>Cost</b>	<b>Total Points</b>	<b>Total Ranking Points</b>
1	McCarter & English	\$ 1,454,240	422	5
2	Mintz Levin	\$ 1,617,938	385	11
3	Locke Lord	\$ 1,394,700	375	14

All three proposals reviewed by the Selection Committee were from firms with significant relevant experience and that are well respected in the municipal bond market. As part of the selection process, the committee reviewed the hourly rate costs and the level of effort by job classification (e.g. Partner, Associate, and Paralegal) in the proposals. It was apparent to the Selection Committee that the lowest total cost proposal was achieved by providing significantly lower level of effort than the other two proposals. McCarter's allocation of level of effort by task showed a strong understanding of the complexity of the work. In addition, McCarter provided the lowest hourly rate for each of the labor categories.

Firm	Title	Total Contract Hours	Percent of Time	Total Cost	Average Hourly Rate
McCarter & English	Partner	2724	70%	\$ 1,454,240	\$ 375
	Associate	755	19%		
	Paralegal	403	10%		
	<b>Total</b>	<b>3882</b>			
Mintz Levin	Member	1045	31%	\$ 1,617,938	\$ 474
	Associate	1246	37%		
	Paralegal	1120	33%		
	<b>Total</b>	<b>3411</b>			
Locke Lord	Partner	705	29%	\$ 1,392,925	\$ 575
	Associate	1228	51%		
	Counsel	491	20%		
	<b>Total</b>	<b>2424</b>			

As the table above shows, based on the total number of hours, percentage of partner time, and the combined average hourly rate, McCarter represented the best overall value to the Authority for this important service. McCarter's proposal included a reduction from the rates charged under the current contract, to the rates charged in 2008. McCarter has done an excellent job assisting MWRA with the management of its debt portfolio over the last eight years including implementing the amendments to the General Revenue Bond Resolution, \$1.2 billion 2008 variable rate bond refunding, Lehman bankruptcy swap transfers, various liquidity facility extensions and substitutions, as well as the regular maintenance of the capital finance program.

**BUDGET/FISCAL IMPACT:**

Most costs associated with Bond Counsel services are included as part of the cost of issuance and are funded from the proceeds of bond transactions. A small portion of the work is funded through the CEB. The FY16 CEB has sufficient funds to pay for the work included in this contract.

**MBE/WBE PARTICIPATION:**

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



# MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey  
Executive Director

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

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

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

to be held on

Wednesday, December 16, 2015

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

Time: Immediately following AF&A Comm.

### **AGENDA**

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

1. Alewife Brook Pump Station Rehabilitation: Fay, Spofford & Thorndike, LLC, Contract 7034, Amendment 2

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the  
Wastewater Policy and Oversight Committee

November 18, 2015

A meeting of the Wastewater Policy and Oversight Committee was held on November 18, 2015 at the Authority headquarters in Charlestown. Chairman Walsh presided. Present from the Board were Messrs. Blackmon, Carroll, Cotter, Flanagan, Foti, Pappastergion, Pena, and Vitale. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Dave Duest, Rick Adams, Steve Cullen, Corrie Barrett, Terrence Flynn, and Bonnie Hale. The meeting was called to order at 11:00 a.m.

**Information**

Update on Valve and Piping Replacement, Various Facilities – Deer Island Treatment Plant: Carlin Contracting Co., Inc., Contract 7275

Staff gave a presentation on the project status.

**Contract Awards**

\*Digested Sludge Line Pump Replacement, Phase 2: Walsh Construction Company, Contract 6821

Staff summarized the work to be performed under this contract, and there was general discussion and question and answer. The Committee recommended approval of the contract award (ref. agenda item B.1).

\*\*Alewife Brook Pump Station Rehabilitation: Contractor TBD, Contract 6797

Discussion of this item was referred to Executive Session.

**Contract Amendments/Change Orders**

\*Rehabilitation of Anaerobic Digesters, Primary Clarifiers and New Influent Gates at Clinton Wastewater Treatment Plant: R. H. White Construction Co., Inc., Contract 7277A, Change Order 9

The Committee recommended approval of Change Order 9 (ref. agenda item C.1).

The meeting adjourned at 11:40 a.m.

\* Approved as recommended at November 18, 2015 Board of Directors meeting.

\*\* Contract awarded to Barletta Engineering Corp.



### STAFF SUMMARY


**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** December 16, 2015  
**SUBJECT:** Alewife Brook Pump Station Rehabilitation  
Fay, Spofford & Thorndike, LLC  
Contract 7034, Amendment 2



COMMITTEE: Wastewater Policy & Oversight

         INFORMATION  
  X   VOTE

John P. Vetere, Deputy Chief Operating Officer  
A. Navanandan, P.E., Chief Engineer  
David K. Pottle, P.E., Program Manager  
Preparer/Title



Michael J. Hornbrook  
Chief Operating Officer

*Amendment 2 to Contract 7034 extends the consultant construction phase services as a result of additional design efforts addressing increased flood protection of the facility, increased energy efficiencies, and a construction contract delay caused by bidding protest. Overall, the costs associated with this time extension are relatively minor and resulted in a better-protected, more energy-efficient pump station.*

#### RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Amendment 2 to Contract 7034, Alewife Brook Pump Station Rehabilitation, with Fay, Spofford & Thorndike, LLC, in the amount of \$73,305, increasing the contract amount from \$1,739,720.63 to \$1,813,025.63, and extending the contract term by 748 calendar days from April 29, 2017 to May 17, 2019.

#### DISCUSSION:

The Alewife Brook Pump Station in Somerville (shown on the right), constructed in 1951, receives wastewater from portions of Arlington, Belmont, Cambridge, Medford, and Somerville. All flow is pumped to the North Metropolitan and North Metropolitan Relief Sewers, and ultimately conveyed to Deer Island for treatment.



On February 15, 2012, the Board approved the award of Contract 7034 to Fay, Spofford & Thorndike, LLC, (FS&T<sup>1</sup>) in an amount not to exceed \$1,558,446.39, for a term of 1,703 calendar days for final design, and construction administration and resident engineering services for the Alewife Brook Pump Station Rehabilitation project.

The project includes: replacement of wet-weather pumps, motors, gear drives, variable frequency drives, a motor control center, influent screens, sluice gates, a standby generator, roof, programmable logic controller, air handling and air conditioning units; remediation of PCB-containing paints; remediation of asbestos-containing roofing and insulation materials; installation of a flow meter on the 66-inch downstream Alewife Brook Conduit; flood control measures; and energy efficiency improvements.

### **This Amendment**

Conditional award of the construction contract, Contract 6797, for rehabilitation of the pump station was approved by the Board on July 15, 2015. Advancement of Contract 6797 was then placed on hold pending resolution of a bid protest. Following the bid protest decision by the Attorney General's office on November 17, 2015, the Board approved the award of Contract 6797 on November 18, 2015.

Proposed Amendment 2 increases the contract term and provides funding for additional contract administration services, additional design services, hourly rate escalation, the additional bid protest assistance services that were required, and preparation of documents supporting building permit issuance.

### Additional Contract Time

748 days

Contract 7034 provides construction administration and resident engineering services for oversight of Construction Contract 6797. The current end date of Contract 7034 is April 29, 2017. Staff anticipate that the Notice to Proceed for construction will be issued January 15, 2016. The current Substantial Completion date for Contract 6797 is May 17, 2018, with the one-year warranty period extending through May 17, 2019. Contract 7034 must be extended by a total of 748 calendar days to align with the end of Contract 6797's warranty period.

The need to extend the completion date for this contract is due primarily to MWRA's decision to incorporate flood control measures and energy efficiency improvements that will result in a better-protected and more energy-efficient facility, an increased review, comments, and revisions process, and an extended construction contract bid protest. The cost impacts of these delays are relatively minor and are further detailed below.

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<sup>1</sup> FS&T was recently acquired by Stantec Consulting Services, Inc. If approved by the Board, Amendment 2 will be executed by FS&T. Staff are preparing a separate staff summary for future approval of the Board to formally assign all current FS&T contracts with MWRA to Stantec Consulting Services, Inc.

Additional Contract Administration Services \$32,883

Additional contract administration and management services, including management of subconsultants and progress, accrual, and M/WBE reporting, and invoicing, has been performed throughout the extended design and bidding phase. (It should be noted that the cost of this additional contract administration has been held to less than the monthly contractual rate by not holding progress meetings every month and by having progress reports and invoices bundled to cover multiple billing periods.)

Additional Design Services \$23,117

Significant revisions were made to the construction specifications to account for statutory and regulatory changes. Going forward, staff will update the standards for drafting construction specifications that are included in design Requests for Proposals.

Hourly Rate Escalation \$11,000

Construction administration and resident engineering services will be performed later than planned. Hourly rates for construction administration and resident engineering services will increase in accordance with the contract-specified annual escalation percentages.

Bid Protest Assistance \$4,305

FS&T provided support to MWRA throughout the construction contract bid protest in the form of attendance at meetings, review of documents, and compilation and provision of records. Required services exceeded the available budget for bid protest assistance in Contract 7034, and additional funding is needed.

Building Permit Assistance \$2,000

The Department of Public Safety recently requested preparation of a report in the design phase describing the effects of the proposed project on the existing facility and how the work will comply with code. The Department of Public Safety is also requesting preparation of a narrative specific to the proposed fire protection system describing the system and how it will comply with code. The Department of Public Safety requires this information as a condition of issuing the building permit.

**CONTRACT SUMMARY:**

	<u>AMOUNT</u>	<u>TIME</u>	<u>DATED</u>
Contract Amount:	\$1,558,446.39	1,703 Days	03/01/12
Amendment 1:*	\$181,274.24	182 Days	07/31/13
Proposed Amendment 2	<u>\$73,305.00</u>	<u>748 Days</u>	Pending
Adjusted Contract Amount:	\$1,813,025.63	2,633 Days	

\*Approved under delegated authority

**BUDGET/FISCAL IMPACT:**

The FY16 CIP includes a budget of \$1,739,721 for Contract 7034. Including this amendment for \$73,305, the adjusted contract total will be \$1,813,025.63 or \$73,304.63 over budget. This amount will be covered within the five-year CIP spending cap.

**MBE/WBE PARTICIPATION:**

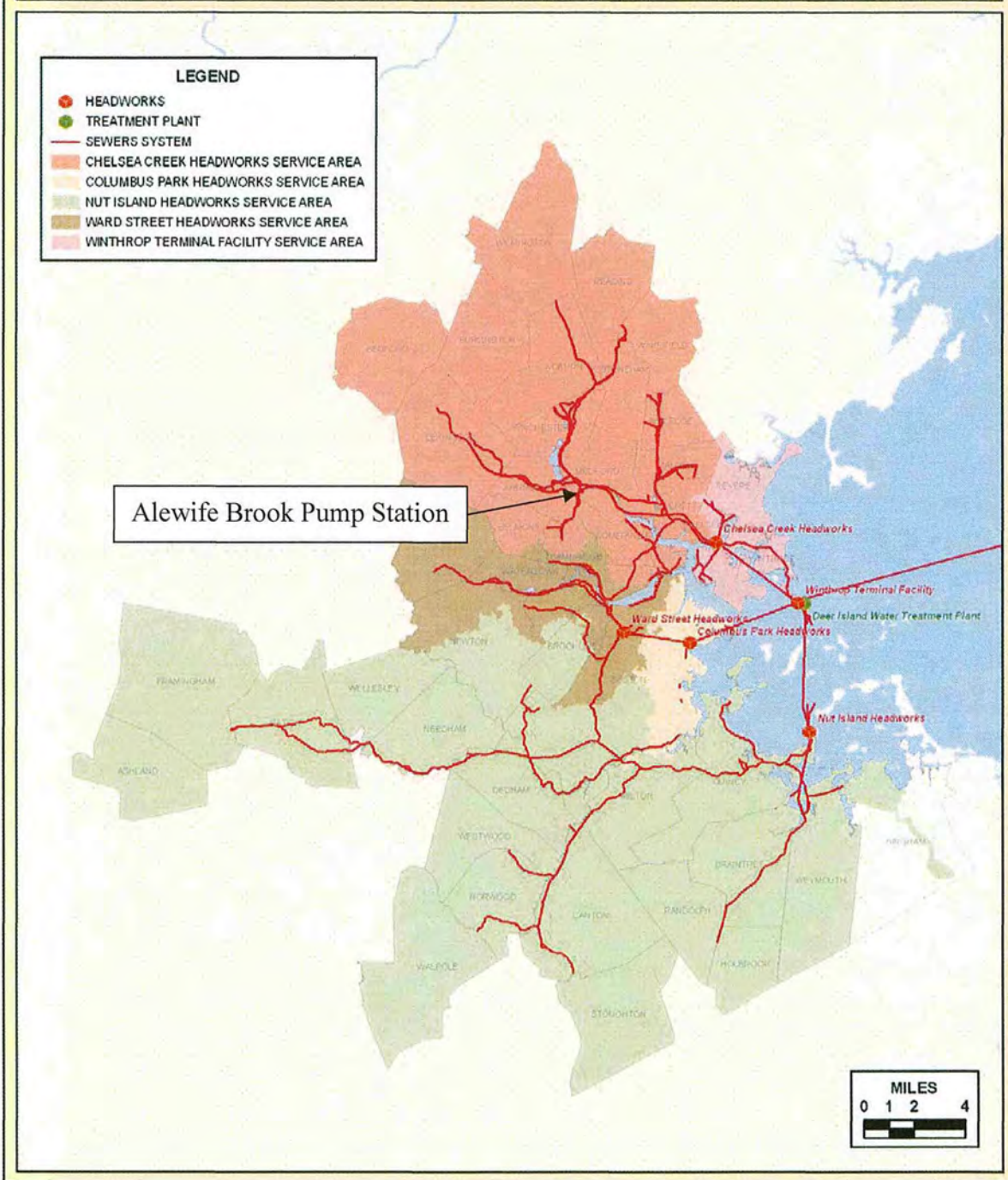
Fay, Spofford & Thorndike LLC has committed to 9.84% MBE and 6.76% WBE participation; these percentages will be unchanged by Amendment 2.

**ATTACHMENT:**

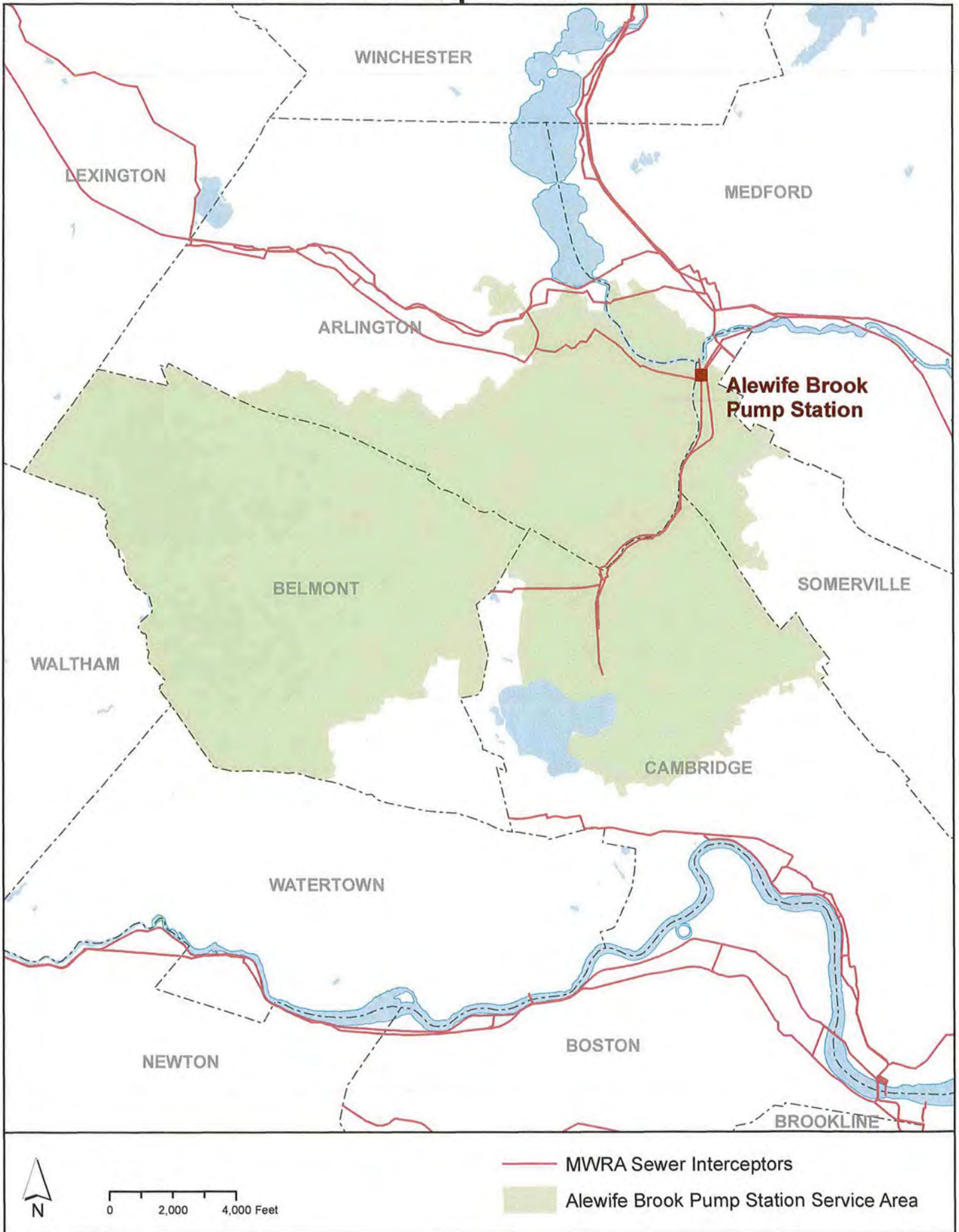
Attachment A – System Map Showing Alewife Brook Pump Station  
Attachment B – Alewife Brook Pump Station Service Area

Attachment A

Location of Alewife Brook Pump Station



# Alewife Brook Pump Station Service Area





# 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. Pappastergion

*Vice-Chair:* (vacant)

*Committee Members:*

J. Carroll

J. Foti

H. Vitale

J. Walsh

J. Wolowicz

to be held on

Wednesday, December 16, 2015

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

Time: Immediately following Wastewater Comm.

## AGENDA

### **A. Approvals**

1. MOA with the City of Newton for Use of Sudbury Aqueduct Lands
2. Emergency Water Supply Agreement with the Town of Ashland

### **B. Contract Awards**

1. Technical Assistance Consulting Services for John J. Carroll Water Treatment Plant: Stantec Consulting Services, Inc., Contract 7407
2. Quabbin Power and Security Improvements: Ewing Electrical Company, Inc., Contract 7338

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the  
Water Policy and Oversight Committee

November 18, 2015

A meeting of the Water Policy and Oversight Committee was held on November 18, 2015 at the Authority headquarters in Charlestown. Chairman Pappastergion presided. Present from the Board were Messrs. Blackmon, Carroll, Cotter, Flanagan, Foti, Pena, Vitale, and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Andrew Hildick-Smith, Dave Coppes, John Gregoire, Nava Navandan, Pat Barrett, Bill Sullivan, and Bonnie Hale. The meeting was called to order at 11:40 a.m.

**Information**

Emergency Response Drill – Wachusett Reservoir

Staff gave a presentation on the October 15, 2015 inter-agency emergency response drill at the Wachusett Reservoir.

Remediation of Direct Discharges at Wachusett Reservoir

Staff gave a presentation on work done to date and the status of remaining project phases.

Update on Lead and Copper Rule Compliance – Fall 2015

A brief summary was provided.

**Contract Awards**

\*Supply and Delivery of Soda Ash to the John J. Carroll Water Treatment Plant: Tata Chemicals Soda Ash Partners, Bid WRA-4103

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

\*Northern Intermediate High Section 110 - Reading and Woburn: Albanese D&S, Inc., Contract 7471

Staff gave a presentation on this construction project, and there was a brief discussion. The Committee recommended approval of the contract award (ref. agenda item B.2).

\* Approved as recommended at November 18, 2015 Board of Directors meeting.



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

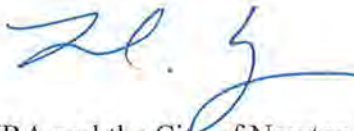
Staff gave a presentation on the project, and there was general discussion. The Committee recommended approval of the contract award (ref. agenda item B.3).

The meeting adjourned at 12:25 p.m.

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\* Approved as recommended at November 18, 2015 Board of Directors meeting.

**STAFF SUMMARY**


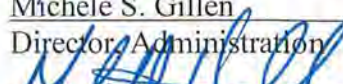
**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** December 16, 2015  
**SUBJECT:** Memorandum of Agreement between MWRA and the City of Newton

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COMMITTEE: Water Policy & Oversight

   INFORMATION  
  X VOTE

David W. Coppes, P.E., Director, Waterworks  
Michael J. McCarthy, Sr. Program Manager, OCC  
Preparer/Title

  
Michele S. Gillen  
Director, Administration  
  
Michael J. Hornbrook  
Chief Operating Officer

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**RECOMMENDATION:**

To authorize the Executive Director, on behalf of the Authority, to execute a Memorandum of Agreement between the Massachusetts Water Resources Authority and the City of Newton, substantially in the form attached hereto, allowing Newton to utilize approximately 5,000 square feet of Sudbury Aqueduct land for permanent vehicle access and the installation and maintenance of a retaining wall and up to 15,000 square feet temporarily during construction of the wall, the compensation for which is Newton's assistance in the form of temporary or permanent easements and/or access to public roadways for future MWRA projects, including the rehabilitation of the Sudbury Aqueduct.

**DISCUSSION:**

In support of the construction of a new City of Newton Fire Department Headquarters Station, Newton approached MWRA about utilizing a limited portion of Sudbury Aqueduct land for both temporary and permanent access and for the installation of a retaining wall in Newton Center (see aerial site map attached). The proposed Memorandum of Agreement (MOA) includes a condition for the appropriate setbacks from the Aqueduct itself, several conditions intended to protect the integrity of the Aqueduct, and the document reserves all of MWRA's existing rights in or on the premises. Staff would note that the access and retaining wall locations are within the Aqueduct property, but not over the Aqueduct itself.

The Fire Headquarters Station construction project involves maintaining the historic building on the site and a site design which would improve the Department's emergency response time by relocating the emergency vehicle entrance and exit locations.

The Sudbury Aqueduct provides emergency water to MWRA's Metropolitan area and is currently the only redundant supply to the City Tunnel from Weston to the Chestnut Hill Reservoir in Boston. Public access is also allowed and widely enjoyed on portions of the Aqueduct. The critical nature of this emergency aqueduct was highlighted during the May 2010 water main break when the Sudbury Aqueduct was activated to supply water to 31 communities for four days under a boil water order. MWRA plans minimally to maintain the Sudbury as an emergency water supply. Staff are considering several alternatives to provide redundancy to the City Tunnel including slip-lining the Sudbury or constructing a new tunnel with a shaft near MWRA's Commonwealth Avenue Pump Station. These alternatives would require access points in Newton, including on City-owned property, and by signing this MOA, Newton agrees to provide easements and/or permits as needed for this project.

**BUDGET/FISCAL IMPACT:**

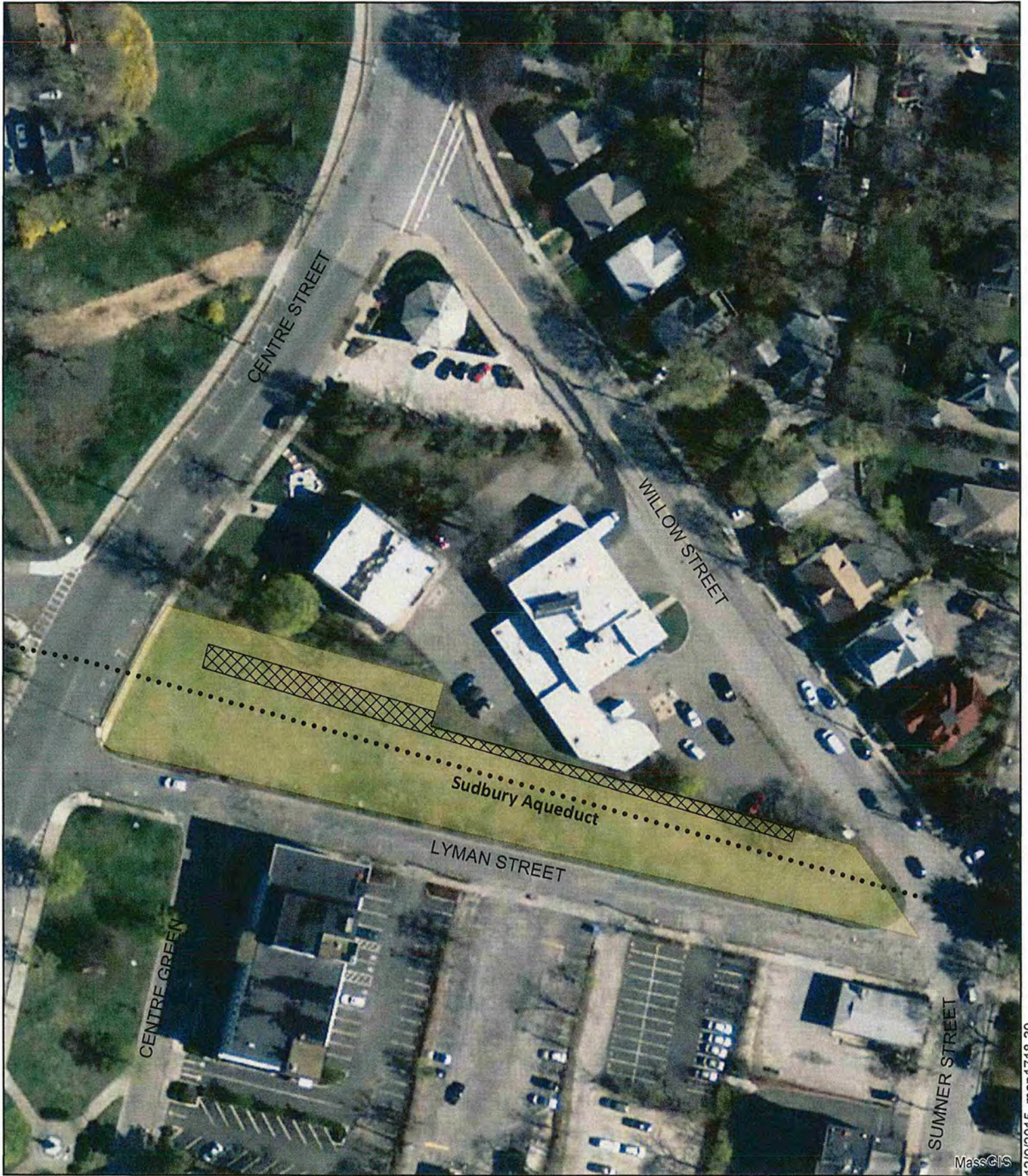
Execution of this MOA includes no monetary consideration and therefore, there are no budget/fiscal impacts.

**ATTACHMENTS:**

- Attachment 1 – Draft Copy of Memorandum of Agreement
- Attachment 2 – Aerial Site Map





# Newton Center - Sudbury Aqueduct

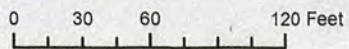


12/9/2015 map1718-39

MassGIS

 Approximate location of temporary and permanent uses

 Sudbury Aqueduct Property



### Data sources

- Property boundary digitized from land plans.
- Location of temporary and permanent uses digitized from plan from City of Newton.
- Color ortho imagery (2005).

### Map for Reference Only

This dataset/map is for convenience only. There are no warranties as to the accuracy and/or use.

MEMORANDUM OF AGREEMENT  
BETWEEN  
MASSACHUSETTS WATER RESOURCES AUTHORITY  
AND  
CITY OF NEWTON

This MEMORANDUM OF AGREEMENT ("MOA") is made this \_\_\_\_\_ day of \_\_\_\_\_, 2015, by and between the MASSACHUSETTS WATER RESOURCES AUTHORITY a body corporate and politic and an independent authority pursuant to St. 1984, c.372 of the laws of the Commonwealth of Massachusetts ("MWRA" or "Authority"), and the CITY OF NEWTON, duly incorporated as a City under the laws of the Commonwealth of Massachusetts ("Newton"). MWRA and Newton may hereafter be referred to as "Party" or "Parties."

RECITALS

WHEREAS, Newton is in the process of designing and constructing a Fire Station and Fire Headquarters in the vicinity of Willow Street and Lyman Street in the City of Newton ("Project"); and

WHEREAS, the Project will be on land adjacent to, and in close proximity of, MWRA's Sudbury Aqueduct ("Aqueduct") and land owned by the Commonwealth of Massachusetts under the care, custody and control of MWRA ("MWRA Land"); and

WHEREAS, in order to support the project, Newton will need access over and through said MWRA Land; and

WHEREAS, if access over MWRA Land is provided to Newton, Newton will need to build a retaining wall on said MWRA Land;

WHEREAS, MWRA is willing to provide such access to Newton, provided that MWRA's Aqueduct is adequately protected at the Project site, both on MWRA Land and land owned by Newton in order to maintain the Aqueduct's integrity.

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

1. ACCESS

1.1 MWRA will provide Newton with a non-exclusive right of access to, and egress from, the Project site along the northwest section of the Aqueduct to and from Centre Street (the "Premises") as shown on a plan of Land, entitled "Newton Center-Sudbury Aqueduct" attached hereto as Exhibit A.

1.2 Newton may build a retaining wall along the length of the Aqueduct on the Premises, provided that the following conditions are met:

1.2.1 The retaining wall is to be installed on both MWRA land and Newton owned land and shall be no closer than twenty (20) feet from the centerline of the Aqueduct.

1.2.2 An installation plan, with supporting calculations for the retaining wall shall be submitted to MWRA for review and approval. Such plans and calculations must be stamped by a Professional Engineer, licensed in the Commonwealth of Massachusetts.

1.2.3 MWRA Land may not be used as a laydown area to either support the construction of the retaining wall, or the new fire station. No construction material may be stored or stockpiled on the Aqueduct.

1.2.4 No light, medium or heavy equipment may be placed on or cross over the Aqueduct, unless i) a complete structural analysis has been performed by a Professional Engineer, licensed in the Commonwealth of Massachusetts, and ii) such analysis has been provided to MWRA for review, and iii) such analysis is acceptable to MWRA.

1.2.5 Newton agrees to abide by the Additional Conditions attached hereto as Exhibit B.

## 2. NEWTON'S RESPONSIBILITIES

2.1 Newton's use of the Premises shall at no time interfere with the Authority's activities or operations on the Premises. The Authority has the right to review and approve all of the Newton's work including such plans and specifications as the MWRA deems necessary. Any proposed future work beyond the scope of this MOA must have the prior written approval of the MWRA, which approval will not be unreasonably withheld.

2.2 To the extent permitted by law, Newton and its successors and assigns agrees to indemnify, hold harmless the Authority and its successors and assigns from all damages and/or claims arising from the negligent or wrongful acts or omissions of Newton on the Premises or of its employees acting within the scope of her or his office or employment provided that the extent of Newton's indemnification hereunder shall not exceed Newton's liability for the actions and omissions of its employees as governed by Massachusetts General Law chapter 258.

2.2.1 Newton agrees that for any work under the Project to be performed by a contractor or consultant, it shall cause that contractor, consultant, and any subcontractors and subconsultants to indemnify without limitation and hold harmless the MWRA, and its successors and assigns, from any and all damages, loss, cost and expense due to loss or damage to property, or injury to or death of any person, arising out of, or in any way resulting from, the performance of the Project, or from any acts, errors or omissions. Newton shall cause such parties to name MWRA as an additional insured on any general liability insurance policy, that it requires of such persons performing the Project.

2.3 Entering into this MOA shall in no way interfere with the rights of the Authority to exercise its existing rights in or over the Premises. Newton acknowledges

that the Authority may enter upon the Premises at any time in order to carry out the inspection, maintenance, repair, and replacement of its property.

2.4 Newton will give the Authority at least 72 hours verbal notice before commencing the operations as pursuant herein.

2.5 No blasting, drilling or other activity that is not in accordance with the plans approved for the project that could in any way affect the integrity or operability of the Authority's property or use of the Premises shall be permitted without express prior written approval of the Authority.

2.6 Newton hereby releases MWRA, its Board of Directors, employees and agents, from any and all claims, suits, and causes of actions of any kind or description not caused solely by the negligent act of an employee or agent of the MWRA arising out of or related to any work or activity under this MOA, including without limitation those for loss, damage or destruction of property, for personal injury or death of any consultant, contractor, employee, or agent of either Newton or any entity acting by or through it hereunder, and from any and all damages arising out of any such claims including any direct, indirect or consequential damages, economic loss or loss of profits, together with all attorneys' fees and any related costs and expenses.

### 3. MWRA UPCOMING PROJECTS

3.1 MWRA is currently reviewing its operational needs with regard to potential projects concerning a tunnel connection on Newton-owned land adjacent to MWRA's Commonwealth Avenue Pump Station and potential rehabilitation of the Sudbury Aqueduct along and adjacent to numerous public streets and roadways. If either or both of those projects go forward, MWRA will need assistance from Newton in the form of permanent or temporary easements and/or access to public roadways.

3.2 Newton hereby agrees to assist MWRA in the performance of these projects by granting the necessary rights in property, consisting of permanent and temporary easements and roadway access to enable MWRA to construct, operate and maintain those facilities within the City of Newton.

3.3 In the event that Newton is unable to provide such permanent and temporary easements, or roadway access, MWRA reserves all of its rights to occupy and use the Premises for the support of its construction projects irrespective of whether such use by MWRA hinders, impedes or prevents the use of the Premises by Newton.

### 4. TERM

4.1 The term of this Agreement shall, unless otherwise agreed to by the parties, commence on the date written above and continue in effect until terminated on the occurrence of i) a failure on the part of either party to abide by a material term of this MOA and written notice is given to the defaulting party by the non-defaulting party of its

intent to terminate; or ii) by mutual agreement of the Parties; or ii) revocation by MWRA due to operational needs.

## 5. AMENDMENTS

5.1 The parties to this MOA may amend this MOA only by a writing duly executed by both parties.

## 6. SEVERABILITY

6.1 If any part of this MOA is determined to be invalid, illegal or unenforceable, such determination shall not affect the validity, legality or enforceability of any other part of the Agreement and the remaining parts of this Agreement shall be enforced as if such invalid, illegal or unenforceable part were not contained herein.

## 7. NOTICE

7.1 Whenever, by the terms of this instrument, notices may or are to be given either to Newton or the MWRA, such notice shall be deemed to have been given, if in writing and either delivered by hand or by US mail to the following addresses:

To Newton: Joshua R. Morse  
Commissioner of Public Buildings  
City of Newton  
1000 Commonwealth Avenue  
Newton, MA 02459  
(617)796-1600  
[jmorse@newtonma.gov](mailto:jmorse@newtonma.gov)

To MWRA:  
Michael McCarthy, Sr. Program Manager  
Massachusetts Water Resources Authority  
2 Griffin Way  
Chelsea, MA 02150

## 8. ENTIRE AGREEMENT

8.1 This agreement, constitutes the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior agreements, understandings, expectations, negotiations, and discussions of the parties, whether oral or written. There are no representations by either party which are not specifically set forth in this agreement.



9. GOVERNING LAW

9.1 This agreement shall be executed and delivered in the Commonwealth of Massachusetts and shall be construed and enforced in accordance with, and shall be governed by, the laws of the Commonwealth of Massachusetts.

10. DISPUTES/COOPERATION

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

11. COUNTERPARTS

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

12. AUTHORITY

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

IN WITNESS WHEREOF, the Parties hereto have set their hands and seals on the day and year first written above.

MASSACHUSETTS WATER RESOURCES  
AUTHORITY

CITY OF NEWTON

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

By: \_\_\_\_\_  
Setti D. Warren  
Mayor  
City of Newton

Approved as to legal form and

character: \_\_\_\_\_  
Suzanne P. Egan, Assistant  
City Solicitor

## EXHIBIT B

### ADDITIONAL CONDITIONS:


1. **Newton or its designee to provide at least 72-hour prior notice to David Coppes at (508) 872-4388 or Guy Foss (508) 424-3661 for Mark-outs and Inspection Services (266 Boston Post Road, Southborough, MA 01772).**
2. A minimum vertical clearance of 18 inches shall be maintained between the Authority's water mains and other utility crossings unless otherwise noted. However, gas/water and service crossings with a pipe size diameter of 2-inches or less may be permitted to cross the Authority's pipe line at a reduced clearance subject to MWRA review. (Except for special provisions, i.e. capped or plugged pipes, thrust blocks and or bends which would require a greater clearance separation)
3. A minimum of three-(3) feet horizontal clearance is required between adjacent utilities and the side (spring line) of any MWRA main. (Except for special provisions, i.e. capped or plugged pipes, thrust blocks and or pipe bends which would require a greater clearance separation)
4. Crossings of MWRA water mains shall be located a minimum horizontal distance of at least four (4) feet from any joints of the Authority's mains.
5. Proposed pipe/utility crossings of the Authority's water mains shall cross at a 90-degree angle to minimize interference.
6. For distances over four (4) feet of the Authority's mains which are to be undermined the method and type of support shall be submitted and stamped by a Professional Engineer (P.E.) licensed in Massachusetts for prior approval by the Authority.
7. For distances under four (4) feet of the Authority's mains which are to be undermined, the on-site MWRA inspector shall review and approve the proposed support of the main. Under no circumstances shall the Authority's main be left in an unsupported, undermined position overnight.
8. During construction, appropriate sheeting measures must be taken to protect the integrity of the Authority's water mains. The sheeting design must be reviewed by the Authority prior to the start of the construction. The design shall be stamped by a Professional Engineer, licensed in Massachusetts. The use of a Trench Box is not permitted in this location.

9. Suitable compaction methods shall be employed in restoring the beds of the MWRA's mains backfilling around the MWRA's main shall be placed in maximum 6-inch lifts and compacted by hand vibratory compactors.
10. The MWRA pipeline must be protected at all times during construction. The Authority may require a professional engineer licensed in the State of Massachusetts to submit a construction plan and perform such analysis as it deems necessary to protect the integrity of the Aqueduct.
11. Screened gravel shall be uniformly graded with maximum size of a particle between 3/8 inch and 3/4 inch. Screened gravel shall consist of clean, hard and durable particles free from an excess of soft, elongated and disintegrated pieces or other objectionable material. Crushed rock of suitable size and grading maybe used in place of screened gravel at the option of the MWRA Inspector.
12. For test pit excavations or unearthing of the Authority's water main Newton must excavate the last **2-feet, before the top of pipe, by hand** or use a vacuum boring method and backfill with approved material within an easement or roadway area.
13. Newton is responsible to adjust any or all MWRA frames and covers to grade within their limits of work in accordance with the plans referenced in this permit. The Authority will provide the contractor with new replacement MWRA frames and covers that have been deemed unusable by Authority personnel.
14. All MWRA manhole openings that were covered during the binder course installation shall be made accessible within 48-hours. MWRA manhole frame and covers shall not be removed for grinding and or pulverizing. Pulverizing is not allowed over MWRA manhole structures. The contractor will provide a logistics construction schedule in writing, along with emergency contact information whenever MWRA valves (manhole covers) or facilities are covered or obstructed.
15. MWRA Inspection personnel must be on site whenever excavation, construction and hoisting or rigging occurs around an MWRA water main pipeline.
16. No construction equipment including cranes, backhoes or material may be parked, stationed, set up or stored on top of the MWRA's water mains or infrastructure.
17. Replacement (shutdown) of the MWRA's mains shall be coordinated with the Authority. Four-(4) weeks-advanced notice in writing is required for shutdowns.
18. Newton or its designee shall contact the Authority three (3) weeks in advance when an MWRA water main valve must be operated. **Only MWRA Personnel Will Operate MWRA Valves.** Newton or its designee shall not operate any MWRA valves. MWRA Valve Operations are limited during peak demand periods and may not be available between the dates of **May 15th** and **September 15th** of each calendar year.
19. Newton will be responsible to protect and correct any damage(s) to the Authority's property or pipeline that may occur as a result of the negligent or wrongful acts of an employee of Newton acting within the scope of her or his office or employment subject

to G.L. c. 258 . Newton will cause its contractors and consultants to protect and correct any damage to Authority arising out of or in any way the result of their performance of the Project.

20. As-built drawings shall be furnished to the Authority upon the completion of permitted work. A Professional Massachusetts Registered Land Surveyor shall stamp as-built drawings.
21. Newton hereby releases the Authority and waives any claim it may have for damage to the retaining wall built pursuant to this MOA, and/or for damage to property or injury to persons while such property or persons are in use of the Premises for access and egress, resulting from the failure of the Aqueduct or any other Authority infrastructure present on or under the Premises.
22. This MOA addresses only MWRA-owned and operated infrastructure. Newton is required to obtain needed separate approvals from the City, Town and other State Agencies.
23. The permitted work and location of installed facilities and appurtenances shall not deviate from the construction plan that is referenced in this MOA. No field changes are allowed without prior review and written approval by the MWRA. An MWRA on site inspector shall review all field changes and coordinate with Newton regarding submitting a change of work plan to the Authority for review and comment. If MWRA field inspection indicates changes undertaken without approval, Newton may be issued a cease and desist order and be required to correct/reconstruct any completed work.

**STAFF SUMMARY**

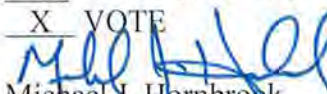
**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** December 16, 2015  
**SUBJECT:** Emergency Water Supply Agreement with the Town of Ashland

---

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 a six-month Emergency Water Supply Agreement with the Town of Ashland, substantially in the form attached hereto.

**DISCUSSION:**

On November 12, 2015, the Town of Ashland requested an emergency water supply withdrawal from MWRA. Ashland relies on five wells in the Howe Street well field, which is adjacent to the Hopkinton State Reservoir. The reservoir elevation and the elevation of the groundwater in the well field are inter-related, and due to lower-than-normal precipitation, Ashland is concerned that water levels may drop and its wells may lock-out. Supply of MWRA to Ashland would be via Ashland's interconnection with Southborough at the Ashland/Southborough Town line.

This is the third six-month emergency withdrawal period for Ashland: prior six-month emergency withdrawal requests were approved in December 2007 and December 2013. In accordance with MWRA Policy #OP.05, *Emergency Water Supply Withdrawals*, any water withdrawn under a third six-month emergency withdrawal period requires a premium charge of 10% of the prevailing rate, as well as a charge based on 110% of 2/3 of the annual payment associated with the asset value contribution amortized with interest over 15 years.

The MWRA Advisory Board Executive Committee and full Advisory Board voted on November 13 and 19, 2015, respectively, to allow Ashland to activate a third six-month emergency water supply connection to MWRA's system, subject to the anticipated receipt of a DEP declaration of emergency water supply. The Advisory Board voted approval for a six-month period, from December 2015 through June 2016. The Advisory Board's letter to MWRA noted that, as implied in the Advisory Board vote, the official date for the activation of the emergency connection will be triggered by the receipt of DEP's Declaration of Emergency Water Supply and will be in effect six months from that date. The approval requires Ashland to abide by the rules stipulated under emergency water supply withdrawals, #OP.05, including payment of premium and asset value contributions. The Advisory Board approval is included in Attachment 2:

## Emergency Water Supply Approval Criteria and Requirements

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

- *There must be no negative impact on MWRA's system and member communities.* Ashland's withdrawal would have no negative impact on the MWRA system. Water would be supplied via Southborough, and Southborough's connection to MWRA is not constrained. Ashland and Southborough have conducted pump tests to ensure that Southborough may comfortably wheel MWRA water to Ashland via Southborough's distribution system.
- *DEP must declare that an emergency exists.* On December 10, 2015, DEP issued an Emergency Declaration (see copy attached). DEP's written Declaration will be included as an Attachment to MWRA's emergency agreement with Ashland. DEP's Emergency Declaration extends until May 31, 2016. Should Ashland desire MWRA water beyond May 31, 2016, the DEP Declaration will need to be extended.
- *A long-term plan to remedy supply deficiencies must be developed.* Ashland's long-term plan to remedy supply deficiencies is to become an MWRA partially-supplied community. In May 2015, Ashland Town meeting voted affirmatively to begin the application process to join the MWRA water system. An Environmental Notification Form was submitted to MEPA shortly thereafter, followed by submission of a Draft Environmental Impact Report (DEIR) in late September 2015. The DEIR set forth Ashland's proposal to purchase up to 120 million gallons a year and up to 1.6 million gallons per day from MWRA, with use of MWRA water on a year-round basis as needed during periods of low groundwater levels.

The DEIR Certificate issued by MEPA on November 13, 2015 determined that the DEIR adequately and properly complied with MEPA. Based on recommendations from the Water Resources Commission and DCR, the MEPA Certificate directs that the Final Environmental Impact Report evaluate Ashland's withdrawal of MWRA water at a rate of at least 1.0 mgd from May to August (the maximum day withdrawal may be more), with the intent to reduce water level declines that may adversely impact recreational use of Hopkinton Reservoir within Hopkinton State Park. Maximizing MWRA withdrawals in the summer differs from Ashland's proposal. The Certificate also reflects agencies' views that there are no viable alternatives for additional water sources within the Town and indicates state agencies support of the Town's request to obtain supplemental water from MWRA.

- *The applicant community does not use MWRA water supply as a chronic emergency back-up supply without equitable contribution for the fair asset value of the MWRA waterworks system.* Terms of this third emergency water supply agreement include a provision that MWRA will bill Ashland for a net asset value payment equal to 110% of 2/3 of the annual payment associated with the asset value contribution amortized with interest over 15 years.

- *The Community must submit a detailed description of water conservation and water accountability programs undertaken.* The Town is working on a number of conservation programs that include:
  - Leak detection. A recent leak detection survey identified 99,000 gallons per day (gpd) of water loss, and 85,000 gpd of leaks have since been repaired; remaining leak repairs are scheduled;
  - Ongoing implementation of a 15-year meter replacement program identifying older meters and developing a system for monitoring meter age;
  - Declaration of Water Supply Stage 1 (August) and Stage 2 (September) per Ashland Bylaw. These declarations impose additional restrictions on top of permanent outdoor water use restrictions that are already in place;
  - Conservation Pricing;
  - Public education; and
  - The availability of conservation kits for all residents.

#### Contents of Emergency Water Supply Agreement

Staff recommend that MWRA and the Town of Ashland enter into an Emergency Water Supply Agreement. The proposed emergency water supply agreement will extend from December 16, 2015 to May 31, 2015, unless DEP extends its Emergency Declaration to extend to June 15, 2016, in which case the Board's approval of the Third Emergency Water Supply Withdrawal period will extend from December 16, 2015 to June 15, 2016. Pursuant to the Agreement, all withdrawals must be metered. The Agreement also requires Ashland to adhere to all conditions and requirements contained in the DEP Declaration of Water Supply Emergency. Ashland is also required to submit to MWRA copies of any reports required to be submitted to DEP in compliance with the Declaration of Water Supply Emergency. The Agreement reflects MWRA's charges for emergency withdrawals, including a premium charge added to the prevailing rate, as well as an asset value contribution. The Agreement also incorporates, by reference, an inter-municipal agreement between the towns that governs the terms for the sale and operational details and arrangements.

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

Pursuant to #OP.05, water taken for the third six-month emergency withdrawal is charged at the prevailing rate plus a 10% premium charge on that rate, plus 110% of 2/3 of the annual payment associated with the asset value contribution payment amortized with interest over 15 years. MWRA will review monthly use information to determine and assess the surcharge amounts. At this time, it cannot be projected if and for how long low groundwater levels will compromise Ashland's ability to use all of its wells. Therefore, the amount of revenue MWRA will receive cannot be projected at this time.

#### **ATTACHMENTS:**

Draft Ashland Emergency Water Supply Agreement  
 MWRA Advisory Board Letter of Approval  
 DEP Emergency Declaration

EMERGENCY WATER SUPPLY AGREEMENT  
BETWEEN  
THE MASSACHUSETTS WATER RESOURCES AUTHORITY  
AND  
THE TOWN OF ASHLAND

Parties.

This Emergency Water Supply Agreement (“Agreement”) is entered into by and between the Massachusetts Water Resources Authority (“MWRA”), and the Town of Ashland (“Ashland”) hereinafter jointly referred to as the “Parties.” This Agreement documents the agreement and understanding of the Parties regarding the arrangement whereby MWRA will supply water to Ashland through an interconnection that Ashland has with Southborough, an MWRA served water community and whereby Ashland will purchase a portion of its water supply from the MWRA through Southborough on an as-needed, emergency basis for a period not exceeding six months, as indicated in paragraph 11 hereof.

Recitals.

- R.1. The MWRA was created by the Massachusetts legislature in December, 1984 to operate, regulate, finance, and modernize the waterworks and sewerage systems servicing the greater metropolitan Boston area. Operating pursuant to the terms of Section 8(d) of its Enabling Act, chapter 372 of the Acts of 1984 (the “Act”), and pursuant to the Policies and Procedures for Emergency Water Supply Connections of its Board of Directors, the MWRA may enter into arrangements to provide emergency supplies of water to any local body of the Commonwealth, provided certain conditions are met.
- R.2. Ashland is a duly constituted municipal corporation of the Commonwealth of Massachusetts (“Commonwealth”).
- R.3. Southborough is supplied by the MWRA and Ashland has an emergency interconnection through Southborough to the MWRA water supply system.
- R.4. Ashland relies on five wells in a well field (the Howe Street well field) adjacent to the Hopkinton State Reservoir. The reservoir elevation impacts the elevation of the groundwater in the well field. The elevation of Hopkinton Reservoir has dropped significantly below normal and has adversely affected Ashland’s wells and ability to meet water demands.
- R.5. On November 12, 2015 The Town of Ashland Department of Public Works, in a letter to MWRA, notified MWRA that the due to lower than normal precipitation and low groundwater levels at the Town’s wells, it had concerns about water levels and an emergency connection would give the Town the tools it needed to ensure a safe and adequate supply.



- R.6 On December 10, 2015, the MA Department of Environmental Protection (MassDEP) issued a Declaration of Water Supply Emergency to Ashland, to remain in effect May 31, 2016, unless extended by DEP. The Declaration of Water Supply Emergency is included as Attachment A to this Agreement.
- R.7 From December 12, 2007 to June 5, 2008, an Emergency Water Supply Agreement between MWRA and the Town of Ashland was in effect. This was the first six-month emergency withdrawal period for Ashland. From December 18, 2013 to June 17, 2014, a second six-month Emergency Water Supply Agreement between MWRAW and the Town of Ashland was in effect.
- R.8. On October 11, 2006, the MWRA's Board of Directors adopted a revised Policy for Emergency Water Supply Withdrawals, OP# 05 (the "Policy") which includes criteria and a process for approving requests for emergency withdrawals.
- R.9. Ashland has applied to the MWRA to use emergency interconnections to the MWRA system through Southborough to supplement Ashland's local water supply sources on an as-needed basis.
- R.10. The MWRA has determined that it can supply Ashland with an emergency water supply for a period not exceeding six months under this Agreement without jeopardizing its ability to supply its member communities and without exceeding the safe yield of its water supply system.
- R.11. Ashland must comply with all applicable legal and regulatory requirements.
- R.12. Pursuant to the MWRA Policy, this Agreement is considered an Emergency Water Supply Agreement Period Three, since two previous Emergency Water Supply Agreement have been in effect.

### AGREEMENT

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

1. Ashland may activate its emergency interconnection with Southborough for a period up to six months, beginning on December 16. The proposed emergency water supply agreement will extend from December 16, 2015 to May 31, 2015, unless DEP extends its Emergency Declaration to extend to June 15, 2016, in which case the water supply agreement will extend from December 16, 2015 to June 15, 2016, in accordance with the terms of this Agreement, subject to termination in accordance with numbered paragraph 11 below.
2. Ashland may take water from the emergency interconnection at a maximum rate of 1.0 million gallons per day over the six month period. Any increase beyond the stated limit on water use will require a revision to the Emergency Water Supply Agreement.

3. The transfer of water from the MWRA through Southborough to Ashland shall not extend beyond a period of six months, unless Ashland submits an application for an additional emergency water supply withdrawal and the MWRA's Board of Directors and Advisory Board approve the additional emergency water supply withdrawal. Any withdrawals beyond the DEP Emergency Declaration six-month period will also require an extension of DEP's Water Supply Emergency Declaration. In considering withdrawals beyond six months, the MWRA will consider Ashland's efforts to reduce consumption, to implement its long range plans and comply with DEP orders, and to implement a water conservation program and water supply protection measures.
4. During the six month term of this Agreement, Ashland shall institute and continue all practicable conservation measures including, but not limited to, a water conservation public education program; 100% metering; leak detection surveys and rehabilitation programs; conservation pricing for water services; and a local by-law governing outdoor water use with appropriate enforcement measures such as fines and water shut-off for non-compliance. Ashland shall actively administer and enforce such local by-law.
5. Ashland shall submit to MWRA a monthly report on water use, and the status of the emergency.
6. Ashland shall comply with all the conditions of any DEP Declaration of Water Supply Emergency. In addition, Ashland shall submit copies to MWRA of any reports required to be submitted to DEP in compliance with the Declaration of Water Supply Emergency.
7. During the term of this Agreement, the MWRA shall bill Southborough for both the total volume of water used by Ashland, as metered by Southborough, and will bill Ashland directly for the 10% surcharge on prevailing rate mandated by the Policy. Southborough shall bill Ashland for water used in accordance with the terms of the inter-municipal agreement between the parties. Ashland shall remit its payments to Southborough for the total volume of water used in accordance with the terms of the inter-municipal agreement between the parties, which is incorporated by reference. Ashland will remit its payments for the 10% surcharge to MWRA directly.
8. MWRA shall bill Ashland directly for the net asset value payment as required by the Policy for this Emergency Water Supply Agreement Period 3 (December 2015-June 2016). The charge will be 110% of 2/3 of the annual payment associated with the asset value contribution payment (entrance fee equivalent) amortized with interest over 15 years.
9. The parties agree that the emergency withdrawal authorized under this Agreement is not appropriate for or intended to provide a permanent water supply to Ashland. Any request by Ashland for a permanent partial water supply from MWRA shall require full consideration of all alternatives, including effective water conservation and leak detection, and shall be subject to all approvals required under Section 8 (d) of Chapter

372 of the Acts of 1984, MWRA policies, and under applicable state law and regulations.

10. Any dispute arising between the MWRA and Ashland under the terms of this Agreement shall be resolved in accordance with the dispute resolution process set forth at 360 C.M.R. 1.00.
11. The term of this Agreement shall extend from the day in December 2015 in which Ashland could begin to take water ("start date") through and including the six-month anniversary of the Start Date. During the term, MWRA reserves the right to terminate this Agreement at any time due to unforeseen circumstances such as inadequate supply, insufficient hydraulic capacity and other conditions related to the safe supply of existing users and operational requirements of the MWRA's waterworks system.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed on this \_\_\_\_\_ day of \_\_\_\_\_, 2015 by their duly authorized representatives.

MASSACHUSETTS WATER  
RESOURCES AUTHORITY

By:

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

TOWN OF ASHLAND

By:

\_\_\_\_\_  
Anthony E. Schiavi  
Town Manager

Arlington • Ashland • Bedford • Belmont • Boston • Braintree • Brookline  
Dedham • Everett • Framingham • Hingham • Holbrook • Leominster  
Medford • Melrose • Milton • Nahant • Natick • Needham • Newton  
Revere • Saugus • Somerville • South Hadley • Southborough • Stoneham  
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Northborough • Norwood • Peabody • Quincy • Randolph • Reading  
Stoughton • Swampscott • Wakefield • Walpole • Waltham  
Wilmington • Winchester • Winthrop • Woburn • Worcester

December 4, 2015

Mr. Frederick Laskey, Executive Director  
Massachusetts Water Resources Authority  
100 1<sup>st</sup> Avenue, Building 39-3  
Boston, MA 02129

Dear Mr. Laskey:

At a regular meeting of the MWRA Advisory Board, held on November 19, 2015 at the Wellesley Free Library, with a quorum present and voting, the members voted the following motion:

**Subject to the receipt of a DEP declaration of emergency water supply, TO ALLOW THE TOWN OF ASHLAND TO ACTIVATE A THIRD EMERGENCY WATER SUPPLY CONNECTION TO THE MWRA WATERWORKS SYSTEM, VIA THE TOWN OF SOUTHBOROUGH, FOR A SIX-MONTH PERIOD, WITH A START DATE IN DECEMBER 2015 THROUGH JUNE 2016. ASHLAND WILL ABIDE BY THE RULES STIPULATED UNDER EMERGENCY WATER SUPPLY WITHDRAWALS (POLICY #OP.05), INCLUDING PAYMENT OF 110% OF THE MWRA PREVAILING RATE, PLUS 110% OF TWO-THIRDS OF THE ANNUAL PAYMENT ASSOCIATED WITH THE ASSET VALUE CONTRIBUTION PAYMENT (ENTRANCE FEE EQUIVALENT), AMORTIZED WITH INTEREST OVER 15 YEARS.**

Please note, as implied in our motion, the official date for the activation of the emergency connection will be triggered by the receipt of the DEP Declaration of Emergency Water Supply and will be in effect six months from that date.

If you have any questions and/or concerns, please do not hesitate to contact MWRA Advisory Board Executive Director Joe Favaloro.

Sincerely,

Louis M. Taverna  
Chairman

cc: Pam Heidell, MWRA  
David Manugian, Ashland



## Department of Environmental Protection

Northeast Regional Office • 205B Lowell Street, Wilmington MA 01887 • 978-694-3200

Charles D. Baker  
Governor

Matthew A. Beaton  
Secretary

Karyn E. Polito  
Lieutenant Governor

Martin Suuberg  
Commissioner

December 10, 2015

Anthony Schiavi, Town Manager  
Town of Ashland  
101 Main Street  
Ashland, Massachusetts 01721

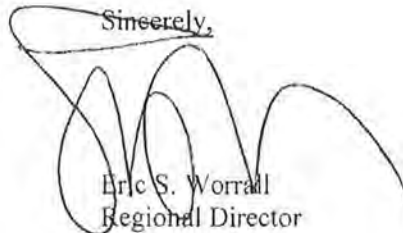
RE: Town of Ashland  
Water & Sewer Division  
WMA Permit # 9P231401402  
PWS ID # 3014000  
Emergency Declaration  
UAO-NE-15-F002

Dear Mr. Schiavi:

On December 4, 2015, the Town of Ashland (the "Town") submitted a petition pursuant to M.G.L. c. 21G, § 15 requesting an Emergency Declaration from the Massachusetts Department of Environmental Protection ("MassDEP") under the provisions of the Water Management Act, M.G.L. c. 21G. According to the petition, low groundwater levels in the Town's groundwater wells require activation of emergency connections with the Massachusetts Water Resources Authority via a connection through the Town of Southborough, MA on a temporary basis until the groundwater has recharged to a safe level. Attached is the MassDEP's Declaration of State of Water Supply Emergency, No. UAO-NE-15-F002, to the Town.

If you have any questions regarding this letter, please contact Melissa Privetera at (978) 694-3403.

Sincerely,



Eric S. Worrall  
Regional Director

CERTIFIED MAIL:70141820000135610711

cc: David Manugian, DPW Dir., Ashland Water & Sewer Div., 20 Ponderosa Rd., Ashland, MA 01721  
Ashland Board of Health, 101 Main St. Ashland, MA 01721  
e-cc: Duane LeVangie, MassDEP/Boston Office  
Heidi M. Zisch, MassDEP OGC-NERO

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

In the Matter of )  
Town of Ashland )  
 )

**Declaration of State of  
Water Supply Emergency  
UAO-NE-15-F002**

**EMERGENCY DECLARATION**

**The Parties**

1. The Massachusetts Department of Environmental Protection ("MassDEP") is a duly constituted agency of the Commonwealth of Massachusetts established pursuant to M.G.L. c. 21, § 7. MassDEP has its principal office located at One Winter Street, Boston, Massachusetts 02108, and a Northeast Regional Office located at 205B Lowell Street, Wilmington, Massachusetts 01887.
2. The Town of Ashland (the "Town") is a municipality within the Commonwealth of Massachusetts having a principal place of business at and a mailing address of 101 Main Street, Ashland, Massachusetts 01721.

**Statement of Facts and Law**

3. The Town operates a public water system, with MassDEP identification number PWS ID# 3014000. The Town operates a water treatment plant at the Howe Street wellfield, which is adjacent to the Hopkinton State Reservoir. In addition to providing water to the Town, it also supplies water to the neighboring Town of Hopkinton. The Town also has an emergency connection to the Massachusetts Water Resources Authority (MWRA) system with the Town of Southborough.
4. On December 11, 2007, following receipt of a petition from the Town seeking an Emergency Declaration, MassDEP issued a Declaration of a State of Water Supply Emergency (the "2007 Emergency Declaration") to the Town as a result of low groundwater levels in the Town's Howe Street wells. Pursuant to the 2007 Emergency Declaration, the Town activated its emergency interconnection to the MWRA system via the connection through the Town of Southborough. The 2007 Emergency Declaration remained in effect until June 7, 2008.
5. On November 25, 2013, MassDEP received a petition from the Town through a letter dated November 25, 2013, requesting a Declaration of a State of Water Supply Emergency.
6. On November 27, 2013, a Declaration of a State of Water Supply Emergency was issued to the Town of Ashland, No. UAO-NE-13-F001 (the "2013 Emergency Declaration").

Activating the interconnection was not needed, and the 2013 Emergency Declaration was terminated on May 1, 2014.

7. The Town has three active wells at Howe Street which draw from groundwater below Hopkinton Reservoir. Two additional groundwater wells have been previously locked due to a pre-existing low groundwater elevation.
8. On December 4, 2015, MassDEP received a petition from the Town through a letter dated December 4, 2015 (the "Petition"), requesting a Declaration of a State of Water Supply Emergency. The petition states...

...due to eight to ten inches reduction from 'normal' precipitation levels this fall (per National Oceanic and Atmospheric Administration records), the Town continues to have concerns about water levels and we feel an emergency declaration gives the Town the tools it needs to ensure a safe and adequate supply of potable water for domestic and fire protection.
9. According to the Petition, the recent lack of rain has resulted in a low water level in Hopkinton Reservoir. As of December 4, 2015 the Town reported that the reservoir elevation was 294.57 feet above sea level, approximately 3.5 feet below the reservoir spillway elevation.
10. The water elevation in the reservoir impacts the elevation of groundwater in the Howe Street wellfield. Under present conditions groundwater is approximately 6 to 8 feet above the well intakes according to the Town's Petition.
11. Additionally, the Town instituted a ban on all outdoor water use starting on November 5, 2015 in an effort to limit its water demand; the ban remains in place.
12. Pursuant to the Water Management Act, M.G.L. c.21G, § 15, MassDEP may declare a state of water emergency, if it finds that there exists or impends a water supply shortage of a dimension that endangers the public health, safety or welfare.
13. The Water Management Act, M.G.L. c.21G, § 15, authorizes any water system to petition MassDEP for a Declaration of a State of Water Supply Emergency if it finds that there exists or impends a water supply shortage of a dimension which endangers the public health, safety or welfare. In response to such a petition and pursuant to this statutory section, MassDEP may require the water supplier to submit for its review and approval a plan for restraining the use of water by whatever means it deems appropriate and feasible. The Declaration of a State of Water Supply Emergency shall be in effect for no more than six months in the aggregate in any twelve month period, unless MassDEP determines that a longer state of emergency is required to protect the public health.
14. Pursuant to the Water Management Act, M.G.L. c.21G, § 17, MassDEP may issue orders during a state of water emergency declared under M.G.L. c.21G, § 15 to, among other things, establish priorities for the distribution of any water or quantity of water use, to

permit any person engaged in the operation of a water supply system to cease the distribution of water, to distribute water to certain users as specified by MassDEP, and to require the implementation of specific water conservation measures.

#### **Determination and Order**

15. For the reasons set forth above and pursuant to the Water Management Act, M.G.L. c.21G, § 15, MassDEP hereby determines that a water supply emergency exists or impends a water supply shortage of a dimension that endangers the public health, safety or welfare of the citizens of the Town. Unless extended by MassDEP, this Emergency Declaration shall remain in effect until May 31, 2016.
16. By issuing this Emergency Declaration, MassDEP hereby grants the Town authority to obtain water from its emergency connection with MWRA via the Town of Southborough. The Town shall comply with the requirements of the MWRA governing emergency use of connections with an MWRA community.
17. The Town shall comply with all the remaining terms and conditions of its Water Withdrawal Permit No. 9P2-3-14014.02 (VERIFY THIS is in correct format) that remain unchanged by this Emergency Declaration. On or before April 1, 2016, the Town shall submit a report documenting all actions taken by the Town to comply with its Water Withdrawal Permit.
18. The Town shall continue its restrictions on nonessential outside water use for the duration of this emergency declaration. At a minimum, these restrictions shall include restrictions requiring the use of hand held hoses only and limiting the hours for outdoor watering to exclude the hours between 9 a.m. through 5 p.m., when evapotranspiration is typically highest. Notwithstanding the foregoing, irrigation of public parks and recreational fields by means of automatic sprinklers equipped with moisture sensors or similar technology may also be permitted outside the hours of 9 a.m. through 5 p.m. For purposes of this Emergency Declaration, the term nonessential outside water use is defined to include those uses that do not have health or safety impacts, are not required by regulation, and are not needed to meet the core functions of a business or other organization. The Town shall have the authority to enforce these regulations through the assessment of penalties or the imposition of fines. The Town shall publish a notice in the local newspaper informing the public of these restrictions and submit a copy of the public notice to MassDEP within 10 days. On April 15, 2016, the Town shall reissue the public notice informing the consumers of the restrictions on nonessential outside water use and submit a copy to MassDEP within 10 days.
19. On or before May 1, 2016, the Town shall submit to MassDEP a written report documenting all efforts taken by the Town to implement and enforce the restrictions on nonessential outside water use required herein including all actions taken by the Town to inform the public of the restrictions and to enforce the restrictions including the assessment of penalties or imposition of fines. The report shall describe water use trends over the period of the emergency and describe progress and the status of all other



conservation programs being implemented by the Town. The Town shall submit copies of all materials and notices prepared to inform the public of the need to conserve water and comply with the restrictions on nonessential outside water use.

20. If the Town fails to comply with the provisions of this Emergency Declaration, MassDEP may assess a civil administrative penalty as provided in M.G.L. c.21A, § 16 and M.G.L. c.21G, § 14. MassDEP may also seek civil judicial penalties as provided in M.G.L. c.21G, § 14. Each day of continued violation shall constitute a separate offense. In addition, MassDEP may ask the Attorney General to bring an action in the superior court to compel compliance with this Declaration.

### **Appeal Rights**

21. Respondent is hereby notified that it has a right to an adjudicatory hearing on this Order. Pursuant to M.G.L. c. 21G, § 12 and 310 CMR 36.40(1) and effective twenty-two days after the Order is received by the Respondent, Respondent shall be deemed to have waived its right to an adjudicatory hearing on this order unless Respondent files with MassDEP (i.e. MassDEP receives), a written notice of claim for an adjudicatory appeal that clearly and concisely states every point of fact and law Respondent intends to raise as grounds for the appeal, the relief sought, and any additional information required by applicable law. The request must be mailed to:

Commonwealth of Massachusetts  
MassDEP-Office of Appeals and Dispute Resolution  
One Winter Street  
Boston, MA 02211

And a copy sent to:

Heidi M. Zisch, Counsel  
MassDEP-Office of General Counsel  
Northeast Regional Office  
205B Lowell Street  
Wilmington, MA 01887

The appeal must be accompanied by a valid check made payable to Commonwealth of Massachusetts in the amount of \$100.00 for the required filing fee. The filing fee must be mailed to:

Commonwealth of Massachusetts  
MassDEP-Office of Appeals and Dispute Resolution  
P.O. Box 4062  
Boston, MA 02211

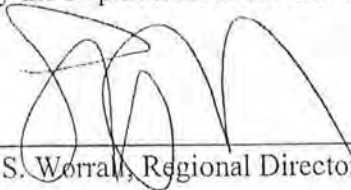
The filing fee is not required if the appellant is a city, town, county, or district of the Commonwealth of Massachusetts or a municipal housing authority.

Failure to pay the filing fee as required is grounds for dismissal of the request for hearing.

Waiver of filing fee: Upon a showing of undue financial hardship, MassDEP may waive the adjudicatory hearing filing fee. A person who believes that payment of the \$100.00 filing fee would be an undue financial hardship must file, together with the request for adjudicatory hearing as provided above, an affidavit setting forth the facts the appellant believes constitute the undue financial hardship.

Issued by the Department of Environmental Protection this tenth day of December 2015.

By

  
Eric S. Worrall, Regional Director

### STAFF SUMMARY


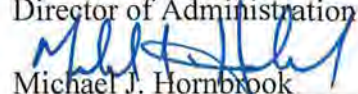
**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** December 16, 2015  
**SUBJECT:** Technical Assistance Consulting Services for the  
John J. Carroll Water Treatment Plant  
Stantec Consulting Services, Inc.  
Contract 7407



COMMITTEE: Water Policy & Oversight

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

     INFORMATION  
  X   VOTE

  
Michele S. Gillen  
Director of Administration  
  
Michael J. Hornbrook  
Chief Operating Officer

### RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to select Stantec Consulting Services, Inc. to provide Technical Assistance Consulting Services for the John J. Carroll Water Treatment Plant, and to authorize the Executive Director, on behalf of the Authority, to execute Contract 7407 with Stantec Consulting Services, Inc. for an amount not to exceed \$750,000, with a contract term of two years from the Notice to Proceed.

### DISCUSSION:

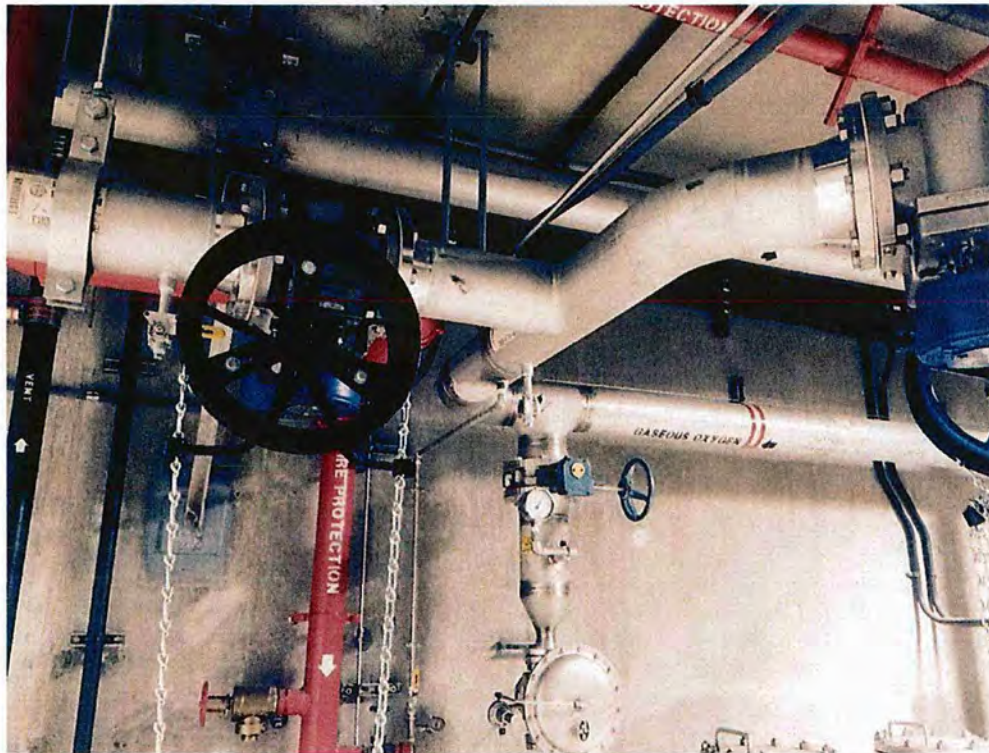
The purpose of this technical assistance contract is to make available, on a continuing, as-needed basis, the services of a qualified, professional engineering firm to assist MWRA staff with generally small, unanticipated engineering study and/or design initiatives, primarily for the John J. Carroll Water Treatment Plant.

Contract 7407 will provide short-duration, rapid response services in multiple engineering disciplines including, mechanical, architecture, corrosion control, civil, structural, geotechnical, environmental, sanitary, process, fire protection, instrumentation and controls, chemical, and security. Under previous technical assistance contracts at the plant, MWRA has issued task orders for a wide variety of work including design of:

- modifications to the ammonia and sodium hypochlorite chemical feed system;
- security gate improvements;
- valves to allow a more rapid reactivation of the Wachusett Aqueduct;
- a second oxygen pipe to supply the ozone generators;
- a closed-loop cooling system for the ozone generators; and
- replacement of a flow control valve for the Weston Aqueduct.



Carroll Treatment Plant ammonia system piping improvements



Second oxygen feed pipe to the ozone generators for redundancy



Heat exchangers for ozone generators closed-loop cooling system

Similar to the existing contracts for the Deer Island Treatment Plant and for broader, agency-wide use, this contract will ensure that adequate resources are available to quickly and comprehensively respond to MWRA's needs, particularly when emergency or unanticipated situations arise.

### **Procurement Process**

Staff utilized a one-step/two-envelope Request for Qualifications/Proposals, seeking a consultant to be selected on a most-qualified, low-bid basis, with price envelopes submitted separately from the technical proposals. Technical proposals were reviewed first to identify the firms most qualified to provide the services based on specified criteria. Thereafter, the envelopes containing a sample costing exercise from the most qualified firms were opened. The most qualified proposer submitting the lowest cost exercise proposal is recommended for award.

Three statements of Qualifications/Proposals were received on November 16, 2015 from Arcadis U.S., Inc, CDM Smith Inc. and Stantec Consulting Services, Inc.

The Selection Committee evaluated the three firms' qualifications using the following criteria: (1) Capacity/Qualifications/Key Personnel (40 points); (2) Past Performance on Authority Projects (25 points); (3) Similar Experience/Past Performance on Similar Non-Authority Projects (25 points); and (4) Technical Approach/Organization and Management Approach (10 points). The Selection Committee developed qualifications scores as shown on the following page.

<u>Consulting Firm</u>	<u>Qualifications Points</u>
CDM Smith Inc.	435
Stantec Consulting Services, Inc.	432
Arcadis U.S., Inc	343

After reviewing the qualifications of all three firms, the Selection Committee determined that there was a significant enough differential between the points of the two highest scoring firms and the third firm to consider the two highest scoring firms as most qualified. The qualifications point totals for CDM Smith Inc. and Stantec Consulting Services, Inc. (Stantec) were very close to each other, whereas, Arcadis U.S., Inc. received significantly fewer points. For this reason, the two highest ranked firms of CDM Smith Inc. and Stantec were found to be the most-qualified.

Although Arcadis is a solid firm and has performed successfully on other MWRA projects, the lower qualifications points total it received was a reflection of the Selection Committee's concern regarding Arcadis' decision to assign a Project Manager for this contract that had minimal project management experience and significantly less experience compared to the Project Managers proposed by the other two firms. The Selection Committee's point assignment also reflected concern for how Arcadis' staff would be assigned to support the contract – local office versus an out-of-state office. While it is not unusual for design firms to assign project teams for large MWRA projects that are based in offices outside the local area, the Carroll Treatment Plant Technical Assistance contracts frequently require immediate response capability or the presence of engineers on site for multiple days. The Selection Committee noted that Arcadis proposed a more complex Organization and Management Approach that included a limited number of local supporting staff for this contract, positioning the firm to be less readily available to respond rapidly and cost effectively to the plant's more immediate needs.

The procurement process for these technical assistance contracts is different from the process of selecting a consultant for a specific study or design. When the scope of work is clearly known and defined, a consultant can estimate the level of effort required to produce the desired end product. With these technical assistance contracts, the amount of labor hours required is unknown until the need for services arises. Task order work varies depending on the size of the task and the specific engineering disciplines required to complete the work.

Since the exact total number of labor hours is unknown, MWRA staff developed a sample cost exercise designed to compare the costs of the most qualified firms. MWRA provided an approximate total number of hours that would be expended on a \$750,000 contract, based on the average annual distribution of hours from prior technical assistance contracts, and required the proposers to provide labor rates and multipliers incorporating indirect costs and a profit percentage. The sample cost exercises of the most qualified firms are presented below.

<u>Consulting Firm</u>	<u>Sample Cost Exercise Estimates</u>
Stantec Consulting Services, Inc.	\$721,916.21
CDM Smith Inc.	\$899,008.00

These sample cost exercise estimates are used for comparison purposes only in order to identify the firm with the lowest costs. The intent is to award this contract for \$750,000. MWRA will incur costs under this contract only for task order work actually performed.

Stantec Consulting Services, Inc. had the lowest sample cost exercise. Fay, Spofford & Thorndike (FS&T), which was recently acquired by Stantec, was the consultant for the Carroll Treatment Plant's previous Technical Assistance contract, Contract 7406, which recently expired on November 14, 2015. Staff report that FS&T's performance on this contract was excellent. FS&T has also performed well on two other previous Carroll Treatment Plant Technical Assistance contracts. Most of the key personnel included in Stantec's proposal are former FS&T employees.

Based on the qualifications of the firm and the sample cost exercise submitted, the Selection Committee recommends the award of Contract 7407 to Stantec Consulting Services, Inc. for a not-to-exceed amount of \$750,000 and a contract term of two years from the Notice to Proceed.


**BUDGET/FISCAL IMPACT:**

The FY16 Capital Improvement Program contains \$750,000 for Contract 7407.

**MBE/WBE PARTICIPATION:**

No minimum participation requirements were established for this project. However, Stantec's proposal identified its intent to use the MBE firm of Bryant Associates for field surveying if these services are required.



### STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** December 16, 2015  
**SUBJECT:** Quabbin Power and Security Improvements  
Ewing Electrical Company, Inc.  
Contract 7338

COMMITTEE: Water Policy & Oversight

INFORMATION  
 VOTE

John P. Vetere, Deputy Chief Operating Officer  
A. Navanandan, P.E., Chief Engineer  
Carmine De Maria, Project Manager  
Preparer/Title

  
Michele S. Gillen  
Director of Administration  
  
Michael J. Hornbrook  
Chief Operating Officer

### RECOMMENDATION:

To approve the award of Contract 7338, Quabbin Power and Security Improvements, to the lowest responsible and eligible bidder, Ewing Electrical Company, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$3,199,000, for a contract term of 424 calendar days from the Notice to Proceed.

### DISCUSSION:

Protecting critical water and wastewater facilities is one of MWRA's highest priorities, requiring constant monitoring, review, and updating when required due to technological advances and use changes at facilities. MWRA staff have made significant improvements in securing MWRA's facilities through the installation of fences, guard rails, impact-resistant gates and bollards, closed-circuit television cameras, intrusion alarms, motion detection sensors, card access control systems and readers, public address intercom systems, and the associated software, recorders, and servers.

MWRA's Task Force for Security and Emergency Preparedness, which is comprised of a cross-divisional combination of MWRA staff, including the Executive Director and Chief Operating Officer, meets monthly to ensure that all matters related to security at MWRA facilities are comprehensively reviewed, and, when necessary, recommendations for additional security measures result. The Task Force has recommended increased security at some of MWRA's key western locations, listed on the following page.



- Winsor Dam, Winsor Power Station, Quabbin Administration Building Chicopee Valley Aqueduct Intake Building;
- Quabbin Boat Cove, Quabbin Lookout Tower, William A. Brutsch Water Treatment Facility;
- Shaft 12 Quabbin Intake; and
- Nash Hill Covered Storage Gate House.

While certain security improvements have already been made at most of these facilities, such as added gates and barriers on doorway entrances and windows, and limited closed-circuit television cameras, staff recommend the addition of 19 security cameras, infrared illuminators, card readers and access control, intrusion alarms on perimeter doors, motion detectors, as well as power and communication upgrades supporting these improvements.

The scope of work under this project includes upgrading 9,000 linear feet of an existing overhead power line from Winsor Power Station to the Quabbin Lookout Tower, which powers existing radio communication equipment at the Quabbin Lookout Tower. The radios transmit operational data for MWRA, and communication for the Town of Ware, the Town of Belchertown, the Massachusetts State Police, the Department of Conservation and Recreation (DCR), and the Massachusetts Emergency Management Agency (MEMA). This electrical upgrade received a reimbursement grant from FEMA under the Hazard Mitigation Grant Program (FEMA-4051-DR-MA Quabbin Tower Power Line Upgrade) in the amount of \$452,097 for engineering and construction work.

The project also includes construction of 14,300 linear feet of new overhead power and communication lines that will serve the Boat Cove area of the Quabbin Reservoir and the Shaft 12 structure. These power and communications improvements will support new security, new cameras, and lighting equipment at these locations. Tree clearing for the new power and communications lines will be performed by DCR and has been integrated into DCR's established Plan of Operations for Timber Sales and will meet all standards used for operations on drinking water watersheds.

The information from the new closed-circuit television cameras and intrusion alarms will be transmitted to the DCR Quabbin Administration Building, the State Police Barracks at Quabbin, and to MWRA's Security office located in Chelsea. Cameras and associated equipment will be either mounted directly to the buildings or located on poles near existing structures.

Verizon communications service is needed for the security devices at each of the facilities to communicate back to the Security Head End located in Chelsea. The existing Verizon infrastructure does not currently reach into all MWRA facilities. Therefore, the service needs to be extended, requiring a separate work order between MWRA and Verizon at an estimated cost of \$380,000 (not included under this contract). The facilities requiring the Verizon extensions are the William A. Brutsch Water Treatment Plant in Ware, the Shaft 12 Service Building and Intake Building in Hardwick, the Winsor Power Station in Belchertown, DCR's Administration Building in Belchertown, and the Nash Hill Covered Storage Gate House in Ludlow.

## Procurement Process

Contract 7338 was advertised and bid utilizing MWRA's e-procurement system (Event #2193) in accordance with Massachusetts General Laws, Chapter 149. Bids were received on December 3, 2015 from one contractor as follows:

<u>Bidder</u>	<u>Bid Amount</u>
Ewing Electrical Company, Inc.	\$3,199,000
<i>Engineer's Estimate</i>	<i>\$3,400,000</i>

Staff contacted other firms on the plan holders list to determine why more bids were not received. Four firms indicated that they chose not to bid either because of the remote location of the project and/or due to their current workload.

Ewing Electrical Company, Inc.'s bid is 5.9 % below the Engineer's Estimate. Staff reviewed the scope of work with Ewing Electrical Company, Inc. and determined that the firm understood all of the various elements and types of work required in this contract.

References were checked, including previous MWRA contracts, and found to be favorable. Ewing Electrical Company, Inc. has demonstrated its ability to successfully complete comparable MWRA projects, including work on Contract 7230 (Oakdale Power Facility Phase 1 Upgrade Project) and Contract 6760W (Security Improvements at Various Facilities).

Staff have concluded that Ewing Electrical Company, Inc. possesses the skill, ability, and integrity necessary to perform the work under this contract and is qualified to do so. Staff have further determined that the bid price is reasonable, complete, and includes payment of prevailing wages, as required. Therefore, staff recommend that Contract 7338 be awarded Ewing Electrical Company, Inc. as the lowest responsible and eligible bidder.

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

The FY16 CIP includes \$3,400,000 for Contract 7338.

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

The MBE and WBE participation requirements for this contract were established at 7.24% and 3.6%, respectively. The Affirmative Action & Compliance Unit has reviewed the bids and has determined that Ewing's bid is responsive to these requirements.



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

to be held on

Wednesday, December 16, 2015

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

Time: Immediately following Water Comm.

### **AGENDA**

#### **A. Approvals**

1. Appointment of Program Manager, Monitoring & Control
2. Appointment of Deputy Chief Engineer

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the  
Personnel and Compensation Committee

November 18, 2015

A meeting of the Personnel and Compensation Committee was held on November 18, 2015 at the Authority headquarters in Charlestown. Chairman Cotter presided. Present from the Board were Messrs. Blackmon, Carroll, Flanagan, Foti, Pappastergion, Pena, Vitale, and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Karen Gay-Valente, Mike Hornbrook, and Bonnie Hale. The meeting was called to order at 12:25 p.m.

**Approvals**

\*PCR Amendments – November 2015

Staff summarized the proposed amendments, and there was general discussion. The Committee recommended approval of the amendments to the Position Control Register (ref. agenda item A.1).

There was general discussion of the following recommended appointments, and the Committee recommended approval of each as part of an omnibus motion:

\*Appointment of Senior Program Manager of Process Control & Project Support

Appointment of Ms. Lisa Bina (ref. agenda item A.2)

\*Appointment of Program Manager, Electrical, Engineering and Construction

Appointment of Mr. Jorge P. Silva, P.E. (ref. agenda item A.3)

\*Appointment of Program Manager, Electrical, Deer Island

Appointment of Mr. Darius Boyce (ref. agenda item A.4)

\*Appointment of Senior Program Manager, Engineering, Deer Island

Appointment of Mr. Brian F. Driscoll, P.E. (ref. agenda item A.5)


\*Appointment of Director of Procurement

Appointment of Ms. Carolyn Francisco Murphy (ref. agenda item A.6).

The meeting adjourned at 12:30 p.m.

\* Approved as recommended at November 18, 2015 Board of Directors meeting.

## STAFF SUMMARY

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** December 16, 2015  
**SUBJECT:** Appointment of Program Manager, Monitoring & Control  
Operations Division

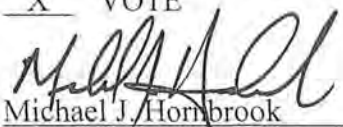
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COMMITTEE: Personnel & Compensation

Karen Gay-Valente, Director, Human Resources  
John P. Vetere, Deputy Chief Operating Officer  
Valerie L. Moran, P.E., Manager, Operations Engr.  
Preparer/Title

     INFORMATION

  X   VOTE

  
Michael J. Hornbrook  
Chief Operating Officer

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### RECOMMENDATION:

To approve the appointment of Mr. John P. Beckley to the position of Program Manager, Monitoring & Control (Unit 9, Grade 29) in the Operations Division, at the recommended annual salary of \$105,413, to be effective on a date to be determined by the Executive Director.

### DISCUSSION:

The position of Program Manager, Monitoring & Control in Operations Engineering in Chelsea became vacant upon the retirement of the previous incumbent. This position reports to the Manager of Operations, Engineering, and is responsible for ensuring that MWRA's existing and future instrumentation and control systems remain current, are in accordance with the latest industry standards, and meet the needs of MWRA's Operations and Maintenance Units.

The position provides technical assistance, engineering support, and design in the planning and implementation of MWRA systems that require instrumentation and control. The position is responsible for reviewing all SCADA, instrumentation, and monitoring and control aspects of projects and will also participate in and review the performance of acceptance testing for monitoring and control equipment installed by contractors.

### Selection Process

This position was posted internally and externally. A total of seven candidates (four internal and three external) were determined to meet the qualifications of the job description. All applicants were interviewed except two internal candidates who withdrew their applications from consideration. Senior staff from Operations and a representative from MWRA's Affirmative Action and Compliance Unit interviewed all five candidates and determined that Mr. John Beckley was the most qualified candidate to fill the position based upon his combination of experience, abilities, knowledge, and education.

Mr. Beckley comes to MWRA with more than 20 years experience working in the water and wastewater industry. He started his career as a Research Scientist for Thames Water in England conducting research projects for a 1.4-million-gallons-per-day Advance Water Treatment pilot plant to optimize treatment processes, including ozone recycling trials, rapid gravity backwashing regimes, and hydraulic flow patterns.

In 1998, Mr. Beckley moved to the United States working for the Ashbrook Corporation, overseeing the construction, commissioning, and testing of a novel residuals dewatering technology that removes water from sludge. He then became a Senior Product Engineer for FB Leopold Company where he was responsible for the design and construction of automated packaged water treatment systems, fully equipped with SCADA systems. He managed the start-up and commissioning of five full-scale water treatment plants throughout the United States, including optimizing system operations with the local SCADA groups. This led to a job at Fay Spofford and Thorndike (FS&T), now Stantec, where he currently is a Senior Engineer of Process and Control Systems.

At FS&T Mr. Beckley is the lead design engineer for controls and instrumentation projects for both water and waste water systems. He is responsible for developing process designs, sequence of operations, creating control system specifications, and following projects from design, construction through start-up. He has extensive knowledge of MWRA's SCADA standards and design requirements and has worked on several major MWRA projects such as the Alewife Brook Pump Station system upgrades and the design of the instrumentation and control systems for the Wachusett Aqueduct Pump Station project.

Mr. Beckley's experience working in the study, design, construction, and start-up of facilities similar to those at MWRA, as well as his instrumentation and control work on several recent MWRA projects, positioned him as an exceptional candidate for this position. His experience and skills, which are directly relevant to the responsibilities of the position, will make him a valued asset for Operations and the future of MWRA.

Mr. Beckley earned a Bachelor of Science Degree in Mechanical Engineering from the University of London – Queen Mary College. He is a Registered Professional Engineer.

**BUDGET/FISCAL IMPACT:**

There are sufficient funds for this position in the FY16 Current Expense Budget.

**ATTACHMENTS:**

Resume of John P. Beckley  
Position Description  
Organizational Chart

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# John P. Beckley

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## EDUCATION

**Bachelor of Science (Mechanical Engineering)**

University of London - Queen Mary College, London, Great Britain

June 1989

**Professional Engineer - PA**

PE073806

7/28/2006

## PROFILE

- Experienced, self-motivated, controls, instrumentation and process engineer with 20 + years experience in the water and waste water industry.
- Extensive understanding of MWRA SCADA standards and typical system design requirements. Proven track record with respect to Authority controls and instrumentation design projects.
- Detailed knowledge of Allen Bradley programmable logic controller product line (legacy and current), associated components, and network architectures.
- Familiarity with control systems installed at many MWRA facilities including Deer Island, JJC WTP, Alewife Pumps Station, and Brutch WTP.
- Strong communication and presentation skills with the ability to relate to staff with a range of cultural or technical backgrounds.
- Proven problem solving and analytical ability with the depth of knowledge to provide innovative solutions in the field or office environment.

## WORK EXPERIENCE

**Senior Engineer - Process and Control Systems (2006 - Current)**

**Fay, Spofford and Thorndike**

Engineering Tasks

- Lead design engineer for controls and instrumentation projects for both water and waste water systems.
- Developed process designs, sequence of operations, P&ID's (following ISA standards), and control system specifications.
- Coordinated control and instrumentation requirements between different engineering disciplines such as HVAC, Electrical, and Mechanical to ensure consistency in the contract documents and complete design.
- Developed controls system I/O list, PLC rack schedules, instrumentation panel layout drawings and cost estimates.
- Communication and networking design including copper and fiber optic Ethernet media, spread spectrum radio, licensed VHF radio, broadband internet connection, cellular modem and dedicated leased data service line.
- SCADA system design including computer systems, client/server layout, system architecture, equipment redundancy, alarming, data logging and reporting, tag structures, screen format, and system security.
- Reviewed submittals and shop drawings from contractors and process control system suppliers for conformance with contract documents.
- Responded to request for information from contractors or systems integrators and provided resolution of field issues during construction.
- Conducted factory acceptance testing, startup services and final field inspection of controls and instrumentation systems.
- Evaluated alternative process monitoring instrumentation including flow transmitters, level sensors, temperature transmitters, chlorine, pH, turbidity and THM analyzers.
- Development of scope and engineering budget for systems integration and programming services.
- Project management of SCADA and PLC programming services.
- Performed facility assessment and evaluation of existing control systems equipment. Produced facilities assessment reports and scope of services and engineering budget to correct deficits.
- Developed startup sequencing to allow refurbishment of existing controls equipment and transition to new devices while maintaining operation of critical infrastructure.
- Evaluation of upgrade path for existing controls and instrumentation system.
- Consultation with vendors and equipment suppliers to maintain knowledge of product developments and track enhancement of equipment features and functions.
- Communicated with suppliers to ensure equipment was incorporated into system designs per recommendation

## Project Descriptions

**Somerset WTP** – Project management of an upgrade of a legacy Modicon PLC to Allen Bradley. Conversion of existing PLC code to maintain system functionality. Transition performed while system was in service with no loss of supply to local community.

**Gloucester WTP** – Designed of a new SCADA system for two Water Treatment Facilities to control replacement chemical feed systems and new sodium hypochlorite dosing equipment. Configured a licensed radio communication network to link six remote facilities.

**Deer Island** – Design of control system for prototype DSL pumping system. Upgrade of ABB PLC for operation of tip tube system. Design of new control system to support the installation of VFD's for the operation of the surface aerators.

**JJC WTP** – Design of instrumentation and control system for operation of the Wachusett Aqueduct Pump Station.

**Alewife Brook Pumps Station** – Design for a conversion of a legacy Allen Bradley SLC5/05 to ControlLogix PLC.

**Dartmouth WWTP** – Design of a PLC control systems for four remote waste water pumping facilities and addition controls for the WWTP influent and effluent pumping.

**Cottage Farm Pump Station** – Design of instrumentation and data logging system to support monitoring of diesel engine exhaust gas catalytic converter. Modified existing control system to accommodate additional signals.

**Senior Product Engineer – Clarification (1999 –2006)**

**F.B. Leopold Company**, Zelienople, Pennsylvania

- Responsible for the designed and constructed of an automated packaged water treatment system contained within a 40 ft mobile trailer. The system was equipped with a full SCADA system monitoring online instrumentation, tracking multiple process variables. Project budget was \$300,000.
- Designed new dissolved air flotation plants and provided retrofit design solutions.
- Managed the startup and commissioning of five full scale water treatment plants throughout the United States. Worked with the controls and instrumentation department to optimize system operation.
- Reviewed plant specifications, process guarantees and equipment selection prior to plant design.
- Oversaw national pilot plant water treatment trials to ensure optimum performance, collection of required design data and client objectives were fulfilled.
- Implemented Computational Fluid Dynamic Modeling within the company and developed the technique to analyze and simulate filter underdrain products.
- Key team member that developed a patented clarification technology and brought the idea from concept to demonstration pilot rig.
- Directly managed two technicians to build hydraulic test models and conduct research trials.
- Managed research project budgets and reported directly to the Vice President of Development Engineering.

**Research Scientist- (1998 – 1999 Secondment from Thames Water)**

**Ashbrook Corporation**, Houston, Texas

- Conducted the construction, commissioning and testing of a novel residuals dewatering technology.
- Organized field trials of the unit at two waste water treatment facilities and conducted successful studies achieving high dry solids results
- Produced a paper and presented the results at the International Paper Conference in Tampere, Finland.

**Research Scientist (1990 – 1998)**

**Thames Water**, Reading, UK

- Assistant manager of the 1.4 MGD Advance Water Treatment pilot plant conducting research projects to facilitate optimization of full scale assets.
- State of the art research projects including ozone recycling trials, high rate slow-sand filtration, rapid gravity backwashing regimes, counter current dissolved air flotation and hydraulic flow patterns through clarification basins.
- Generated detail reports of all research studies.

**Courses**

Rockwell Security and Networking Symposium.  
RS Factory Talk View SCADA Programming Course

**Publications**

Operational Issues with Impulse Drying, Water Science and Technology, Vol. 40 No 11-12  
Co-author, A multiphase CFD model of DAF process, Water Science and Technology, Vol.43 No 08

**Committee**

New England Water Works Filtration Committee

**Computer Skills**

Factory Talk View Studio Enterprise, Rockwell Automation Studio 5000, RSLogix 500, Hach OPS, Autodesk AutoCAD



## MWRA POSITION DESCRIPTION

**POSITION:** Program Manager, Monitoring & Control

**PCR#:**

**DIVISION:** Operations

**DEPARTMENT:** Waterworks/Operations Engineering

### **BASIC PURPOSE:**

Provides technical assistance, engineering support and design in the planning and implementation of systems using instrumentation and control within the MWRA.

### **SUPERVISION RECEIVED:**

Works under the general supervision of the Manager of Operations Engineering.

### **SUPERVISION EXERCISED:**

Supervises staff or consultants as needed.

### **ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Supports, oversees, and performs planning, design, and implementation of MWRA Operations Department's instrumentation and control system projects and enhancements.
- Provides engineering support to MWRA Operations including collaboration with process control and SCADA engineers in the creation of written control strategies, SCADA display system design, software configuration and PLC programming.
- Manages and procures consultant work, including writing engineering scopes and overseeing project implementation, in the engineering of monitoring and control systems, development of I/O wiring diagrams, programming of PLCs and SCADA screens, and performance of acceptance testing start-up, and records management.
- Leads the SCADA team in the creation and maintenance of the MWRA SCADA System Standards Manual.
- Performs design reviews of monitoring and control, SCADA and instrumentation aspects of all MWRA projects associated with Water and Wastewater Distribution, collection and Treatment Systems, Odor Control Systems, HVAC Systems located in MWRA facilities and Safety Control Systems from preliminary design to construction.

- Reviews all SCADA, instrumentation, and monitoring and control aspects of projects, including submittal review during construction phase. Coordinates/resolves design and construction issues) and participates in start-up and testing operations.
- Provides emergency response support as necessary.

**SECONDARY DUTIES:**

- Performs related duties as required.

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) Knowledge of instrumentation and control systems as normally attained through a bachelor's degree in mechanical, electrical, or chemical engineering or related field; and
- (B) Seven (7) to nine (9) years experience in hydraulics, instrumentation and control systems design, telemetry, data acquisition and computer systems; or
- (C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Demonstrated knowledge of instrumentation and control system design, Programmable Logic Controllers, SCADA display systems, UPS systems and control system communication networks.
- (B) Working knowledge of communication technology including microwave, radio and fiber optics.
- (C) Demonstrated practical understanding of water and wastewater process design and hydraulics including valve and pump control systems, odor control systems and chemical feed systems.
- (D) Excellent interpersonal, oral and written communication skills required.
- (E) Proficiency with personal computers, handheld computer devices, and knowledge of Word, Excel, databases and PowerPoint required. AutoCAD preferred.
- (F) Demonstrated abilities to work as part of a project team, to develop and maintain productive working relationships with external parties, and to function independently with minimal supervision.

### **SPECIAL REQUIREMENTS:**

A Massachusetts Registered Professional Engineering Certification or eligibility through reciprocity, preferred.

A 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 climb or balance; stoop, kneel, crouch, or crawl.

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

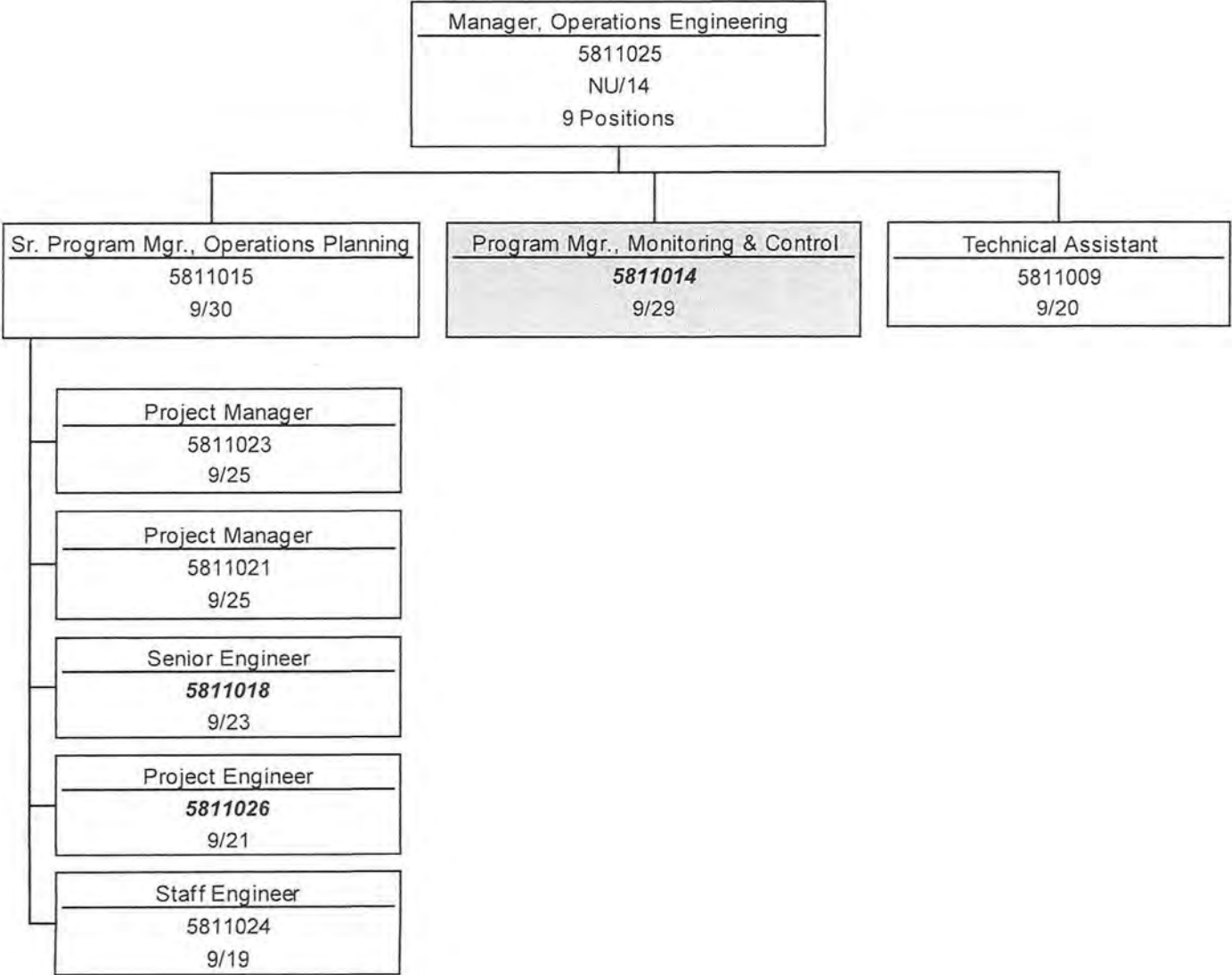
### **WORK ENVIRONMENT:**

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 electric shock. The noise level in the work environment is moderately quiet in the office settings.

# Operations Engineering

December 2015



## STAFF SUMMARY


**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** December 16, 2015  
**SUBJECT:** Appointment of Deputy Chief Engineer



COMMITTEE: Personnel & Compensation

INFORMATION  
 VOTE

Karen Gay-Valente, Director, Human Resources  
A. Navanandan, P.E, Chief Engineer  
John P. Vetere, Deputy Chief Operating Officer  
Preparer/Title

  
Michael J. Hornbrook  
Chief Operating Officer

### RECOMMENDATION:

To approve the appointment of Mr. John P. Colbert to the position of Deputy Chief Engineer (Non-Union, Grade 15), at an annual salary of \$142,212.00, commencing on a date to be determined by the Executive Director.

### DISCUSSION:

The Deputy Chief Engineer position was recently established at the October 2015 Board of Directors' meeting. The position reports directly to the Chief Engineer and will provide supervision and management of the operation and administration of the department. The Deputy Chief Engineer will also develop, direct, and administer MWRA's plans and programs that address the timely and cost effective delivery of design and construction projects for both water and wastewater. The purpose of these policies and procedures is to improve the Authority's capital delivery performance in regards to complying with approved capital improvement program schedules and budgets. The Deputy Chief Engineer will also manage the execution of capital improvement program and projects, as well as the quality assurance and quality control process for design and construction projects.

The Assistant Directors of Water and Wastewater Engineering will report to this position. The Director of Construction will have matrix reporting to both the Chief Engineer and the Deputy Chief Engineer. The Deputy Chief Engineer will act as the Authority's Chief Engineer in the Chief Engineer's absence.

### Selection Process

This position was posted internally. A total of three candidates were determined to meet the qualifications for the position and all three were interviewed by MWRA senior managers (Chief Operating Officer, Deputy Chief Operating Officer, Operations Engineering & Construction,

Deputy Chief Operating Officer Programs, Policy & Planning, Chief Engineer, and the Special Assistant for Affirmative Action).

After interviewing all three candidates, it was determined that Mr. John Colbert was the most qualified candidate for this position based on his combination of experience, abilities, knowledge, and education.

Mr. Colbert has more than 32 years of professional experience working in the field of engineering. Prior to joining MWRA in 1998, Mr. Colbert performed design and construction work on various heavy utility and power plant projects. He began his career at MWRA as a Senior Staff Engineer, Mechanical, and has progressed steadily since that time. He has been promoted to positions of increasing responsibilities, including Deer Island Facility Engineer, MWRA Asset Manager, and Manager of Maintenance for Metropolitan East. Mr. Colbert is currently the Deputy Director, Deer Island Wastewater Treatment Plant where he is responsible for all operations functions, as well as Process Control and the Thermal/Power Plant.

Mr. Colbert has an outstanding history at MWRA of successfully managing large and complex projects on time and on budget, and developing and implementing countless improvements to increase efficiencies and productivity.

Mr. Colbert possesses a Master of Science degree in Applied Mechanics from Northeastern University and a Bachelor of Science degree in Mechanical Engineering from Tufts University. He is a Registered Professional Engineer (Rhode Island); holds a Grade 6 Wastewater Operators license and is a Certified Maintenance Reliability Professional.

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

There are sufficient funds for this position in the FY16 Current Expense Budget. The recommended salary is the same as his current salary as Deputy Director, Deer Island Treatment Plant, as both are Non-Union, Grade 15 positions.

#### **ATTACHMENTS:**

Resume of John P. Colbert  
Position Description  
Organization Chart

## JOHN P. COLBERT

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### SUMMARY OF QUALIFICATIONS

- Proven engineering and maintenance manager that has implemented improvements to increase efficiencies and equipment availability.
- Proven proficiency in accomplishing complex projects from initial conception through construction, startup, and operation.
- Wide experience in working with diverse discipline groups and all levels of management.
- Strong leadership and organization skills.
- Strong technical background.

### ACCOMPLISHMENTS

- Over 33 years proven engineering, maintenance, and operations experience.
  - Engineer during construction, startup and operation of a large nuclear power facility
  - Engineering and maintenance of water and wastewater public utility.
  - Successfully provided project management and technical supervision for design changes.
  - Integral member of the startup team of a commercial nuclear power plant.
- 
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### PROFESSIONAL EXPERIENCE

#### **June 1998 - present - Massachusetts Water Resource Authority**

Deer Island Deputy Director, March 2014 to present

- Supervisor of 39 Operations staff and 17 Process Control staff.
- Supervisor of 13 On Site Thermal Plant Operations staff
- Previously supervisor of 132 Maintenance and Planning and Scheduling staff
- Currently responsible for the wastewater operation, process control, and thermal power plant operation of the Deer Island Treatment Plant.

Manager, Maintenance Metro East, July 2008 to March 2014

- Supervisor of 115 trade staff including planners, electricians, mechanics, HVAC technicians, painters, carpenters, masons, building and grounds, and metering instrument technicians.
- Responsible for the maintenance of all water and wastewater facilities including headworks, pumping stations and combined sewer overflow facilities in eastern Massachusetts.
- Responsible for a maintenance budget of approximately \$8 million dollars.

MWRA Asset Manager, February 2001 to July 2008

- Supervisor of the Work Coordination Group and Condition Monitoring Group of 12 staff.
- Implemented an maintenance asset management program at Deer Island including the a expansion of the Condition Monitoring program, Reliability Centered Maintenance analysis for 70 plant systems, Preventive Maintenance optimization, maintenance staff training program, and development of Maintenance metrics.

## **JOHN P. COLBERT**

Deer Island Plant Engineer, July 1999 to February 2001

- Supervisor of Plant Engineering and Construction Coordination and Warranty Group consisting of 8 engineers.
- Oversee as-needed design engineering tasks for \$750,000/year contracts
- Working supervisor responsible for Combustion Turbine Generator recall modifications, sodium hypochlorite tank relining, expansion joint upgrades, and site wide coating project

Senior Staff Engineer, Mechanical, June 1998 to July 1999

- Provided engineering support to the operations and maintenance departments.
- Responsible for resolving engineering design issues at the Deer Island Treatment Plant. Projects included resolution shaft failures of high pressure process water pumps, oil conversion of power plant oil boilers, primary and secondary clarifier expansion joint engineering services contract, piping material investigation for influent clarifier channels, resolution of cycling and cavitation of raw water pumps.

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### **August 1982 to June 1998 - Lead Mechanical Engineer -Stone & Webster Engineering Corporation, Boston, MA**

Minnesota Agri-Power Project, January 1988 to June 1988

- Responsible for the preparation of purchase specifications and preliminary design of several systems (P&ID and system description preparation) for a 75 MW cogeneration plant using the gas produced from alfalfa stems in a gasifier for fuel.

Northeast Utilities Design Engineering Group, March 1992 to January 1998, June 1989-October 1989, March 1983 to June 1987

- Supervisor of Mechanical Modifications Group of 8-20 engineers and designers
- Responsible for supervision, coordination, planning and scheduling of engineering groups in project activities.
- Prepared evaluations, reports, and presentations for senior management on engineering projects.
- Project Engineer for the following large construction projects:
  - Fifth Point Feedwater Heater Tube Bundle Replacement (\$1.1 million)
  - Installation of Feedwater Ultrasonics for Steam Flow Calorimetric (\$1.1 million)
  - Service Water Erosion/Corrosion Piping Replacement (\$ 3.8 million)
  - Nitrogen Blanketing of Condensate Storage Tank (\$ 1.0 million)
- Preparation of design changes to resolve startup problems.
- Calculations to determine system operating temperatures and pressures as input to stress analysis and to verify system performance.



## JOHN P. COLBERT

Computer Department - Engineering Systems, March 1991 to March 1992

- Prepared functional specifications for engineering applications using both an integrated database and CATIA.
- Responsible for initial testing and problem resolution of flow diagram data extraction and report generation program for the Healy Clean Coal Project.

Department of Energy, High Temperature Gas Cooled Reactor (October 1990 to Mar 1992)

- Prepared trade study for condenser alternatives and main steam desuperheater selection.
- Prepared conceptual design of secondary systems including flow diagrams, system descriptions, and equipment sizing calculations.

Yankee Atomic Electric Company, Yankee Rowe Power Plant, June 1989 - December 1989

- Developed component database for use with a computer expert system to evaluate component degradation due to aging.

Tennessee Valley Authority, Watts Bar Nuclear Plants, June 1987 to June 1989

- Developed and implemented a corrective action program for mechanical calculations. Calculations included determination of plant operating temperatures and pressures, component sizing, fluid transient identification, and system flow balance.

Process Engineering Group, August 1982 to March 1983

- Prepared surveys, specification reviews and research for flue gas desulfurization equipment and projects.

### EDUCATION

1982: Tufts University, Bachelor of Science Mechanical Engineering, Cum Laude

1990: Northeastern University, Master of Science Applied Mechanics, 3.5 GPA.

1993: Closed Feedwater Heaters Short Course

1998: Thermoflow Combined Cycle and Cogeneration Gas Turbine Course

### LICENSES AND REGISTRATIONS

1982: Member American Society of Mechanical Engineers

1988: Professional Engineer - Rhode Island #5146

1999: Grade 6 Combined Wastewater Operating License

2003: Member Society of Maintenance and Reliability Professionals

2008: Certified Maintenance Reliability Professional

2014: Grade 7 Combined Wastewater Operating License

### PAPERS/RESEARCH

1995: "Plant Perspective of Steam Flow Calorimetric Implementation,"

J. Colbert and A. Elms, EPRI Secondary Plant Performance Seminar

2002: "Outside Resources Contribute to Culture Change," J. Colbert, J. Fortin, T. Regan, Maintenance Technology Magazine.

2006: AWWA Research Foundation, "Applicability of Reliability Centered Maintenance in the Water Industry," Key Individual Contributor

2009: Consultation with the EPA on Aging Water Infrastructure Research Plan

**MWRA  
POSITION DESCRIPTION**

**POSITION:** Deputy Chief Engineer

**PCR#:**

**DIVISION:** Operations

**DEPARTMENT:** Engineering & Construction

**BASIC PURPOSE:**

Directs the effective operation of the Engineering and Construction Units. Supervises and manages professional staff and operations of the Engineering and Construction Units. Develops, implements and manages, under the direction of senior management, coordination, control and QA/QC policies and procedures for water and sewer projects from planning through construction award. Purpose of these policies and procedures is to ensure design and construction projects comply with approved schedules and budgets.

**SUPERVISION RECEIVED:**

Works under the general supervision of the Chief Engineer in the Engineering & Construction Department. Acts as Authority's Chief Engineer in his/her absence.

**SUPERVISION EXERCISED:**

Directly supervises and manages professional staff in the Engineering and Construction Units.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Manages and directs the daily operation and administration of the department including the oversight and management of all staff, projects, schedules and budgets.
- Directs, develops and administers a Program Management plan and program to ensure timely and cost-effective delivery of all water and wastewater projects. Develop and implement control and tracking methods and procedures to ensure project compliance with approved budgets and schedules and provide timely reporting to senior management of the status of all projects, associated issues impacting potentially schedules and budgets and provide proposals to address budget/schedule non-compliance issues.
- Responsible for all design delivery methods, specification types and schedules for all projects determined to support the system operations of all Water & Wastewater facilities. Ensures all projects are implemented using well developed work plans and well organized resources by selecting consultant services groups that deliver a technically sound, controlled project on budget and on time.

- Manage the efficient & cost effective execution of capital investment programs and projects. Works effectively, cooperatively and in concert with Procurement, Law, Operations and Administrative divisions. Develops clear schedules and costs associated with all projects from both in-house and consultant teams.
- Responsible for design schedules and design budgets ensuring fundamental management controls, techniques, accountability for projects/programs under the control of the Engineering and Construction departments.
- Administers the monitoring, control, schedule & budget for all projects using scope control, performance reports, change requests and cost management/control using integrated time/cost management controls. Manages design documentation and record-keeping.
- Develops and implements a division wide QA/QC plan. Directs quality management during design and construction process. Ensures that Quality Assurance/Quality Control fundamentals and recommended practices and procedures for QA/QC are followed and managed by staff. Plans must ensure a project's fast tracking and the effect on contract document preparation that will result in a technical, effective and constructible projects.
- Performs engineering analysis, prepares engineering documents and project reports.
- Assists in the responsibility for providing safe MWRA operations for MWRA employees, its various constituencies and the general public. Provides input into Authority's information technology, security & emergency preparedness and response plans regarding the MWRA system.
- Works collegially with and ensures coordination with other MWRA divisions and departments and advances the goals, objectives and strategies of the MWRA business plan.
- Assists in implementing the goals and commitments of MWRA in the areas of customer service, diversity and affirmative action, economy and efficiency, health and safety, emergency response and security, and integrity and public trust.
- Assists in maintaining harmonious labor management relations through proper application of collective bargaining agreement provisions and established Human Resources policies.
- Participates in collective bargaining negotiations.

**SECONDARY DUTIES:**

- Performs related duties as required.

## **MINIMUM QUALIFICATIONS:**

### Education and Experience:

- (A) A bachelor's degree in sanitary, civil or mechanical engineering or associated field. Advanced degree or other significant post-graduate educational experience in an engineering discipline is preferred; and
- (B) Eight (8) to ten (10) years demonstrated success in progressively responsible management positions in engineering design, engineering project management and/or construction functions relating to water/wastewater service delivery and major water/wastewater facilities; water system experience is preferred;
- (C) Other combinations of educational and professional credentials and senior operations-management-engineering-construction experience in the water/wastewater sector will also be considered.

### Necessary Knowledge, Skills and Abilities:

- (A) Knowledge of principles and practices of engineering.
- (B) Expert familiarity and management competence in the design and construction of water and wastewater facilities and systems.
- (C) Ability to provide superior program management leadership to engineering managers and staff engaged in engineering programs, projects and activities.
- (D) Excellent interpersonal, oral and written communications skills required.

## **SPECIAL REQUIREMENTS:**

A valid Massachusetts Class D Motor Vehicle Operators License  
Registered Professional Engineer license required and;  
Certified Project Management Professional by the Project Management Institute preferred.

## **TOOLS AND EQUIPMENT USED:**

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

## **PHYSICAL DEMANDS:**

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

While performing the duties of this job, the employee is regularly required to sit, talk or hear. The employee is regularly required to use hands to finger, handle, feel or operate objects, including office equipment, or controls and reaches with hands and arms. The employee frequently is required to stand and walk.

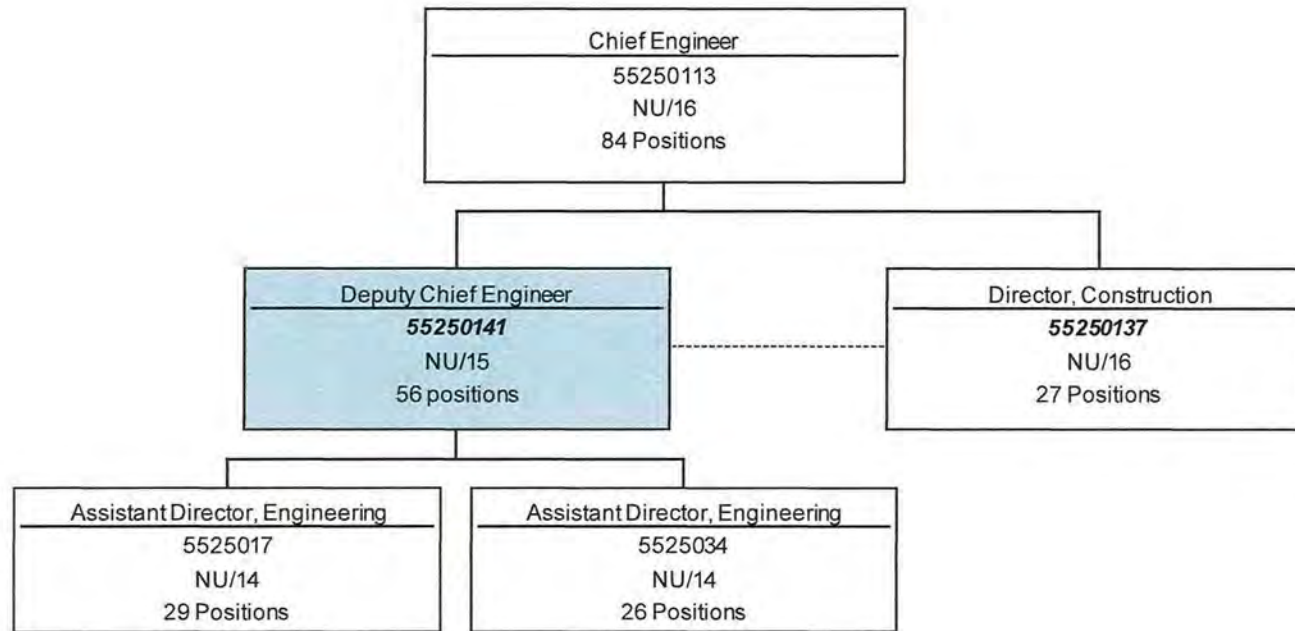
There are no requirements that weight is lifted or force be exerted in the performance of this job. Specific vision abilities required by this job include close vision, and the ability to adjust focus.

**WORK ENVIRONMENT:**

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee regularly works in an office environment.

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

**Engineering & Construction - Summary**  
December 2015





# 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

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

## **BOARD OF DIRECTORS' MEETING**

to be held on

Wednesday, December 16, 2015

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**

- A. Annual Meeting - Election and Appointment of MWRA Officers, Retirement Board Member and Committee Assignments

### **III. REPORT OF THE EXECUTIVE DIRECTOR**

### **IV. BOARD ACTIONS**

#### **A. Approvals**

1. FY17 Proposed Capital Improvement Program (CIP) (ref. AF&A B.1)
2. MOA with the City of Newton for Use of Sudbury Aqueduct Lands (ref. W A.1)
3. Emergency Water Supply Agreement with the Town of Ashland (ref. W A.2)
4. Appointment of Program Manager, Monitoring & Control (ref. P&C A.1)
5. Appointment of Deputy Chief Engineer (ref. P&C A.2)

**B. Contract Awards**

1. Bond Counsel: McCarter & English, LLP, Contract F236 (ref. AF&A C.1)
2. Technical Assistance Consulting Services for John J. Carroll Water Treatment Plant: Stantec Consulting Services, Inc., Contract 7407 (ref. W B.1)
3. Quabbin Power and Security Improvements: Ewing Electrical Company, Inc., Contract 7338 (ref. W B.2)

**C. Contract Amendments/Change Orders**

1. Alewife Brook Pump Station Rehabilitation: Fay, Spofford & Thorndike, LLC, Contract 7034, Amendment 2 (ref. WW A.1)

**V. CORRESPONDENCE TO THE BOARD**

**VI. OTHER BUSINESS**

**VII. EXECUTIVE SESSION**

**A. Real Estate**

1. Acceptance of Fee Interest in Congress Ave. Extension from City of Chelsea

**B. Litigation**

1. Cross-Harbor Cable – MA DPU and Superior Court Proceedings

**C. Security**

1. Update on Security

**VIII. ADJOURNMENT**



MASSACHUSETTS WATER RESOURCES AUTHORITY

**Meeting of the Board of Directors**

**November 18, 2015**

A meeting of the Board of Directors of the Massachusetts Water Resources Authority was held on November 18, 2015 at the Authority headquarters in Charlestown. Chairman Beaton presided. Present from the Board were Messrs. Blackmon, Carroll, Cotter, Flanagan, Foti, Pappastergion, Pena, Vitale and Walsh. Ms. Wolowicz 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 1:15 p.m.

**APPROVAL OF MINUTES**

Upon a motion duly made and seconded, it was

Voted to approve the minutes of the Board of Directors' meeting of October 14, 2015, as presented and filed with the records of the meeting.

**REPORT OF THE EXECUTIVE DIRECTOR**

Mr. Laskey reported on various matters, including: congratulations to Mr. Vitale on BWSC's receipt of the AWWA Platinum Award for utility excellence; the City of Lynn's purchase of MWRA water while its tank was repaired; and notice that the annual meeting of the Board is planned for December 16, 2015.

BOARD ACTIONS

APPROVALS

Approval of the Seventy-First Supplemental Resolution

Upon a motion duly made and seconded, it was

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

PCR Amendments – November 2015

Upon a motion duly made and seconded, it was

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

Appointment of Senior Program Manager of Process Control & Project Support

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Ms. Lisa Bina to the position of Senior Program Manager, Process Control & Project Support (Unit 9, Grade 30) in the Operations Division at an annual salary of \$104,005 to be effective on the date designated by the Executive Director.

Appointment of Program Manager, Electrical, Engineering and Construction

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. Jorge P. Silva, P.E. to the position of Program Manager, Electrical (Unit 9, Grade 29) in the Engineering and Construction Department, at an annual salary of \$103,855, to be effective on the date designated by the Executive Director.

Appointment of Program Manager, Electrical, Deer Island

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. Darius Boyce to the position of Program Manager, Electrical (Unit 9, Grade 29) in the Deer Island Capital Engineering Department, at an annual salary of \$87,681, to be effective on the date designated by the Executive Director.

Appointment of Senior Program Manager, Engineering, Deer Island

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. Brian F. Driscoll, P.E. to the position of Senior Program Manager (Unit 9, Grade 30) in the Engineering Services Department, Deer Island Treatment Plant, at an annual salary of \$117,682, to be effective on the date designated by the Executive Director.

Appointment of Director of Procurement

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Ms. Carolyn Francisco Murphy to the position of Director of Procurement, Administration Division (Non-Union, Grade 16) at an annual salary of \$137,000 to be effective on the date designated by the Executive Director.

CONTRACT AWARDS

Workers' Compensation Third Party Administrator Services: PMA Management Corp. of New England, Contract A601

Upon a motion duly made and seconded, it was

Voted to approve the recommendation of the Consultant Selection Committee to select PMA Management Corp. of New England to provide workers' compensation third party administration services and authorize the Executive Director, on behalf of the Authority, to execute Contract A601 with PMA Management Corp. of New England in a not-to-exceed amount of \$155,850, for a three year term from January 1, 2016 through December 31, 2018.

Digested Sludge Line Pump Replacement, Phase 2: Walsh Construction Company, Contract 6821

Upon a motion duly made and seconded, it was

Voted to approve the award of Contract 6821, Digested Sludge Line Pump Replacement Phase 2 - Deer Island Treatment Plant, to the lowest responsible and eligible bidder, Walsh Construction Company, and to authorize the Executive Director, on behalf of the Authority, to execute and deliver said contract in the bid amount of \$2,591,100, for a term of 548 calendar days from the Notice to Proceed.

Supply and Delivery of Soda Ash to the John J. Carroll Water Treatment Plant: Tata Chemicals Soda Ash Partners, Bid WRA-4103

Upon a motion duly made and seconded, it was

Voted to approve the award of Purchase Order Contract WRA-4103 for the supply and delivery of soda ash to the John J. Carroll Water Treatment Plant, to the lowest eligible and responsible bidder, Tata Chemicals Soda Ash Partners, and authorize the Executive Director on behalf of the Authority, to execute and deliver said purchase order contract in an amount not to exceed \$11,398,680 for a period of three years from January 1, 2016 through December 31, 2018.

Northern Intermediate High Section 110 - Reading and Woburn: Albanese D&S, Inc., Contract 7471

Upon a motion duly made and seconded, it was

Voted to approve the award of Contract 7471, Northern Intermediate High Section 110 - Reading and Woburn to the lowest responsible and eligible bidder, Albanese D&S, Inc. and to authorize the Executive Director, on behalf of the Authority, to execute and deliver said contract in the bid amount of \$9,888,000, for a term of 808 calendar days from the Notice to Proceed.

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

Upon a motion duly made and seconded, it was

Voted to approve the award of Contract 7157, Wachusett Aqueduct Pumping Station, to the lowest responsible and eligible bidder, BHD/BEC JV 2015, A Joint Venture (a joint venture of Barletta Heavy Division and Barletta Engineering Corporation), and to authorize the Executive Director, on behalf of the Authority, to execute and deliver said contract in the bid amount of \$47,011,000.00 for a term of 1,260 calendar days from the Notice to Proceed.

Alewife Brook Pump Station Rehabilitation: Barletta Engineering Corp., Contract 6797

This item was referred to Executive Session.

CONTRACT AMENDMENTS/CHANGE ORDERS

Rehabilitation of Anaerobic Digesters, Primary Clarifiers and New Influent Gates at Clinton Wastewater Treatment Plant: R. H. White Construction Co., Inc., Contract 7277A, Change Order 9 (ref. WW C.1)

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to approve Change Order 9 to increase the amount of Contract 7277A, Rehabilitation of Anaerobic Digesters, Primary Clarifiers and New Influent Gates, Clinton Wastewater Treatment Plant, with R.H. White Construction Co., Inc., for a lump sum amount of \$12,085.95, with no increase in contract term; further, to authorize the Executive Director to approve additional change orders as may be needed to Contract 7277A in amounts not to exceed the aggregate of \$250,000 and 180 days in accordance with the Management Policies and Procedures of the Board of Directors.

EXECUTIVE SESSION

It was moved to enter executive session to discuss litigation, real estate and security.

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Blackmon		
Carroll		
Cotter		
Flanagan		
Foti		
Pappastergion		
Pena		
Vitale		
Walsh		
Beaton		

Voted to enter executive session for the purpose of discussing strategy with respect to litigation and to consider the purchase, exchange, lease or value of real property, in that such discussion in open session may have a detrimental effect on the litigating and negotiating positions of the Authority, and to consider the deployment of security personnel or devices, or strategies with respect to security.

It was stated that the meeting would return to open session for the consideration of additional business.

\* \* \* \*

EXECUTIVE SESSION

\* \* \* \*

The meeting returned to open session at 2:20 p.m.

CONTRACT AWARDS (cont'd.)

Alewife Brook Pump Station Rehabilitation: Barletta Engineering Corp., Contract 6797

Upon a motion duly made and seconded, it was (with Messrs. Blackmon, Foti and Pena opposed)

Voted to replace the Board's prior vote dated September 16, 2015 with the following: to approve the award of Contract 6797, Alewife Brook Pump Station Rehabilitation, to the lowest responsible and eligible bidder, Barletta Engineering Corporation, and to authorize the Executive Director, on behalf of the Authority, to execute and deliver said contract in the bid amount of \$12,560,000 for a term of 853 calendar days from the Notice to Proceed.

The meeting adjourned at 2:25 p.m.

DRAFT

**STAFF SUMMARY**

**TO:** Board of Directors

**FROM:** Matthew A. Beaton, Chairman



**DATE:** December 16, 2015

**SUBJECT:** Annual Meeting: Election and Appointment of MWRA Officers, Retirement Board Member and Committee Assignments

**RECOMMENDATION:**

That the Board of Directors (1) designate this December 16, 2015 meeting as the Annual Meeting which, as provided in the Authority's by-laws, will be deemed a special meeting of the Board for the purpose of election of officers; (2) elect a Vice-Chairman of the Board; and (3) appoint a Secretary of the Board, an MWRA Treasurer, an MWRA member of the Retirement Board, and such Assistant Secretaries and Assistant Treasurers of the Board as the Board deems appropriate. New Committee Chairs will be appointed approximately every two years.

To ratify the following appointments of Board members to standing Committees:

Administration, Finance and Audit	Wastewater Policy and Oversight	Water Policy and Oversight	Personnel and Compensation
Chair: H. Vitale Vice Chair: A. Pappastergion	Chair: P. Flanagan Vice Chair: J. Walsh	Chair: A. Blackmon Vice Chair: B. Pena	Chair: J. Wolowicz Vice Chair: K. Cotter
A. Blackmon J. Carroll K. Cotter J. Foti B. Pena J. Walsh	A. Blackmon J. Carroll J. Foti A. Pappastergion B. Pena H. Vitale	J. Carroll J. Foti A. Pappastergion H. Vitale J. Walsh J. Wolowicz	J. Carroll P. Flanagan J. Foti A. Pappastergion H. Vitale J. Walsh

**DISCUSSION:**

Article IV, Section 1, of the by-laws, which specifies the officers to be elected, provides that:

“The Board of Directors shall annually elect one of its members as Vice-Chairman and shall annually appoint a Secretary and a Treasurer, who need not be members of the Board of Directors.”

The by-laws also provide that:

“Upon the recommendation of the Executive Director, the Board of Directors may also elect one or more Assistant Secretaries and Assistant Treasurers.”



### Retirement Board Appointments

The provisions of G.L. c. 32 § 20 (4 7/8 D) regarding the MWRA Retirement Board, provide that:

“... the secretary of the Authority shall be a member *ex officio*...”

That same section of that statute further provides that a second member of the Retirement Board “... shall be appointed by the board of directors of the authority for a term of 3 years . . . .” Thomas J. Durkin is recommended for appointment as a member of the Retirement Board for a three-year term.

### Nomination of Officers

Currently, the following individuals serve as the MWRA’s officers:

Vice-Chairman:	John J. Carroll
Secretary:	Joseph C. Foti
Treasurer:	Matthew Horan
Assistant Secretaries:	Bonnie Hale Rose Marie Convery
Assistant Treasurer:	Kathy Soni

The Chairman wishes to request that a motion be made to nominate the following as officers, inclusive of appointments of certain MWRA staff as Treasurer, Retirement Board Member, Assistant Secretaries and Assistant Treasurers, as follows:

Vice-Chairman:	John J. Carroll
Secretary:	Joseph C. Foti
Treasurer:	Matthew Horan
Retirement Board Member:	Thomas J. Durkin
Assistant Secretaries:	Bonnie Hale Rose Marie Convery
Assistant Treasurers:	Robert Belkin Kathy Soni

There are no special procedures for election of officers, except as governed by Robert’s Rules of Order. Thus, any Board member may make a nomination to elect an officer, and the nomination will carry upon a majority vote of the quorum.