



MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard
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Boston, MA 02129

Frederick A. Laskey
Executive Director

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ADMINISTRATION, FINANCE & AUDIT COMMITTEE MEETING

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

to be held on

Wednesday, January 13, 2016

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

Time: 11:00 a.m.

AGENDA

A. Information

1. Delegated Authority Report – December 2015
2. FY16 Year-to-Date Financial Update and Summary

B. Contract Awards

1. Selection of Underwriters: Contract F237

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Administration, Finance and Audit Committee

December 16, 2015

A meeting of the Administration, Finance and Audit Committee was held on December 18, 2015 at the Authority headquarters in Charlestown. Vice-Chairman Vitale presided. Present from the Board were Ms. Wolowicz and Messrs. Blackmon, Carroll, Cotter, Foti, Pappastergion, Pena, and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Michele Gillen, John Sabino, Mike Hornbrook, Charlie Fino, Tom Durkin, Kathy Soni, Matt Horan, and Bonnie Hale. The meeting was called to order at 10:20 a.m.

Information

Delegated Authority Report - November 2015

One of the items on the report was the purchase of vehicles, and staff gave a presentation on the composition of the Authority's fleet and the vehicle replacement policy. There was general discussion and question and answer.

FY16 Financial Update and Summary as of November 2015

Staff summarized the November financials. Mr. Vitale noted that Dave Whelan, who had just passed away that morning, was the preparer of this staff summary and he praised his intelligence and continued diligence while he fought leukemia.

Approvals

*FY17 Proposed Capital Improvement Program (CIP)

Staff gave a presentation on the major components of the proposed CIP and there was general discussion and question and answer. The Committee recommended approval of the submittal of the CIP to the Advisory Board for its 60-day review and comment period (ref. agenda item B.1).

Contract Awards

*Bond Counsel: McCarter & English, LLP, Contract F236

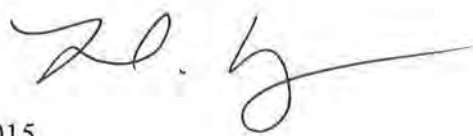
The Committee recommended approval of the contract award (ref. agenda item C.1).

The meeting adjourned at 11:15 a.m.

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

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: January 13, 2016
SUBJECT: Delegated Authority Report – December 2015

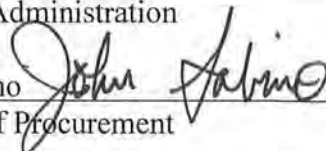


COMMITTEE: Administration, Finance & Audit

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 December 1 – 31, 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 DECEMBER 1 - 31, 2015

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMEND/CO	COMPANY	FINANCIAL IMPACT
C-1.	12/01/15	COLUMBUS PARK HEADWORKS DUCTWORK REPAIR AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR DUCTWORK REPAIRS AT COLUMBUS PARK HEADWORKS FOR A TERM OF 180 CALENDAR DAYS.	OP-282	AWARD	COOLING & HEATING SPECIALISTS, INC.	\$73,000.00
C-2.	12/01/15	OVERHEAD DOOR MAINTENANCE AWARD OF CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR SCHEDULED TESTING AND MAINTENANCE SERVICES, CORRECTIVE AND EMERGENCY REPAIRS OF 99 OVERHEAD DOORS LOCATED IN 23 DIFFERENT BUILDINGS AT THE DEER ISLAND TREATMENT PLANT FOR A TERM OF 731 CALENDAR DAYS.	5545	AWARD	SAFeway OVERHEAD CRANE SERVICES, INC.	\$96,268.00
C-3.	12/01/15	INSTALLATION OF ENERGY EFFICIENT EXPLOSION PROOF LED INTERIOR LIGHTING AT NUT ISLAND HEADWORKS - PHASE 1 AWARD OF AN ENERGY EFFICIENT CONTRACT TO A NGRID PREQUALIFIED VENDOR FOR THE REPLACEMENT OF 66 EXPLOSION PROOF INTERIOR LIGHTS WITH ENERGY EFFICIENT EXPLOSION PROOF LED LIGHTS AT THE NUT ISLAND HEADWORKS FOR A TERM OF 180 CALENDAR DAYS. A REBATE TOTALING \$42,494.76 WILL BE RECEIVED FROM NGRID UPON PROJECT COMPLETION FOR A PAYBACK PERIOD OF 3.3 YEARS.	OP-306	AWARD	HORIZON SOLUTIONS LLC	\$99,330.29
C-4.	12/01/15	INSTALLATION OF ENERGY EFFICIENT EXPLOSION PROOF AND VAPOR TIGHT LED LIGHTING AT BRAINTREE-WEYMOUTH IPS - PHASE 1 AWARD OF AN ENERGY EFFICIENT CONTRACT TO A NGRID PREQUALIFIED VENDOR FOR THE REPLACEMENT OF 127 EXPLOSION PROOF AND VAPOR TIGHT INTERIOR LIGHTS WITH ENERGY EFFICIENT EXPLOSION PROOF AND VAPOR TIGHT LED LIGHTS AT THE BRAINTREE-WEYMOUTH IPS FOR A TERM OF 180 CALENDAR DAYS. A REBATE TOTALING \$38,413.48 WILL BE RECEIVED FROM NGRID UPON PROJECT COMPLETION FOR A PAYBACK PERIOD OF 4.0 YEARS.	OP-307	AWARD	HORIZON SOLUTIONS LLC	\$99,393.53
C-5.	12/09/15	OVERHEAD DOOR MAINTENANCE SERVICES AT VARIOUS MWRA FACILITIES DECREASE ESTIMATED QUANTITIES FOR SEMI-ANNUAL AND ANNUAL MAINTENANCE; NON-EMERGENCY AND EMERGENCY REPAIRS.	OP-212	2	COLLINS OVERHEAD DOOR, INC.	(\$30,321.80)
C-6.	12/09/15	PHASE 6 SEWER MANHOLE REHABILITATION AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE INTERNAL REHABILITATION OF 55 SEWER MANHOLES AT VARIOUS LOCATIONS IN BOSTON, MALDEN, MILTON, NEWTON, QUINCY, SOMERVILLE, WATERTOWN AND WOBURN FOR A TERM OF 210 CALENDAR DAYS.	OP-291	AWARD	NATIONAL WATER MAIN CLEANING COMPANY	\$203,516.50
C-7.	12/10/15	REPAIR OF SODIUM HYPOCHLORITE STORAGE TANK AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE REPAIRS TO THE SODIUM HYPOCHLORITE STORAGE TANK AT THE JOHN J. CARROLL WATER TREATMENT PLANT FOR A TERM OF 90 CALENDAR DAYS.	OP-287	AWARD	AMERICAN FIBERGLASS TANK REPAIR	\$41,900.00
C-8.	12/10/15	DIESEL GENERATOR MAINTENANCE AWARD OF CONTRACT TO LOWEST RESPONSIVE BIDDER FOR PREVENTIVE MAINTENANCE AND REPAIR OF THE DIESEL GENERATOR SYSTEM AT THE JOHN J. CARROLL WATER TREATMENT PLANT FOR A TERM OF 730 CALENDAR DAYS.	OP-312	AWARD	KNM HOLDINGS, LLC	\$404,762.05
C-9.	12/18/15	CENTRIFUGE SERVICES DEER ISLAND TREATMENT PLANT DECREASE ESTIMATED QUANTITIES FOR SERVICES AND TRANSPORTING OF PM95000 CENTRIFUGE UNITS INCLUDING ROTATING THE ASSEMBLIES AND PLANETARY GEARBOXES WITHIN SUCH UNITS.	5509	4	ALFA LAVAL, INC.	(\$112,374.41)
C-10.	12/18/15	PRELIMINARY DESIGN AND OWNER'S REPRESENTATIVE SERVICES FOR SPOT POND STORAGE FACILITY EXTEND CONTRACT TERM BY SIX MONTHS FROM AUGUST 15, 2017 TO FEBRUARY 15, 2018 TO ENSURE CONTINUED COVERAGE OF THE FULL TWO-YEAR WARRANTY PERIOD OF THE DESIGN/BUILD CONTRACT.	7233	3	CAMP, DRESSER & McKEE, INC.	\$125,000.00
C-11.	12/18/15	69KV ELECTRICAL SYSTEMS MAINTENANCE AWARD OF CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR PREVENTIVE MAINTENANCE AND REPAIR OF THE 69KV ELECTRICAL SYSTEM AT THE JOHN J. CARROLL WATER TREATMENT PLANT FOR A TERM OF 730 CALENDAR DAYS.	OP-313	AWARD	INFRA-RED BUILDING AND POWER SERVICES, INC.	\$132,405.00
C-12.	12/23/15	WORKERS' COMPENSATION LEGAL SERVICES AWARD OF CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR LEGAL REPRESENTATION SERVICES BEFORE THE MASSACHUSETTS DEPARTMENT OF INDUSTRIAL ACCIDENTS (DIA) FOR WORKERS' COMPENSATION CLAIMS FOR THE PERIOD OF JANUARY 1, 2016 TO DECEMBER 31, 2016.	A604	AWARD	TENTINDO KENDALL CANNIFF & KEEFE, LLP	\$95,000.00

PURCHASING DELEGATED AUTHORITY ITEMS - December 1 - 31, 2015

NO.	TITLE AND EXPLANATION	CONTRACT #	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-1.	12/1/15 MICRO STATION AWARD OF A SOLE SOURCE PURCHASE ORDER FOR A MICRO STATION FOR MONITORING WATER QUALITY IN MWRA'S RESERVOIRS. THE CONTAMINANT WARNING SYSTEM (CWS), PROVIDES MONITORING AND EVENT DETECTION FOR 18 INSTALLED LOCATIONS THROUGHOUT MWRA'S DISTRIBUTION SYSTEM. IN AN EFFORT TO LEVERAGE EXISTING SUPPORT INFRASTRUCTURE, AND STANDARDIZE HARDWARE, SOFTWARE, AND SPARE PARTS, STAFF RECOMMENDED THAT MWRA PURCHASE AN S::CAN MICRO STATION AS AN INTEGRAL PIECE OF THE ROUTE 12 MONITORING STATION; A NEW STATIONARY WATER QUALITY MONITORING LOCATION CURRENTLY UNDER CONSTRUCTION AT THE WACHUSETT RESERVOIR.			S::CAN MEASURING SYSTEMS, LLC	\$35,149.00
P-2.	12/1/15 MAXIMO SOFTWARE ANNUAL MAINTENANCE AND SUPPORT AWARD OF A PURCHASE ORDER FOR THE RENEWAL OF MAXIMO SOFTWARE ANNUAL MAINTENANCE AND SUPPORT. MAXIMO IS MWRA'S STANDARD MAINTENANCE MANAGEMENT TRACKING SYSTEM USED FOR MATERIALS MANAGEMENT, WORK ORDERS, OVERALL COSTS, AND PRIORITIZATION OF WORK SCHEDULES. THE SERVICE PERIOD IS JANUARY 1, 2016 THROUGH DECEMBER 31, 2016.	ITS41		IBM CORPORATION	\$209,492.28
P-3.	12/8/15 VMWARE USPHERE MAINTENANCE AND SUPPORT AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE MAINTENANCE AND SUPPORT OF VMWARE MSPHERE LICENSES. SINCE 2009, IN AN EFFORT TO STANDARDIZE ON A SINGLE VIRTUALIZATION ENVIRONMENT, THE MWRA HAS PURCHASED SEVENTY-SIX VMWARE LICENSES, AT DIFFERENT TIMES WITH DIFFERENT SUPPORT PERIODS. THE GOAL NOW IS TO CONSOLIDATE ALL SUPPORT PERIODS TO CO-TERMINATE ON JUNE 21, 2017 SO THAT ONE AGREEMENT CAN BE PROCESSED ANNUALLY. THE MAINTENANCE AND SUPPORT PERIOD FOR THE CONSOLIDATED RENEWAL REQUESTED IS 18 MONTHS TERMINATING ON JUNE 21, 2017.	WRA-4107Q	ITS58	INSIGHT PUBLIC SECTOR, INC.	\$27,519.92
P-4.	12/8/15 REPAIR OF ONE MUFFIN MONSTER GRINDER AWARD OF A SOLE SOURCE PURCHASE ORDER FOR THE REPAIR OF ONE MUFFIN MONSTER GRINDER FOR THE QUINCY PUMP STATION. MWRA HAS BEEN PURCHASING "MUFFIN MONSTER" SEWAGE GRINDERS FOR MORE THAN 17 YEARS FOR USE IN ITS WASTEWATER TREATMENT PLANTS AND PUMPING STATIONS. GRINDERS ARE INSTALLED IN THESE FACILITIES TO MACERATE SOLIDS SUCH AS BRICKS, WOOD, PLASTICS, AND LIGHT METAL, WHICH CAN COMMONLY FIND THEIR WAY INTO THE WASTEWATER SYSTEM.			JWC ENVIRONMENTAL	\$33,400.00
P-5.	12/8/15 UPGRADE OF TWO ALLEN BRADLEY VARIABLE FREQUENCY DRIVES AWARD OF A SOLE SOURCE PURCHASE ORDER FOR THE UPGRADE OF TWO ALLEN BRADLEY VARIABLE FREQUENCY DRIVES AT THE SPRING STREET PUMP STATION. THERE ARE FOUR SPLIT CASE PUMPS LOCATED WITHIN THE SPRING STREET PUMP STATION. VFD PARTS HAVE AN EXPECTED USEFUL LIFE OF APPROXIMATELY TEN YEARS; THE CURRENT VFD PARTS FOR PUMPS 2 AND 3 ARE APPROXIMATELY NINE YEARS OLD AND HAVE REACHED THE END OF THEIR RELIABLE, USEFUL SERVICE LIFE. THE VFD FOR PUMP #3 AT THE SPRING STREET PUMP STATION HAS FAILED. STAFF WILL UPGRADE BOTH PUMPS 2 AND 3 VFD'S AND PURCHASE UPGRADE PARTS AND PLACE IN INVENTORY FOR FUTURE REPLACEMENT IF UNANTICIPATED REPAIR IS REQUIRED.			NORTHEAST ELECTRICAL DISTRIBUTORS, INC.	\$35,772.00
P-6.	12/8/15 PBX EQUIPMENT ANNUAL MAINTENANCE AND SUPPORT APPROVAL OF A PURCHASE ORDER FOR THE RENEWAL OF PBX EQUIPMENT MAINTENANCE AND SUPPORT. MITEL PBX EQUIPMENT WAS SELECTED THROUGH A COMPETITIVE BID PROCESS IN 1998 AS PART OF THE REPLACEMENT OF THE TELEPHONE SYSTEM AT THE CHARLESTOWN NAVY YARD. MAINTENANCE AND SUPPORT FOR THE PBX EQUIPMENT INCLUDES 24/7 MONITORING, TROUBLESHOOTING, DIAGNOSTIC SERVICES, SOFTWARE UPGRADES FOR VOICEMAIL, CALL ACCOUNTING SOFTWARE, AND EQUIPMENT REPAIR. IN THE EVENT OF A BREAK, THE MWRA WILL EXECUTE A TIME AND MATERIALS PURCHASE ORDER TO COVER THE REPLACEMENT COSTS OF THOSE ITEMS. THE SERVICE PERIOD IS JANUARY 1, 2016 THROUGH DECEMBER 31, 2016.	WRA-4125Q	ITT50	METROPOLITAN TELEPHONE CO., INC.	\$37,845.40
P-7.	12/8/15 SUPPLY AND DELIVERY OF FERRIC CHLORIDE AWARD OF A ONE-YEAR PURCHASE ORDER FOR THE SUPPLY AND DELIVERY OF FERRIC CHLORIDE TO THE CLINTON WASTEWATER TREATMENT PLANT.	WRA-4120Q		KEMIRA WATER SOLUTIONS, INC.	\$40,950.00
P-8.	12/8/15 SIX MICROSOFT SQL SERVER ENTERPRISE CORE LICENSES AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR SIX MICROSOFT SQL SERVER ENTERPRISE CORE LICENSES. THE MIS FIVE-YEAR STRATEGIC PLAN, UNDER THE IT INFRASTRUCTURE PROGRAM RECOMMENDS THAT MWRA IMPROVE SERVER MANAGEMENT, INCLUDING STANDARDIZATION, INCREASED USE OF VIRTUALIZATION, AND PHYSICAL SERVER CONSOLIDATION. IN ALIGNMENT WITH THIS GOAL, MIS HAS TAKEN THE INITIATIVE TO ESTABLISH A STANDARD HARDWARE AND SOFTWARE ENVIRONMENT FOR ALL STANDARD QUERY LANGUAGE (SQL) DATABASE SERVERS. MICROSOFT SQL SERVER IS AN OPERATIONAL DATABASE MANAGEMENT SYSTEMS (ODBS) AND A STANDARD ODBMS OF THE MWRA. IT IS USED TO SUPPORT NUMEROUS MWRA ADMINISTRATIVE, FINANCIAL AND OPERATIONAL APPLICATION.	WRA-4112Q	GSA-6032	SHI INTERNATIONAL CORP.	\$96,138.00
P-9.	12/9/15 THREE FORD TRANSIT VANS AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THREE FORD TRANSIT VANS. THE PROCUREMENT OF THESE THREE VEHICLES WERE RECOMMENDED BY STAFF IN ACCORDANCE WITH MWRA'S VEHICLE REPLACEMENT POLICY. ALL VEHICLES ARE AT LEAST 8 YEARS OLD AND MEET OR EXCEED THE ESTABLISHED REPLACEMENT CRITERIA OF AGE AND/OR MILEAGE AND/OR CONDITION. THE VEHICLES BEING REPLACED WILL BE REDEPLOYED OR DECLARED SURPLUS.	WRA-4105		STONEHAM MOTOR COMPANY, INC.	\$102,700.00
P-10.	12/9/15 ELEVEN NEUTRAL GROUNDING RESISTORS AND MONITORS AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR ELEVEN NEUTRAL GROUNDING RESISTORS AND MONITORS FOR THE DEER ISLAND TREATMENT PLANT. THE EXISTING NEUTRAL GROUNDING RESISTORS (NGRS) ASSOCIATED WITH THE SUBSTATION TRANSFORMERS ARE LOCATED THROUGHOUT THE DEER ISLAND TREATMENT PLANT. THIS EQUIPMENT WAS INSTALLED IN THE MID 1990'S WHEN THE ELECTRICAL DISTRIBUTION SYSTEM WAS FIRST PUT INTO COMMISSION. THE NGRS LIMIT THE GROUND FAULT CURRENT AND MINIMIZE THE EQUIPMENT DAMAGE THAT OCCURS DURING A FAULT. THE EXISTING NGRS ARE AT THE END OF THEIR USEFUL LIFE AND ARE SHOWING SIGNS OF DEGRADATION. THE REPLACEMENT NGRS WILL BE HOUSED IN A NEMA 35 STAINLESS STEEL ENCLOSURE WHICH WILL PROTECT THE EQUIPMENT FROM THE HARSH ATMOSPHERE AT THE DEER ISLAND TREATMENT PLANT. THE NEW NGRS ARE EXPECTED TO HAVE A LIFE EXPECTANCY OF OVER TWENTY YEARS.	WRA-4118		GRANITE CITY ELECTRIC SUPPLY	\$119,374.53

PURCHASING DELEGATED AUTHORITY ITEMS - December 1 - 31, 2015

NO.	TITLE AND EXPLANATION	CONTRACT #	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-11. 12/18/15	<p>MINE SAFETY APPLIANCES GAS MONITORING EQUIPMENT AWARD OF A SOLE SOURCE PURCHASE ORDER FOR MINE SAFETY APPLIANCES GAS MONITORING EQUIPMENT AND PARTS FOR THE INTERMEDIATE PUMP STATION. FIXED GAS MONITORING EQUIPMENT IS USED TO MONITOR AND ALARM ON DANGEROUS LEVELS OF HYDROGEN SULFIDE, OXYGEN, LOWER EXPLOSIVE LIMITS GASES (LEL), CARBON MONOXIDE, AND SULFUR DIOXIDE AT MWRA'S WATER AND WASTEWATER FACILITIES. MWRA HAS STANDARDIZED ON THE USE OF ONE MANUFACTURER'S GAS MONITORING EQUIPMENT, MINE SAFETY APPLIANCES (MSA), THROUGHOUT ALL OF ITS FACILITIES WHEN REPLACEMENT SYSTEMS OR PARTS ARE INSTALLED. THIS PURCHASE ORDER IS FOR 14 MSA MODEL 9020 DUAL CHANNEL CONTROLLERS, MOUNTED IN A CUSTOM CABINET, WITH A POWER SUPPLY, AND ASSOCIATED WIRING AND SWITCHES. REPLACEMENT OF THESE CONTROLLERS HAS BECOME NECESSARY SINCE THE EXISTING GAS SYSTEMS ARE OBSOLETE AND SPARE PARTS ARE NO LONGER READILY AVAILABLE.</p>			NEPONSET CONTROLS, INC.	\$35,521.00
P-12. 12/18/15	<p>MINE SAFETY APPLIANCES GAS MONITORING EQUIPMENT AWARD OF A SOLE SOURCE PURCHASE ORDER FOR MINE SAFETY APPLIANCES GAS MONITORING EQUIPMENT AND PARTS FOR THE PRISON POINT CSO. GAS MONITORING EQUIPMENT AT PRISON POINT CSO INCLUDES TRANSMITTERS, REPLACEABLE GAS SENSOR HEADS, AND CONTROLLERS. CONTROLLERS RECEIVE MEASUREMENT INFORMATION FROM MULTIPLE TRANSMITTERS THROUGHOUT THE FACILITY. THIS INFORMATION IS COMMUNICATED TO GAS ALARMS, HORNS, AND STROBES LOCATED WITHIN THE FACILITY TO ALERT STAFF WHEN AN UNSAFE CONDITION EXISTS. CALIBRATIONS ARE PERFORMED ON THE GAS TRANSMITTERS MONTHLY TO ENSURE THAT THEY ARE FUNCTIONING PROPERLY TO ALARM WHEN DANGEROUS ATMOSPHERIC CONDITIONS ARE PRESENT. THIS PURCHASE ORDER IS FOR 18 MSA MODEL 9020 DUAL CHANNEL CONTROLLERS AND 1 MSA MODEL 9010 SINGLE CHANNEL CONTROLLER, MOUNTED IN A CUSTOM CABINET, WITH A POWER SUPPLY, AND ASSOCIATED WIRING AND SWITCHES. REPLACEMENT OF THESE CONTROLLERS HAS BECOME NECESSARY SINCE THE EXISTING GAS SYSTEMS ARE OBSOLETE AND SPARE PARTS ARE NO LONGER READILY AVAILABLE.</p>			NEPONSET CONTROLS, INC.	\$47,230.00

POSITION CONTROL REGISTER (PCR) LOCATION CHANGES OCTOBER 2015 BOARD

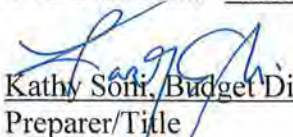
<u>DATE OF CHANGE</u>	<u>POSITION TITLE</u>	<u>CURRENT PCR#</u>	<u>CURRENT COST CENTER</u>	<u>NEW PCR #</u>	<u>NEW COST CENTER</u>	<u>REASON FOR CHANGE</u>
12/5/2015	Program Mgr, Energy &E environmental Mgmt	5850003	Operations Support	5210092	Operations Administration	To align position with current organizational structure
12/9/2015	OMC Laborer	5411013	Grounds Maint- Metro	5910042	Policy & Administration	To meet staffing needs at the Chelsea facility


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: January 13, 2016
SUBJECT: FY16 Financial Update and Summary



COMMITTEE: Administration, Finance & Audit


Kathy Soni, Budget Director
 Preparer/Title

X INFORMATION
 VOTE

Thomas J. Durkin
 Director, Finance

RECOMMENDATION:

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

DISCUSSION:

As stated in the November staff summary to the Board, the Authority is continuing the practice of setting aside favorable Capital Finance variances into the Defeasance Account with the intention of using these funds to defease debt and provide rate relief in future years. Targeted defeasances are a critical component of the Authority's multi-year rate management strategy. As such, in December the year-to-date debt related savings of \$12.2 million was transferred to the Defeasance Account. This favorable variance is the result of the continued low variable rate environment, the impact of reserves release, and the timing of planned new money borrowing. As we move into the second half of FY16, staff have begun to identify candidates for a year-end defeasance and evaluate options to optimize debt service savings in the most challenging upcoming fiscal years.

Without the transfer of the \$12.2 million in debt service savings to the Defeasance Account, the total year-to-date budget variance through December would have been \$16.2 million. After the transfer to the defeasance account, the net variance is \$4.0 million below budget. The \$4.0 million net variance is the result of lower than budgeted year-to-date actual expenses of \$2.2 million and higher than budgeted revenues of \$1.8 million.

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

	FY16 Budget	FY16 Actual	\$ Variance	% Variance
Direct Expenses	\$104.3	\$102.7	-\$1.7	-1.6%
Indirect Expenses	\$25.1	\$24.6	-\$0.5	-2.1%
Debt Service	\$210.9	\$210.9	\$0.0	0.0%
Total	\$340.3	\$338.2	-\$2.2	-0.6%

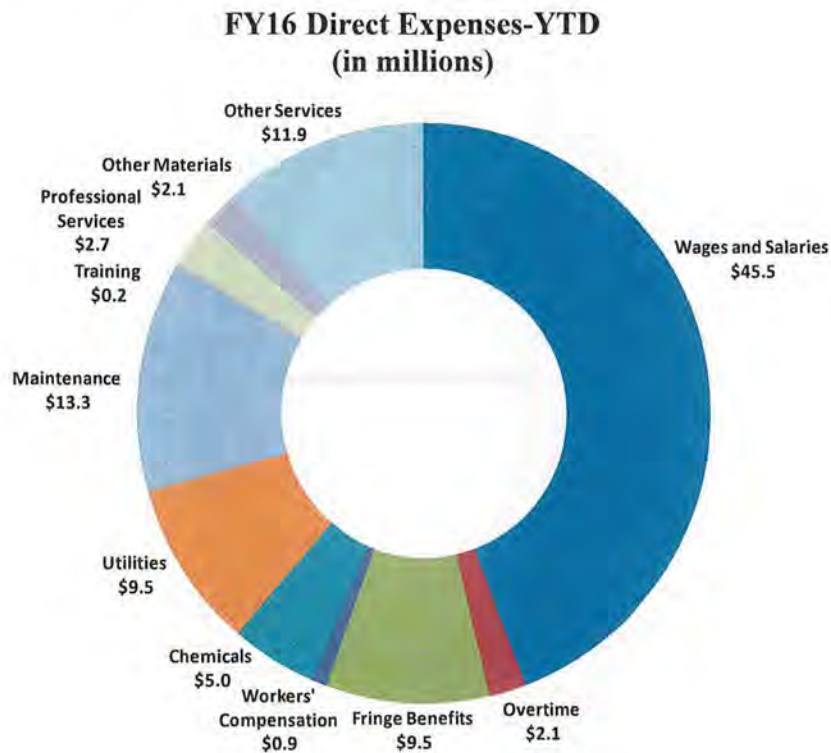
The major variances through December by categories were:

- Lower Direct Expenses of \$1.7 million for Wages and Salaries, Utilities, Workers' Compensation, Professional Services, Fringe Benefits, Chemicals. This is offset by higher spending for Maintenance, Other Material, and Overtime;
- Lower Indirect Expenses of \$537,000 for lower Watershed reimbursements; lower insurance costs, mostly for claims; and lower HEEC capacity charges.
- Revenues exceeded budget by \$1.8 million due to higher non-rate revenue related to higher than expected penalty fees and unbudgeted water revenues.

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

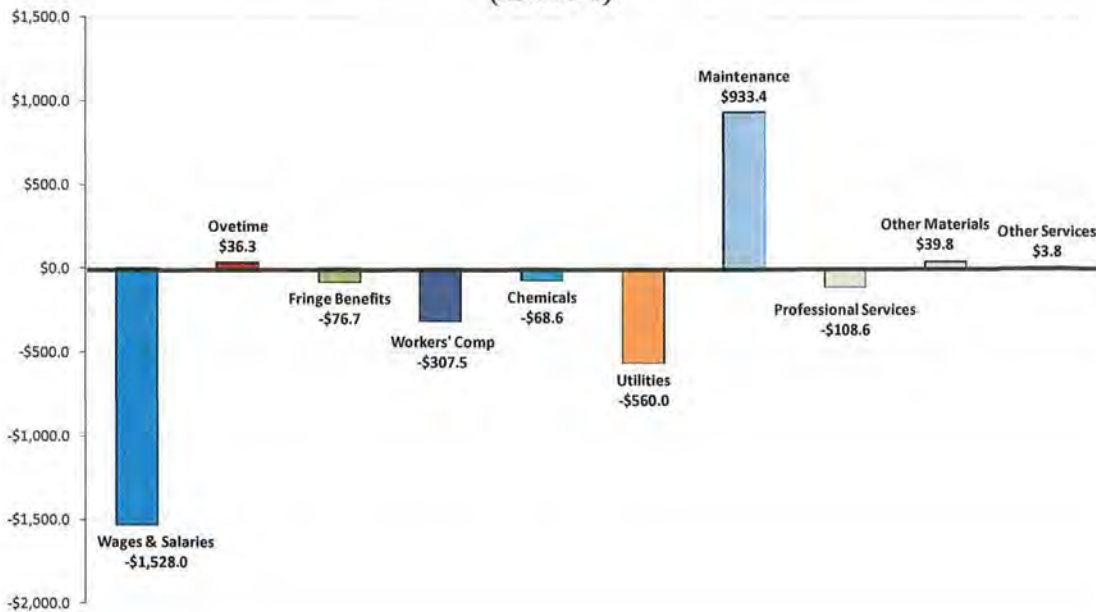
Direct Expenses

Year-to-date direct expenses totaled \$102.6 million, \$1.7 million or 1.6% less than budgeted.



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

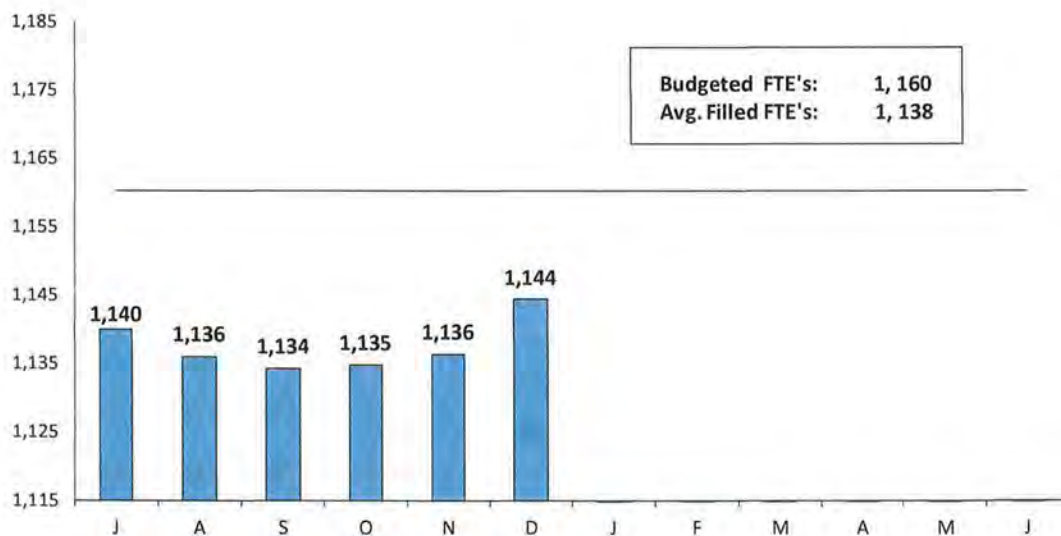
FY16 Direct Expense Variance (in 000's)



Wages and Salaries

Wages and Salaries were underspent by \$1.5 million or 3.1% 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 December were 1,138, which was 22 positions lower than the 1,160 FTEs budgeted. Additionally, the Authority had one temporary employee.

FY16 MWRA Full Time Equivalent (FTE) Position Trend



In December 2015, the Authority had 1,148 filled positions vs. 1,170 budgeted positions.

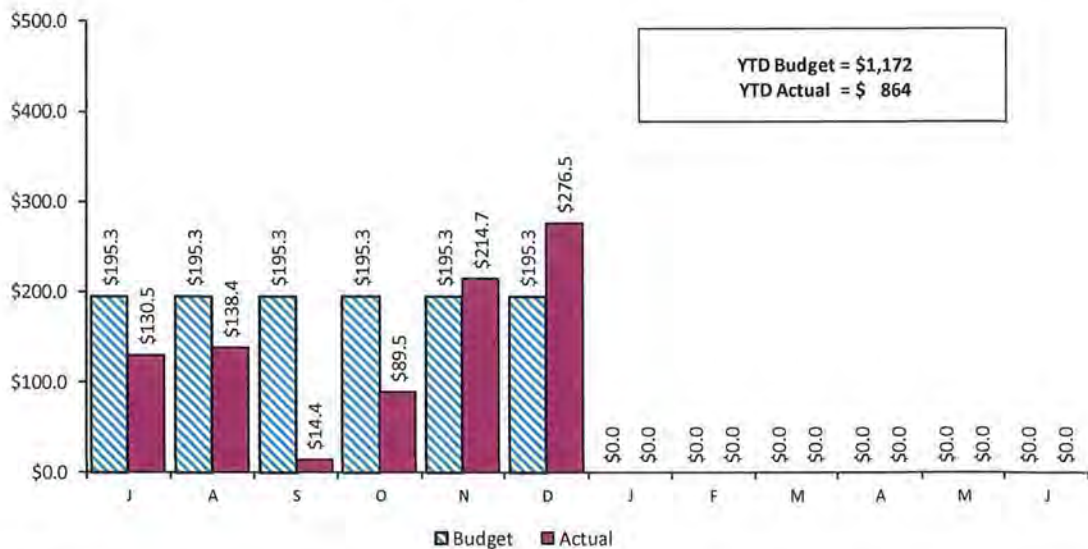
Utilities

Utilities were underspent \$560,000 or 5.6% for lower Electricity of \$685,000 mainly due to underspending at Deer Island of \$720,000 for lower commodity and transmission and distribution costs, lower flows which resulted in less pumping demand, and an over accrual at the end of FY15. There has also been underspending in Natural Gas of \$49,000, Propane of \$19,000 and #2 Fuel Oil of \$18,000. This was offset by higher spending on Diesel Fuel of \$133,000 due to 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. The overspending at Deer Island is offset by underspending in Field Operations mostly due to lower diesel fuel price which are averaging \$1.50 per gallon lower than the budget.

Workers' Compensation

Workers' Compensation expenses were lower than budget by \$308,000 or 26.2% based on lower compensation payments of \$168,000 and medical expenses of \$167,000. In December, actual spending was \$81,000 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	58	0	0	0	0	0	0
# of Open Claims-Medical Only	22	17	23	23	23	21	0	0	0	0	0	0

Professional Services

Professional Services spending was lower than budget by \$109,000 or 3.8% primarily associated with Lab Testing & Analysis of \$73,000 in ENQUAL-Wastewater and Engineering of \$48,000 at Deer Island and Reservoir Operations.

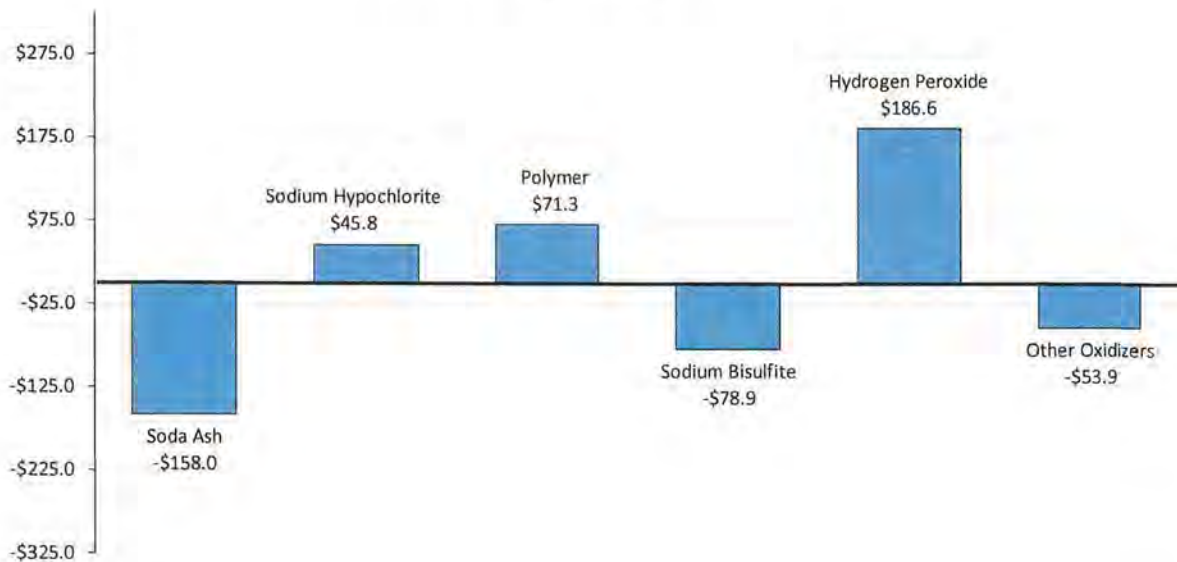
Fringe Benefits

Fringe Benefits spending is lower than budgeted by \$77,000 or 0.8% for Health Insurance of \$83,000 and Dental Insurance of \$47,000 due to fewer than budgeted filled positions. This is offset by higher spending in Unemployment Insurance of \$24,000 and Medicare costs of \$18,000.

Chemicals

Chemical expenses were lower than budgeted by \$69,000 or 1.4% year-to-date mainly due to lower than budgeted spending on Soda Ash of \$158,000 and Carbon Dioxide of \$10,000 due to lower usage to meet corrosion control targets and timing of deliveries for Soda Ash; Sodium Bisulfite of \$79,000 due to time of deliveries at DITP and lower usage at the Carroll Water Treatment Plant for Ozone residual removal; and Other Oxidizers of \$54,000 due to timing of deliveries and lower pricing for the new contract. This is offset by overspending on Hydrogen Peroxide of \$187,000 due to increased need for pretreatment of hydrogen sulfide gas due to plant flows; Polymer of \$71,000 due to treating high volume of sludge; and Sodium Hypochlorite of \$46,000 due to timing of deliveries at DITP.

FY16 Chemical Expense Variances
(in 000's)



Maintenance

Maintenance expenses were higher than budgeted by \$933,000 or 7.6% year-to-date. Materials were overspent by \$1.2 million. 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 were received this year. In December a number energy efficiency projects were completed. Some of these projects were unbudgeted but were completed to take advantage of incentives

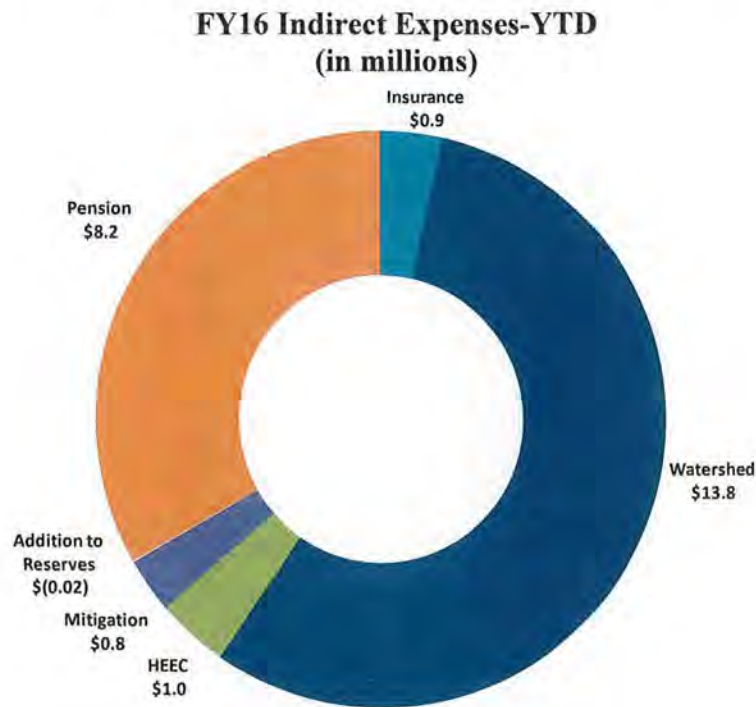
from the utility companies. Services were underspent by \$241,000 primarily due to schedule shifts for projects planned for this year. Maintenance expenses are projected to be close to budget by year-end.

Other Materials

Other Materials were higher than budget by \$40,000 or 2.0% mainly due to the timing of Vehicle Purchases of \$157,000; Lab and Testing Supplies of \$52,000 mainly due to receipt of equipment ordered in FY15 and received in the first Quarter of FY16; Health & Safety of \$43,000; and Computer Hardware of \$21,000. The overspending is offset by lower spending for Vehicle Expenses of \$161,000 mostly due to lower fuel prices; and Postage of \$43,000 due to timing of filling the postage meter.

Indirect Expenses

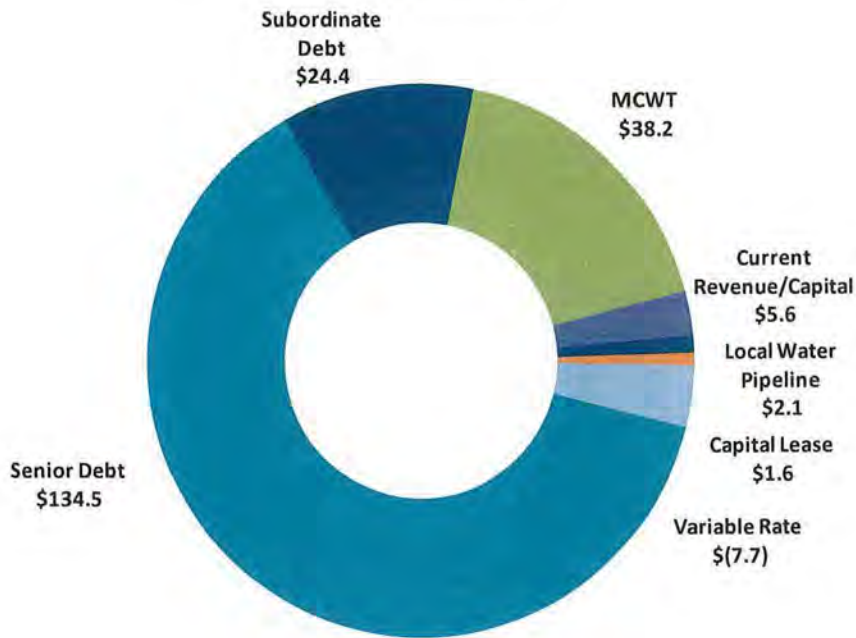
Through December Indirect expenses total \$24.6million, \$537,000 or 2.1% lower than budget. The majority of the FY16 underspending is related to lower Watershed Reimbursement of \$255,000 for FY15 over accrual; lower Insurance costs of \$205,000 mostly related to claims; and lower HEEC Agreement cost of \$136,000 due to timing of payments versus budget. This is offset by higher spending of \$60,000 for Winthrop and Quincy mitigation.



Debt Service Expenses

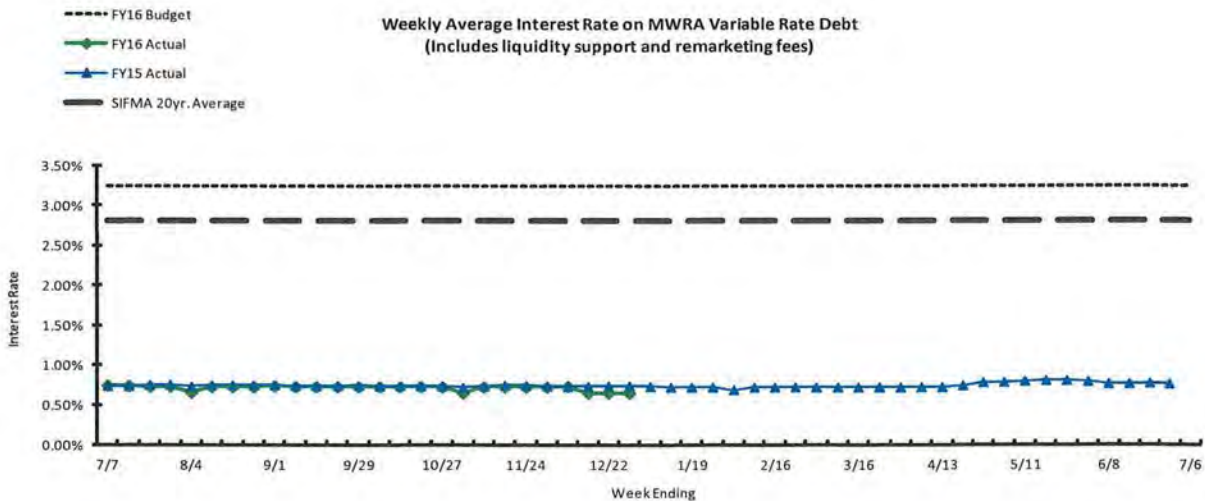
Debt Service expenses include the principal and interest payment for fixed debt, the variable subordinate debt, and the Massachusetts Clean Water Trust (MCWT) obligation, the commercial paper program for the local water pipeline projects, current revenue for capital, and the Chelsea facility lease payment.

FY16 Debt Expenses-YTD (in millions)



Debt Service expenses through December totaled \$210.9 million which is at budgeted level after the transfer of \$12.2 million of a favorable year-to-date variance to the Defeasance Account. The short-term rates related variance is \$7.7 million year-to-date. Additionally, the Authority recognized \$4.5 million in year-to-date underspending that is the result of 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 December totaled \$356.4 million which was \$1.8 million or 0.5% higher than budget.

The higher non-rate Revenue is due to Miscellaneous Revenue of \$756,000 of which, \$593,000 is for City of Lynn MWRA water use while they completed maintenance work on their water system, \$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; higher surplus equipment sales of \$187,000, and greater Investment Income of \$175,000.

The higher Investment Income of \$175,000 is 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 have favorable impact on the investment income variance.

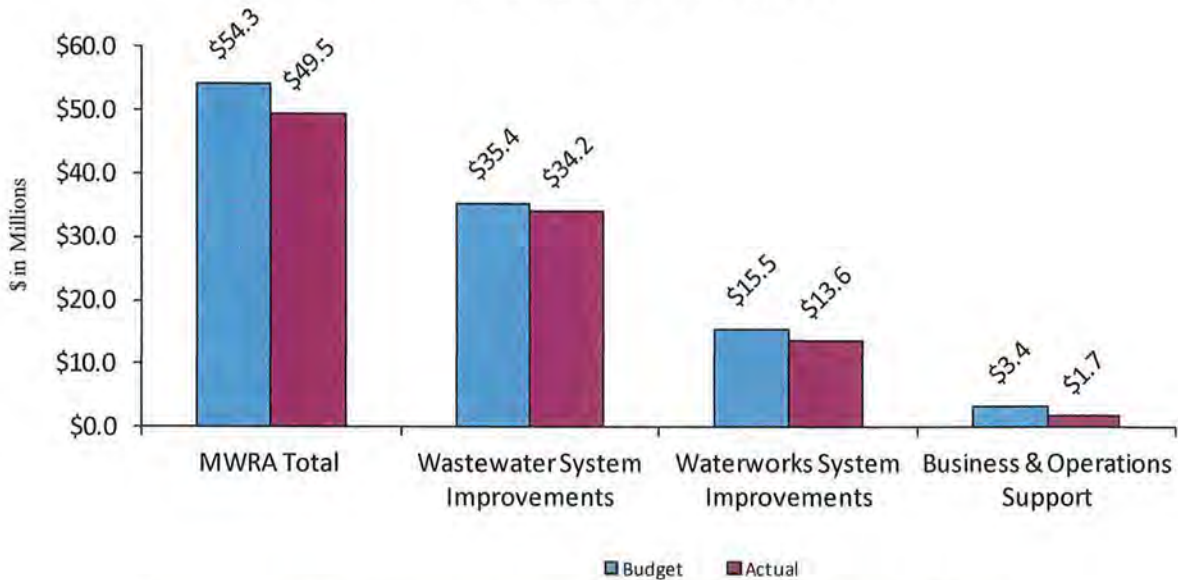
Please refer to Attachment 2 for a more detailed comparison by line item.

FY16 Capital Improvement Program

Spending year-to-date in FY16 totals \$49.5 million, \$4.8 million or 8.9% 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 totals \$7.9 million or 20.2%. Underspending was reported across all three programs with Waterworks underspent by \$1.9 million and Business and Operations Support and Wastewater posting underspending of \$1.7 million and \$1.2 million, respectively.

Spending By Program:

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



\$ in Millions	Budget	Actuals	\$ Var.	% Var.
Wastewater System Improvements				
Interception & Pumping	3.3	1.5	-1.8	-53.4%
Treatment	16.6	14.1	-2.5	-15.3%
Residuals	0.0	0.0	0.0	N/A
CSO	7.8	13.9	6.2	79.2%
Other	7.7	4.6	-3.1	-39.9%
Total Wastewater System Improvements	\$35.4	\$34.2	-\$1.2	-3.4%
Waterworks System Improvements				
Drinking Water Quality Improvements	3.7	4.7	1.0	28.1%
Transmission	4.0	0.8	-3.2	-79.5%
Distribution & Pumping	7.1	7.9	0.8	10.6%
Other	0.6	0.2	-0.5	-74.6%
Total Waterworks System Improvements	\$15.5	\$13.6	-\$1.9	-12.3%
Business & Operations Support	\$3.4	\$1.7	-\$1.7	-49.4%
Total MWRA	\$54.3	\$49.5	-\$4.8	-8.9%

The main reasons for the program variances in order of magnitude:

Combined Sewer Overflow: (CSO) Net overspending of \$6.2 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 Reserved Channel Sewer Separation of \$969,000 due to updated cost estimates and MWR003 Gate & Siphon of \$484,000 due to timing.

Waterworks Transmission: Net underspending of \$3.2 million reflects the combination of underspending for Long Term Redundancy of \$2.3M due to schedule change for Wachusett Aqueduct Pump Station and alternative analysis, and Watershed Land of \$967,000 due to the timing of land acquisitions. Offset by Hatchery Pipeline Design/Engineering Services During Construction/Resident Engineer Inspection of \$149,000 due to consultant progress and scope changes.

Wastewater Other: Underspending of \$3.1 million primarily due to less than anticipated community requests for grants and loans.

Wastewater Treatment: Underspending of \$2.5 million reflects underspending on As-Needed Design 7-2 and 7-3 of \$1.1M, North Main Pump Station VFD Replacement of \$682,000, Thermal Power Plant Boiler Control Replacement of \$474,000, Clinton Digester Cleaning & Rehab of \$300,000, and Clarifier Rehab Phase 2 - Design of \$131,000 due to timing, Steam Turbine Generator System Modifications Construction of \$450,000 due to energy efficiency rebate, and other smaller projects totaling \$310,000. Offset by overspending on Butterfly Valve Replacement of \$625,000 and HVAC Equipment Replacement Design/Engineering Services During Construction of \$284,000 due to timing.

Interception & Pumping: Underspending of \$1.8 million reflecting underspending on Chelsea Creek Screen House Upgrades of \$1.3 million due to timing and Chelsea Creek Upgrade Design of \$158,000.

Business and Operations Support: Underspending of \$1.7 million due to underspending on MIS-related projects of \$778,000 due to timing of IT Strategic Plan implementation, Security Equipment of \$454,000 due to delay in award of monitoring equipment contracts, and Capital Maintenance Planning & Development of \$417,000 due to lower than projected use of as-needed technical assistance.

Drinking Water Quality Improvements: Overspending of \$1.0 million due to Existing Facilities CP-7 of \$619,000 and Carroll Water Treatment Plant's Ultraviolet Disinfection - Design/Engineering Services During Construction/Resident Engineer Inspection of \$161,000 due to timing, and Brutsch Treatment Facility of \$251,000 reflecting additional construction administration and resident engineering services.

Water Distribution and Pumping: Net overspending of \$0.8 million due to overspending on Weston Aqueduct Supply Mains Section 36/C/S9-A11 Valve of \$875,000 and Spot Pond Supply

Mains Rehab of \$591,000 for Section 4 Webster Avenue Bridge Pipe Rehabilitation - Construction due to contractor progress, and Southern Extra High Redundancy & Storage Final Design/CA/RI of \$247,000 due to timing. Offset by NIH Redundancy & Storage of \$335,000 and WASM 3 - MEPA/Design/CA/RI of \$334,000 due to schedule shift, and Valve Replacement of \$209,000 due to timing.

Waterworks Other: Net underspending of \$484,000 reflects lower community requests partially offset by an amended community repayment schedule approved by the Board after the submittal of the FY16 budget.

Construction Fund Balance

The construction fund balance was at \$42.0 million as end of December. Commercial Paper availability was at \$201.0 million to fund construction projects.

Attachment 1 – Variance Summary December 2015

Attachment 2 – Current Expense Variance Explanations

Attachment 3 – Capital Improvement Program Variance Explanations

ATTACHMENT 1

	December 2015 Year-to-Date					
	Period 6 YTD Budget	Period 6 YTD Actual	Period 6 YTD Variance	%	FY16 Approved	% Expended
EXPENSES						
WAGES AND SALARIES	\$ 47,023,076	\$ 45,495,060	\$ (1,528,016)	-3.2%	\$ 99,363,168	45.8%
OVERTIME	2,097,315	2,133,645	36,330	1.7%	4,219,293	50.6%
FRINGE BENEFITS	9,584,545	9,507,895	(76,650)	-0.8%	19,326,756	49.2%
WORKERS' COMPENSATION	1,171,500	863,990	(307,510)	-26.2%	2,343,000	36.9%
CHEMICALS	5,023,585	4,955,002	(68,583)	-1.4%	9,790,848	50.6%
ENERGY AND UTILITIES	10,086,088	9,526,136	(559,952)	-5.6%	23,164,822	41.1%
MAINTENANCE	12,322,388	13,255,806	933,418	7.6%	28,698,772	46.2%
TRAINING AND MEETINGS	170,881	150,168	(20,713)	-12.1%	413,714	36.3%
PROFESSIONAL SERVICES	2,849,920	2,741,341	(108,579)	-3.8%	5,819,611	47.1%
OTHER MATERIALS	2,036,598	2,076,403	39,805	2.0%	6,164,589	33.7%
OTHER SERVICES	11,944,581	11,948,422	3,841	0.0%	23,529,902	50.8%
TOTAL DIRECT EXPENSES	\$ 104,310,477	\$ 102,653,868	\$ (1,656,607)	-1.6%	\$ 222,834,475	46.1%
INSURANCE	\$ 1,080,399	\$ 874,922	\$ (205,477)	-19.0%	\$ 2,160,797	40.5%
WATERSHED/PILOT	14,048,117	13,793,005	(255,112)	-1.8%	28,096,233	49.1%
BEC ₀ PAYMENT	1,134,068	998,017	(136,051)	-12.0%	1,946,157	51.3%
MITIGATION	700,000	760,000	60,000	8.6%	1,400,000	54.3%
ADDITIONS TO RESERVES	(17,463)	(17,463)	-	0.0%	(34,927)	50.0%
RETIREMENT FUND	8,159,521	8,159,521	-	0.0%	8,159,521	100.0%
POST EMPLOYEE BENEFITS	-	-	-	---	5,224,848	0.0%
TOTAL INDIRECT EXPENSES	\$ 25,104,642	\$ 24,568,002	\$ (536,640)	-2.1%	\$ 46,952,629	52.3%
STATE REVOLVING FUND	\$ 38,216,507	\$ 38,216,507	\$ -	0.0%	\$ 81,876,277	46.7%
SENIOR DEBT	139,032,429	134,532,149	(4,500,280)	-3.2%	283,024,431	47.5%
CORD FUND	-	-	-	---	-	---
DEBT SERVICE ASSISTANCE	-	-	-	---	-	---
CURRENT REVENUE/CAPITAL	5,600,000	5,600,000	-	0.0%	11,200,000	50.0%
SUBORDINATE MWRA DEBT	24,396,234	24,396,234	-	0.0%	49,222,442	49.6%
LOCAL WATER PIPELINE CP	2,074,620	2,074,620	-	0.0%	4,149,240	50.0%
CAPITAL LEASE	1,608,530	1,608,530	-	0.0%	3,217,060	50.0%
VARIABLE DEBT	-	(7,699,171)	(7,699,171)	---	-	0.0%
BOND REDEMPTION SAVINGS	-	-	-	---	-	---
DEFESANCE ACCOUNT	-	12,199,451	12,199,451	---	-	0.0%
TOTAL DEBT SERVICE	\$ 210,928,320	\$ 210,928,320	\$ -	0.0%	\$ 432,689,450	48.7%
TOTAL EXPENSES	\$ 340,343,440	\$ 338,150,190	\$ (2,193,248)	-0.6%	\$ 702,476,554	48.1%
REVENUE & INCOME						
RATE REVENUE	\$ 336,220,000	\$ 336,220,000	\$ -	0.0%	\$ 672,440,000	50.0%
OTHER USER CHARGES	4,028,779	4,227,018	198,239	4.9%	8,683,898	48.7%
OTHER REVENUE	9,750,865	11,198,242	1,447,377	14.8%	12,000,066	93.3%
RATE STABILIZATION	-	-	-	---	-	---
INVESTMENT INCOME	4,543,650	4,718,245	174,595	3.8%	9,352,590	50.4%
TOTAL REVENUE & INCOME	\$ 354,543,294	\$ 356,363,505	\$ 1,820,211	0.5%	\$ 702,476,554	50.7%

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY16 Budget YTD December	FY16 Actuals YTD December	FY16 YTD Actual vs. FY16 Budget		Explanations
			\$	%	
Direct Expenses					
Wages & Salaries	47,023,076	45,495,060	(1,528,016)	-3.2%	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 December was 1,138, which was 22 positions lower than the 1,160 FTEs budgeted. Additionally, the Authority had one temporary employee.
Overtime	2,097,315	2,133,645	36,330	1.7%	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	9,584,545	9,507,895	(76,650)	-0.8%	Lower than budget mainly due to Health Insurance of \$83,000 and Dental Insurance of \$47,000 due to lower headcount, offset by overspending for Unemployment Insurance of \$24,000 and Medicare of \$18,000.
Worker's Compensation	1,171,500	863,990	(307,510)	-26.2%	Underspending due to lower compensation payments of \$168,000 and medical expenses of \$167,000. In December, actual spending was \$81,000 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	5,023,585	4,955,002	(68,583)	-1.4%	Lower year-to-date spending primarily due to lower than budgeted spending on Soda Ash of \$158,000 and Carbon Dioxide of \$10,000 due to lower usage to meet corrosion control targets and timing of deliveries for Soda Ash; Sodium Bisulfite of \$79,000 due to time of deliveries at DITP and lower usage at the Carroll Water Treatment Plant for Ozone residual removal; and Other Oxidizers of \$54,000 due to timing of deliveries and lower pricing for the new contract. This is offset by overspending on Hydrogen Peroxide of \$187,000 due to increased need for pretreatment of hydrogen sulfide gas due to lower than budgeted plant flows; Polymer of \$71,000 due to treating high volume of sludge; and Sodium Hypochlorite of \$46,000 due to timing of deliveries at DITP.

**ATTACHMENT 2
Current Expense Variance Explanations**

Total MWRA	FY16 Budget YTD December	FY16 Actuals YTD December	FY16 YTD Actual vs. FY16 Budget		Explanations
			\$	%	
Utilities	10,086,088	9,526,136	(559,952)	-5.6%	Underspending due to lower Electricity of \$685,000 mainly due to underspending at Deer Island of \$720,000 for lower commodity and transmission and distribution costs, lower flows which resulted in less pumping demand, and an over accrual at the end of FY15. There has also been underspending in Natural Gas of \$49,000, Propane of \$19,000 and #2 Fuel Oil of \$18,000. This was offset by higher spending on Diesel Fuel of \$133,000 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. The overspending at Deer Island is offset by underspending in Field Operations due to lower diesel fuel price which is averaging \$1.50 per gallon lower than the budget.
Maintenance	12,322,388	13,255,806	933,418	7.6%	Materials were overspent by \$1.2 million. 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 were received this year. In December a number of energy efficiency projects were completed. Some of these projects were unbudgeted but were completed to take advantage of incentives from the utility companies. Services were underspent by \$241,000 primarily due to schedule shifts for projects planned for this year. Maintenance expenses are projected to be close to budget by year-end.
Training & Meetings	170,881	150,168	(20,712)	-12.1%	Lower spending primarily associated with timing of MIS training initiatives.
Professional Services	2,849,920	2,741,341	(108,579)	-3.8%	Lower spending on Lab Testing & Analysis of \$73,000 in ENQUAL-Wastewater; and Engineering of \$48,000 at Deer Island and Reservoir Operations
Other Materials	2,036,598	2,076,403	39,805	2.0%	Higher than budget mainly due to timing of Vehicle Purchase of \$157,000; Lab and Testing Supplies of \$52,000 mainly due to receipt of equipment ordered in FY15 and received in the first Quarter of FY16; Health & Safety of \$43,000; Computer Hardware of \$21,000. The overspending is offset by lower spending for Vehicle Expense of \$161,000 mostly due to lower fuel prices and Postage of \$43,000 due to filling the postage meter.

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY16 Budget YTD December	FY16 Actuals YTD December	FY16 YTD Actual vs. FY16 Budget		Explanations
			\$	%	
Other Services	11,944,581	11,948,422	3,841	0.0%	Higher than budgeted spending of \$96,000 for Other Services for UST remediation contract and for Ward Street Headworks radio tower demolition; \$71,000 for Telephone Services associated with Field Operations SCADA lines for the water and wastewater facilities; \$32,000 for Membership/Dues/Subscriptions; and \$31,000 for permit fees due to DEP fees for Clinton and DITP. This is offset by underspending of \$73,000 for Grit and Screenings disposal services primarily due to lower quantities; \$69,000 for Space Lease Rentals for the Chelsea facility lease due to an overpayment of escrow for insurance; \$43,000 for Other Rentals; \$20,000 for Health & Safety Services; and \$16,000 for Printing/Duplicating.
Total Direct Expenses	104,310,477	102,653,868	(1,656,607)	-1.6%	
Indirect Expenses					
Insurance	1,080,399	874,922	(205,477)	-19.0%	Lower Payments/Claims of \$156,000 and Premiums of \$50,000.
Watershed/PILOT	14,048,117	13,793,005	(255,112)	-1.8%	Underspending due to lower Reimbursement expenses of \$255k due to FY15 overaccrual.
HEEC Payment	1,134,068	998,017	(136,051)	-12.0%	Lower spending due to timing of actual billing.
Mitigation	700,000	760,000	60,000	8.6%	
Addition to Reserves	(17,463)	(17,463)	-	0.0%	
Pension Expense	8,159,521	8,159,521	(0)	0.0%	
Post Employee Benefits	-	-	-		
Total Indirect Expenses	25,104,643	24,568,002	(536,641)	-2.1%	
Debt Service					
Debt Service	210,928,320	210,928,320	-	0.0%	In December staff transferred \$12.2 million of a favorable YTD variance to the Defeasance Account. The short-term rates related variance is \$7.7 million YTD. Additionally, the Authority recognized \$4.5 million YTD underspending that is the result of the favorable impact of defeasances related to reserve releases and for not borrowing senior debt scheduled for November.
Debt Service Assistance	-	-	-		
Total Debt Service Expenses	210,928,320	210,928,320	-	0.0%	
Total Expenses	340,343,440	338,150,190	(2,193,249)	-0.6%	

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY16 Budget YTD December	FY16 Actuals YTD December	FY16 YTD Actual vs. FY16 Budget		Explanations
			\$	%	
Revenue & Income					
Rate Revenue	336,220,000	336,220,000	-	0.0%	
Other User Charges	4,028,779	4,227,018	198,239	4.9%	
Other Revenue	9,750,865	11,198,242	1,447,377	14.8%	City of Lynn water non-rate revenue of \$593,000 for use of MWRA water while they completed maintenance work on their water system; TRAC penalty payment of \$561,000, and sale of surplus equipment of \$187,000.
Rate Stabilization	-	-	-		
Investment Income	4,543,650	4,718,245	174,596	3.8%	The higher Investment Income of \$175,000 is 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 have favorable impact on the investment income variance.
Total Revenue	354,543,294	356,363,505	1,820,212	0.5%	
Net Revenue in Excess of Expenses	14,199,854	18,213,313	4,013,461		

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

	FY16 Budget YTD December	FY16 Actuals YTD December	YTD Actuals vs. Budget		Explanations
			\$	%	
Interception & Pumping (I&P)	\$3,284	\$1,532	(\$1,752)	-53.4%	Underspending mainly due to Chelsea Screenhouse Upgrades of \$1.3M due to timing, Alewife Brook Pump Station Rehab - Construction of \$443,000 due to schedule change, and other smaller projects totaling \$250,000. Offset by Nut Island Headworks Electric, Grit & Screenings Conveyance Design and Construction of \$241,000 due to progress.
Treatment	\$16,606	\$14,068	(\$2,538)	-15.3%	Underspending on As-Needed Design 7-2 and 7-3 of \$1.1M, North Main Pump Station VFD Replacement of \$682,000, Thermal Power Plant Boiler Control Replacement of \$474,000, Clinton Digester Cleaning & Rehab of \$300,000, and Clarifier Rehab Phase 2 - Design of \$131,000 due to timing, Steam Turbine Generator System Modifications Construction of \$450,000 due to energy efficiency rebate, and other smaller projects totaling \$310,000. Offset by overspending on Butterfly Valve Replacement of \$625,000 and HVAC Equipment Replacement Design/Engineering Services During Construction of \$284,000 due to timing.
Residuals	\$0	\$0	\$0	-	
CSO	\$7,773	\$13,927	\$6,154	79.2%	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 Reserved Channel Sewer Separation of \$969,000 due to updated cost estimates, and MWR003 Gate & Siphon of \$484,000 due to timing.
Other Wastewater	\$7,718	\$4,643	(\$3,076)	-39.9%	Underspending on Infiltration and Inflow (I/I) due to community requests for grants and loans being less than budgeted.
Total Wastewater	\$35,382	\$34,170	(\$1,213)	-3.4%	
Drinking Water Quality Improvements	\$3,680	\$4,713	\$1,033	28.1%	Overspending due to Existing Facilities CP-7 of \$619,000 and Carroll Water Treatment Plant's Ultraviolet Disinfection - Design/Engineering Services During Construction/Resident Engineer Inspection of \$161,000 due to timing, and Brutsch Treatment Facility of \$251,000 due to additional construction administration and resident engineering services.

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

	FY16 Budget YTD December	FY16 Actuals YTD December	YTD Actuals vs. Budget		Explanations
			\$	%	
Transmission	\$4,050	\$830	(\$3,220)	-79.5%	Underspending for Long Term Redundancy of \$2.3M due to schedule change for Wachusett Aqueduct Pump Station and alternative analysis, and Watershed Land of \$967,000 due to the timing of land acquisitions. Offset by Hatchery Pipeline Design/Engineering Services During Construction/Resident Engineer Inspection of \$149,000 due to consultant progress and scope changes.
Distribution & Pumping	\$7,135	\$7,891	\$755	10.6%	Overspending on Weston Aqueduct Supply Mains Section 36/C/S9 - A11 Valve of \$875,000 and Spot Pond Supply Mains Rehab of \$591,000 for Section 4 Webster Avenue Bridge Pipe Rehabilitation - Construction due to contractor progress, and Southern Extra High Redundancy & Storage Final Design/CA/RI of \$247,000 due to timing. Offset by NIH Redundancy & Storage of \$335,000 and WASM 3 - MEPA/Design/CA/RI of \$334,000 due to schedule shift, and Valve Replacement of \$209,000 due to timing.
Other Waterworks	\$648	\$164	(\$484)	-74.6%	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.
Total Waterworks	\$15,513	\$13,597	(\$1,915)	-12.3%	
Business & Operations Support	\$3,404	\$1,721	(\$1,683)	-49.4%	Underspending on MIS-related projects of \$778,000 due to timing of IT Strategic Plan implementation, Security Equipment of \$454,000 due to delay in award of equipment monitoring contracts, and Capital Maintenance Planning & Development of \$417,000 due to lower than projected use of as-needed technical assistance.
Total MWRA	\$54,298	\$49,488	(\$4,810)	-8.9%	


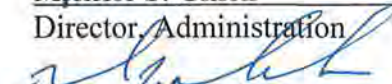
STAFF SUMMARY



TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: January 13, 2016
SUBJECT: Selection of Underwriters
MWRA Contract F237



COMMITTEE: Administration, Finance & Audit

X VOTE
INFORMATION


Michele S. Gillen
Director, Administration

Thomas J. Durkin
Director, Finance

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

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to select the following investment banking firms to serve as underwriters for fixed rate bond issues and to authorize the Executive Director, on behalf of the Authority, to enter into agreements with the selected firms; and further to approve the recommendation of the Consultant Selection Committee that Citi Group Global Markets, Inc., as first ranked, serve as senior manager for the next fixed rate bond transaction and, for subsequent transactions, it is the intent to assign senior managers in rotation based on the Selection Committee's ranking order, provided there are no material changes to the firm or in markets conditions.

Senior Managers:

- Citigroup Global Markets, Inc.
- J.P. Morgan Securities, Inc.
- Barclays Capital Inc.
- Bank of America Merrill Lynch
- Morgan Stanley & Co, Inc.

Co-Managers:

- | | |
|---------------------------|-------------------------------|
| Wells Fargo Securities | Samuel A. Ramirez & Co., Inc. |
| Goldman Sachs & Co | RBC Capital Markets |
| Jefferies & Company, Inc. | |

Selling Group:

- | | |
|----------------------------------|-----------------------------------|
| Academy Securities, Inc. | BNY Mellon Capital Markets, LLC |
| Drexel Hamilton, LLC | Estrada Hinojosa & Co., Inc. |
| Fidelity Capital Markets | First Southwest Company, LLC |
| Janney Montgomery Scott, LLC | Mesirow Financial, Inc. |
| Raymond James & Associates, Inc. | Robert W. Baird & Co, Inc |
| Roosevelt & Cross, Inc. | Siebert Brandford Shank & Co, LLC |
| Stern Brothers & Co. | Stifel Nicolaus & Co., Inc |
| The Williams Capital Group, LP | William Blair & Co., LLC |

DISCUSSION:

MWRA requires investment bankers to provide underwriting services for the bonds issued to fund its multi-billion dollar capital program. The firms selected to provide investment banking services will sell MWRA's debt issuance to a variety of investors including both retail and institutional investors. Beyond selling MWRA bonds to investors, selected firms will also provide recommendations on the structure and timing of a transaction. In order to effectively sell a bond transaction, MWRA requires a well-rounded team of underwriters to serve as senior manager, co-managers and participate in the selling group.

The senior manager has the largest role in a bond transaction. This firm will recommend the structure for bond issues, propose initial interest rates, assist with investor relations, receive and track orders and if necessary underwrite unsold bonds. The senior manager represents all the members of the underwriting team in negotiations with MWRA. Typically one senior manager will be designated to manage each sale and in that role will receive orders from the other underwriters, from institutional investors placing group orders and from its own clients. The designated senior manager also apportions the bonds to the other underwriters. The senior manager assumes the largest share of underwriting risk in a bond transaction. Senior managers are compensated through two mechanisms; first they receive a portion of the underwriting fee from the proceeds for selling the bonds, which have averaged \$4.50 per bond for the last five years and second, they receive commissions on bonds they sell to investors.

A co-manager's role in an underwriting is to provide suggestions on pricing and to sell bonds. Co-managers are compensated through a smaller portion of the underwriting fee and commissions on bonds they sell. Co-managers have a smaller financial liability should all the bonds not be placed with new bondholders.

The selling group is compensated by commissions on the bonds they sell and potentially a portion of the underwriting fee. The selling group does not have any responsibility to support the transaction if all of the bonds cannot be placed with investors. The purpose of the selling group is to diversify the underwriting team and provide additional distribution networks for MWRA bonds.

PROCUREMENT PROCESS:

The procurement process to select investment banking firms, utilized a one step Request for Qualification Statements and Proposals (RFQ/P), which was issued on November 3, 2015. In addition to the standard procurement advertising requirements, copies of the advertisement were sent directly to thirty-six firms to encourage competition. Twenty-six firms submitted proposals on November 24, 2015:

Proposers:

Academy Securities, Inc.	Mesirow Financial, Inc.
Bank of America Merrill Lynch	Morgan Stanley & Co, Inc.
Barclays Capital Inc.	Raymond James & Associates, Inc.
BNY Mellon Capital Markets, LLC	RBC Capital Markets
Citigroup Global Markets, Inc.	Robert W. Baird & Co, Inc
Drexel Hamilton, LLC	Roosevelt & Cross, Inc.
Estrada Hinojosa & Co., Inc.	Samuel A. Ramirez & Co., Inc.
Fidelity Capital Markets	Siebert Brandford Shank & Co, LLC
First Southwest Company, LLC	Stern Brothers & Co.
Goldman Sachs & Co	Stifel Nicolaus & Co., Inc
J.P. Morgan Securities, Inc.	The Williams Capital Group, LP
Janney Montgomery Scott, LLC	Wells Fargo Securities
Jefferies & Company, Inc.	William Blair & Co., LLC

The Selection Committee evaluated and ranked the proposals based on the criteria contained in the RFQ/P. The Selection Committee determined that it would conduct a detailed review of each member's top ten firms, which resulted in fifteen firms being discussed in detail. The Selection Committee results were as follows:

Firm	Rank	Ranking Points	Total Points
Citigroup Global Markets, Inc.	1	5	475
J.P. Morgan Securities, Inc.	2	13	455
Barclays Capital Inc.	3	17	439
Bank of America Merrill Lynch	4	21	426
Morgan Stanley & Co, Inc.	5	30	408
Wells Fargo Securities	6	35	381
Samuel A. Ramirez & Co., Inc.	7	36	389
Goldman Sachs & Co	8	36	384
RBC Capital Markets	9	41	375
Jefferies & Company, Inc.	10	50	350
BNY Mellon Capital Markets, LLC	11	65	304
Raymond James & Associates, Inc.	12	69	289
Fidelity Capital Markets	13	72	283
First Southwest Company, LLC	14	82	256
Siebert Brandford Shank & Co, LLC	15	84	255

Based on the results listed above, the Selection Committee recommends that the firms ranked 1 through 5 be designated as senior managers; and as provided in the RFQ/P, that Citi Group Global Markets, Inc., as first ranked, serve as the senior manager on MWRA's next bond transaction. For subsequent transactions, staff will follow the Selection Committee's ranking order when assigning a senior manager, barring any unforeseen changes to market or business

conditions. The firms selected to serve as senior managers provided written submissions which contained a clear understanding of MWRA's unique capital financing needs. The firms all have strong past performance records with MWRA or other municipal issuers and have sufficient capacity to underwrite large debt issuances and a highly effective institutional sales force.

The Selection Committee recommended that the firms ranked 6 through 10 above serve as co-managers. These firms will broaden the markets in which MWRA's bonds can be sold including both retail and institutional investors.

Following the selection of senior managers and co-managers, the committee determined it would identify a selling group in order to provide greater diversity and broader market access, including local markets, for the sale of MWRA bonds. The selection committee recommends that all the remaining firms be included in the selling group.

A separate Disclosure Panel comprised of staff from the Law Division and Procurement Department reviewed the information provided by the all the firms, and reported it did not find any conflicts of interest.

BUDGET/FISCAL IMPACT:

As described above, the costs of investment banking services are included in the cost of issuance of bond transactions.

MBE/WBE PARTICIPATION:

There were no minimum MBE/WBE participation requirements for this procurement, due to the absence of subcontracting opportunities. Three of the twenty-six proposers are certified by the Commonwealth's Supplier Diversity Office, two as minority owned and one as a woman owned business. All three firms were selected as participants.



MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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TTY: (617) 788-4971

WASTEWATER POLICY & OVERSIGHT COMMITTEE MEETING

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

to be held on

Wednesday, January 13, 2016

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

Time: Immediately following AF&A Comm.

AGENDA

A. Contract Awards

1. Agency-Wide Technical Assistance Consulting Services: Stantec Consulting Services Inc., Contract 7496 and Hazen and Sawyer, P.C., Contract 7497.
2. Sodium Hypochlorite & Sodium Bisulfite Tank Farm Rehabilitation, Design, Construction Administration & Resident Engineering Services, DITP: Stantec Consulting Services, Inc., Contract 6853

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the
Wastewater Policy and Oversight Committee

December 16, 2015

A meeting of the Wastewater Policy and Oversight Committee was held on December 18, 2015 at the Authority headquarters in Charlestown. Chairman Walsh presided. Present from the Board were Ms. Wolowicz and Messrs. Blackmon, Cotter, Foti, Pappastergion, Pena and Vitale. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Mike Hornbrook, John Vitale, Nava Navandan, Dave Pottle, and Bonnie Hale. The meeting was called to order at 11:20 a.m.

Contract Amendments/Change Orders


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

There was general discussion and question and answer. The Committee recommended approval of Amendment 2 (ref. agenda item A.1).

The meeting adjourned at 11:25 a.m.


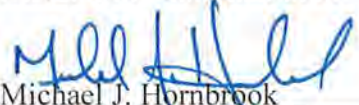
* Approved as recommended at December 18, 2015 Board of Directors meeting.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: January 13, 2016
SUBJECT: Agency-Wide Technical Assistance Consulting Services
Stantec Consulting Services Inc., Contract 7496
Hazen and Sawyer, P.C., Contract 7497

COMMITTEE: Wastewater Policy & Oversight

John Sabino, Director of Procurement
John P. Vetere, Deputy Chief Operating Officer
A. Navanandan, P.E., Chief Engineer
Meredith R. Norton, Program Manager
Preparer/Title

INFORMATION
 VOTE

Michele S. Gillen
Director of Administration

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to award two separate contracts to provide agency-wide technical consulting services to Stantec Consulting Services Inc. and Hazen and Sawyer, P.C., and to authorize the Executive Director, on behalf of the Authority, to execute Contract 7496 with Stantec Consulting Services Inc., and Contract 7497 with Hazen and Sawyer, P.C., each in an amount not to exceed \$1,450,000 and for a contract term of two years from the Notice to Proceed.

DISCUSSION:

The purpose of technical assistance contracts is to make available, on a continuing, as-needed basis, the services of qualified, professional engineering firms to assist MWRA staff on engineering study and/or design initiatives. The contracts involve the engineering disciplines of architecture, civil, structural, geotechnical, surveying, environmental and sanitary, mechanical and process, fire protection, electrical, control systems, chemical, corrosion and odor control, permitting, and security. These agency-wide technical assistance contracts supplement in-house staff on high-priority or unanticipated projects, or provide expertise on short-term assignments requiring specialized disciplines that are not cost effective for MWRA to maintain on an in-house basis and will ensure that adequate resources are available to quickly and comprehensively respond to MWRA's needs, particularly when emergency or unanticipated situations arise.

In response to previous concerns raised by the Board, a working group consisting of MWRA staff from the Procurement and Engineering and Construction Departments examined MWRA's use of technical assistance contracts. The group has since implemented the following three changes in how these contracts are utilized compared to previous practice: 1) staff manage the contracts with the goal of obtaining competitive pricing (based on level of effort, staffing, and technical approach) from the consultants on up to one-half of all proposed task orders; 2) whenever possible, staff limit task orders to smaller, short-term assignments that are considered high priority or are unanticipated, or when specific expertise on short-term assignments is required; and 3) staff now require sign-off from the Chief Engineer for all task orders up to and including \$25,000; from the Deputy Chief Operating Officer for task orders greater than \$25,000 and up to and including \$50,000; and from the Chief Operating Officer on any task order greater than \$50,000 and up to and including \$100,000. In the unlikely event that a Task Order greater than \$100,000 is needed, the Chief Operating Officer will confer with the Executive Director prior to approval.

To ensure adequate resources and responsiveness, MWRA awards similar technical assistance contracts for the Deer Island Treatment Plant and the John J. Carroll Water Treatment Plant.

Procurement Process

Staff utilized a one-step/two-envelope Request for Qualifications/Proposals, seeking two consultants 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. The envelopes containing a sample costing exercise from the most qualified firms were then opened. The most qualified proposers submitting the lowest two cost exercise proposals are recommended for award.

Three statements of Qualifications/Proposals were received on December 10, 2015 from Green International Affiliates, Inc., Hazen and Sawyer, P.C., 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 (27 points); (3) Similar Experience/Past Performance on Similar Non-Authority Projects (20 points); (4) Technical Approach/Organization and Management Approach (10 points), and (5) MBE/WBE Participation (3 points). The Selection Committee developed qualifications scores as shown below.

Consulting Firm	Qualifications Points
Hazen and Sawyer, P.C.	388
Stantec Consulting Services, Inc.	386
Green International Affiliates, Inc.	386

After reviewing the qualifications of all three firms, the Selection Committee determined that the qualifications point totals for the firms were the same or were within two points of each other. The Selection Committee was in agreement that all three firms submitted qualification statements that demonstrated a clear understanding of the contract needs and proposed project

teams consisted of well-qualified and experienced key personnel. Therefore, all three firms were found to be qualified.

The evaluation of the cost criterion in the procurement process for these technical assistance contracts is different from the usual process. In most Authority professional services procurements, the scope of work is clearly known and defined, and a consultant can estimate the level of effort and cost required to produce the desired services. By contrast, with these technical assistance contracts, the amount of labor hours required is unknown until the need for as-yet-undefined 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 scope and therefore the estimated 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 \$1,450,000 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 exercise estimates of the most qualified firms are presented below:

Consulting Firm	Sample Cost Exercise Estimates
Stantec Consulting Services, Inc.	\$1,442,884.80*
Hazen and Sawyer, P.C.	\$1,497,991.10*
Green International Affiliates, Inc.	\$1,580,394.44

*Reflects corrections made due to mathematical errors/rounding.

These sample cost exercise estimates are used for comparison purposes only in order to identify the two firms with the lowest costs. The intent is to award each contract for an amount not to exceed \$1,450,000; MWRA will incur costs under these contracts only for work requested under a Task Order which has been satisfactorily performed.

Stantec Consulting Services Inc. had the lowest sample cost. It should be noted that Stantec Consulting Services, Inc. recently acquired Fay, Spofford & Thorndike (FS&T), the Consultant for the one of the current Agency-Wide Technical Assistance Consulting Services contract (Contract 7437), which will expire on January 25, 2016, and has proposed many of the same key personnel currently working on the existing Technical Assistance contract. In addition, Hazen and Sawyer, P.E. is the Consultant for another current Agency-Wide Technical Assistance Consulting Services contract (Contract 7456) and has proposed many of the same key personnel. Staff report that the performance of both of these firms on the existing contracts has been very good to excellent.

Based on the qualifications of the firms and the sample cost exercises submitted, the Selection Committee recommends that the Board approve the award of two separate contracts to the two most qualified, lowest cost proposers, Contract 7496 to Stantec Consulting Services, Inc., and

Contract 7497 to Hazen and Sawyer, P.C., each in an amount not to exceed \$1,450,000, and for a contract term of two years from the Notice to Proceed.

BUDGET/FISCAL IMPACT:

The FY16 Capital Improvement Program (CIP) budget includes \$3,000,000 for these Agency-Wide Technical Assistance Consulting Services contracts.

MBE/WBE PARTICIPATION:

Due to the specialized and uncertain nature of this work, no minimum MBE or WBE participation requirements were established for these contracts. However, both Stantec's and Hazen and Sawyer's proposals identified their intent to use several MBE and/or WBE firms.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: January 13, 2016
SUBJECT: Design, Construction Administration, and Resident Engineering/Resident Inspection Services, Deer Island Sodium Hypochlorite and Bisulfite Tank Farm Stantec Consulting Services, Inc. Contract 6853



COMMITTEE: Wastewater Policy & Oversight

 INFORMATION
 X VOTE


Michele S. Gillen

Director of Administration


Michael J. Hornbrook

Chief Operating Officer

David F. Duest, Director, Deer Island WWTP
Richard J. Adams, Manager, Engineering Services
Preparer/Title

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to select Stantec Consulting Services, Inc. to provide design, construction management, and resident engineering/inspection services for the Deer Island Treatment Plant’s sodium hypochlorite and sodium bisulfite tank farm rehabilitation project, and to authorize the Executive Director, on behalf of the Authority, to execute said contract with Stantec Consulting Services, Inc. in an amount not to exceed \$2,574,868.40, for a contract term of 74 months from the Notice to Proceed.

BACKGROUND:

The Deer Island Disinfection Facilities include chemical storage and handling facilities for sodium hypochlorite, required for chlorination, and sodium bisulfite, required for dechlorination. Chlorination and dechlorination of wastewater effluent prior to discharge to Massachusetts Bay are required by MWRA’s National Pollutant Discharge Elimination System (NPDES) Permit.

There are six, 250,000-gallon storage tanks in a “tank farm” on Deer Island located east of Secondary Reactor Battery A and south of the disinfection gallery (see photograph on the following page). Three of the tanks are used for sodium hypochlorite storage, two for sodium bisulfite storage, and one as a stand-by storage tank for sodium hypochlorite. Separate containment areas are provided for the three tank groups. All six tanks are insulated to prevent breakdown of sodium hypochlorite at high temperatures and freezing of sodium bisulfite at low temperatures, and the interior steel tank structures are protected with a rubber lining system.

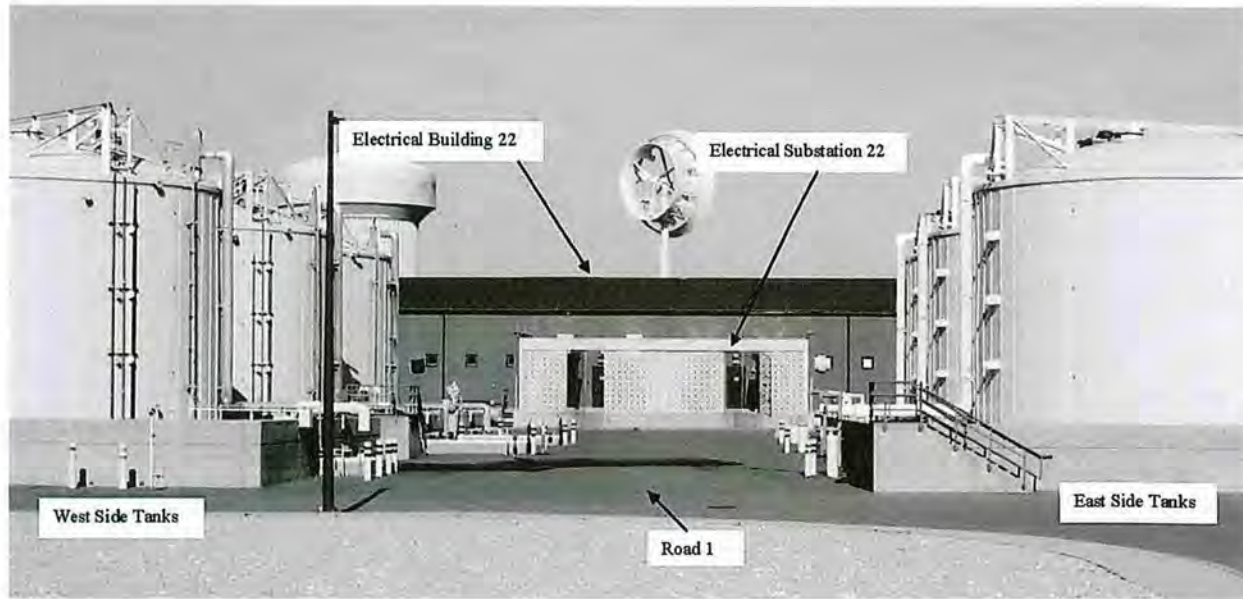


Sodium hypochlorite is pumped from the storage tanks into a buried, eight-inch-diameter chlorinated polyvinyl chloride (CPVC) piping distribution system by five pumps located in the disinfection gallery. For the disinfection of plant effluent, the pumps feed sodium hypochlorite through four points, located at each of the flash mixers at the upstream end of the two disinfection basins.

In addition, sodium bisulfite is distributed from two storage tanks via a buried six-inch CPVC piping distribution system by five pumps to the two addition points located in the outfall tunnel. Dechlorination is provided by the addition of sodium bisulfite to the disinfected secondary effluent.

Much of the disinfection equipment and piping has been in operation for approximately 21 years. This equipment is subjected to very corrosive environments and is approaching the end of its useful life. To extend the service life of these systems, the storage tanks need to be rehabilitated and the existing appurtenances, such as vent valves and isolation valves, need to be replaced. The existing single-wall, buried chemical CPVC piping system that was installed in 1995 also requires replacement. This is the only remaining direct-buried chemical piping on Deer Island as the majority of the chemical piping was originally installed in vaults or in gallery systems. Direct-buried lines are difficult to inspect, identify leaks, and perform any repair work on. In addition, staff recommend that the single-walled chemical lines be upgraded to double-walled lines.

DISCUSSION:



Contract 6853 includes design, bidding and construction administration, and resident engineering/inspection services for the Sodium Hypochlorite and Bisulfite Tank and Piping Systems Rehabilitation Project (Construction Contract 7449). The selected consultant will prepare biddable plans and specifications for the rehabilitation of the six existing chemical storage tanks, as well as a new underground pipe vault under Road 1 that will contain the new doubled-walled transfer and return lines for each of the tanks (four sodium hypochlorite and two sodium bisulfite). This new vault will connect to an existing vault beneath Electrical Building 22 where the existing piping enters the Disinfection and Dechlorination Facilities. The new vault shall be designed as an occupied space with lighting, heating, ventilation, fire protection, and multiple means of egress. The existing buried piping will need to be demolished to facilitate the installation of the vault with new piping. The final design shall include provisions for temporary piping and equipment, as needed, to allow the contractor to perform the work without interrupting the use of the sodium hypochlorite and sodium bisulfite systems. The consultant will provide engineering services during construction (ESDC), such as review of contractor submittals. Submittals include: shop drawings, schedules, change order requests, requests for information/clarification; and specialized engineering services. The consultant will also provide full-time resident engineering/inspection services during the 40-month construction period, and warranty period services.

Procurement Process

The Request for Qualifications/Proposals (RFQ/P) was originally advertised in March 2014, which included the replacement of the CPVC piping systems noted above with a pipe vault system. Three firms (Stantec Consulting Services, Inc., PEER Consultants, and CDM Smith) attended the pre-bid site visit. However, no proposals were received. Staff contacted the three firms that attended the site visit, and also contacted two other firms, Arcadis and AECOM, to determine why none of the firms submitted proposals. Stantec Consulting Services, Inc. (Stantec) informed staff that it believed the qualifications required in the RFQ/P were too restrictive.

Arcadis and CDM Smith felt that they would not be competitive. AECOM informed staff that it made a business decision not to propose. PEER Consultants told staff that it did not have the capacity to perform as the prime consultant and was only interested in participating in the project as a subconsultant.

To encourage additional interest from the consultant field, MWRA increased the scope of work to include the rehabilitation of the six chemical tanks. This work was originally planned to be competitively procured as a separate contract. In light of the comments received, staff also re-visited the qualifications requirements. After review, staff concluded that the original RFQ/P qualifications requirement that all "Lead Design Engineers" have at least 15 years experience, with at least four projects of similar size, scope and complexity could be safely modified for this project. The requirement was revised to 10 years experience with at least three projects of similar, size and complexity. Staff confirmed that more than one firm could meet this revised requirement. Staff proactively contacted several firms before the second pre-bid meeting to ensure consultants were aware that the RFQ/P was revised and was to be re-advertised and bid.

For the second procurement, staff utilized a one-step/evaluative RFQ/P. Proposals were evaluated by using the following criteria: Cost (40 points), Qualifications and Key Personnel (25 points), Technical Approach (15 points), Past Performance on Authority Projects (7 points), Experience/Past Performance on Similar Non-Authority Projects (5 points), Capacity/Organization and Management Approach (5 points), Minority- and Women-Owned Business Enterprise Participation (3 points).

Despite the significant additional efforts, MWRA received only one proposal from Stantec Consulting Services, Inc. Staff again contacted the consultants who received copies of the RFQ/P and received the following explanations as to why they elected to not participate in this procurement. AECOM again stated that it made a business decision not to bid. Parsons Brinckerhoff, CDM Smith, and Brown & Caldwell each stated that it did not have sufficient staffing in the area of work involved in this rehabilitation project. Arcadis told MWRA staff that it was concentrating its efforts on MWRA's electrical projects that were concurrently out to bid.

Staff are of the opinion that this work is of a specialized nature (chemical tank farms and chemical piping) and most firms in the area that have participated in previous, more-typical MWRA water and wastewater projects do not appear to have the skill set available to perform this work.

Stantec Consulting Services, Inc.'s cost proposal and level of effort is presented below:

<u>Proposers</u>	<u>Proposed Contract Cost</u>	<u>Level of Effort</u>
Stantec	\$2,574,868.40	20,586 hours
<i>MWRA Estimate</i>	<i>\$2,367,000.00</i>	

The five voting members on the Selection Committee then scored the proposal as follows:

<u>Proposer</u>	<u>Points</u>
Stantec	406

The Selection Committee voted unanimously to select Stantec Consulting Services, Inc. (Stantec) to complete this project despite being the only bidder. The firm proposed an excellent project team with excellent experience and past performance on MWRA and non-MWRA projects. The Selection Committee was in agreement that Stantec's technical approach was sound. Stantec's proposal included significant hours with appropriately experienced staff for the development of the Preliminary Design Report, and the preliminary and final design phases. The Selection Committee felt strongly that the Preliminary Design Report and design phases were the most critical aspects of this project and would be instrumental in ensuring the successful completion of the resulting construction project. Staff are of the opinion that this experienced project team would produce well-defined bid plans and specifications.

The Selection Committee was of the opinion that Stantec included an experienced design team and included the appropriate number of hours, by category, with the proper staffing mix (senior and junior level) to successfully complete the development of the technical specifications. The Selection Committee determined that Stantec's level of effort (hours) was appropriate and the difference between the Engineer's Estimate and Stantec's proposed contract cost was based upon actual higher hourly rates for senior engineers compared to MWRA's estimated hourly rates. Therefore, the Selection Committee recommends approval of this contract to Stantec Consulting Services, Inc. in an amount not to exceed \$2,574,868.40.

BUDGET/FISCAL IMPACT:

The approved FY16 CIP includes a budget of \$1,800,000 for Contract 6853. The original budget amount did not include Resident Engineering/Inspection Services. The contract award amount is \$2,574,868.40 or \$774,868.40 over budget. This amount will be covered within the approved five-year CIP spending cap.

MBE/WBE PARTICIPATION:

The minimum MBE and WBE participation requirements established for this project are 7.18 and 5.77%, respectively. Stantec has committed to 7.37% MBE and 5.77% WBE participation.



MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
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WATER POLICY AND OVERSIGHT COMMITTEE MEETING

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

to be held on

Wednesday, January 13, 2016

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

Time: Immediately following Wastewater Comm.

AGENDA

A. Information

1. Update on MWRA/DCR Invasive Aquatic Plant Management at Source and Emergency Reservoirs
2. Update on Potential Lead and Copper Rule Revisions
3. Report on 2015 Water Use Trends (materials to follow)
4. Wachusett Watershed Railroad

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the
Water Policy and Oversight Committee

December 16, 2015

A meeting of the Water Policy and Oversight Committee was held on December 18, 2015 at the Authority headquarters in Charlestown. Chairman Pappastergion presided. Present from the Board were Ms. Wolowicz and Messrs. Blackmon, Carroll, Cotter, Foti, Pena, Vitale and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, John Vetere, Bill Sullivan, Carmen DiMaria, Nava Navandan, Pam Heidell, and Bonnie Hale. The meeting was called to order at 11:25 a.m.

Approvals

***MOA with the City of Newton for Use of Sudbury Aqueduct Lands**

The Committee recommended approval of the MOA (ref. agenda item A.1).

Contract Awards

***Technical Assistance Consulting Services for John J. Carroll Water Treatment Plant: Stantec Consulting Services, Inc., Contract 7407**

Staff summarized the procurement process and the types of task orders that would likely be performed under this contract. (Ms. Wolowicz temporarily left the meeting.) The Committee recommended approval of the contract award (ref. agenda item B.1).

***Quabbin Power and Security Improvements: Ewing Electrical Company, Inc., Contract 7338**

Staff gave a presentation on the scope of work to be performed as part of this contract. (Ms. Wolowicz returned to the meeting.) The Committee recommended approval of the contract award (ref. agenda item B.2).

Approvals (cont'd.)

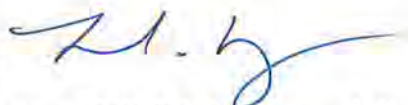
***Emergency Water Supply Agreement with the Town of Ashland**

Mr. Carroll noted that this was the third six-month emergency withdrawal period for Ashland and asked when the Town intended to join the MWRA service area. A representative of the Town replied that it was planned for May 2016. The Committee recommended approval of Emergency Water Supply Agreement (ref. agenda item A.2).

The meeting adjourned at 11:35 a.m.

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

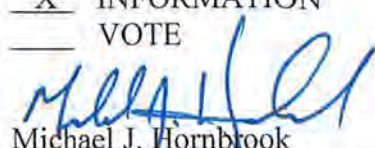
STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: January 13, 2016
SUBJECT: Update on Invasive Aquatic Management at MWRA Source and Emergency Reservoirs

COMMITTEE: Water Policy & Oversight

INFORMATION
 VOTE

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


Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

For information only.

BACKGROUND:

The ongoing control of aquatic invasive plants began at Wachusett Reservoir in 2003. Aquatic invasive plants can out-compete native species and grow to nuisance levels. If unchecked, this expansion can ultimately choke off water bodies. When these plants go through their normal life cycles and die, they can create adverse impacts to the water quality. Their decay consumes oxygen and loads the reservoir with organic matter, which also creates a disinfection demand (and consequently, increased treatment cost) at the water treatment plants. Additionally, dense plant matter or organisms such as zebra mussels can clog intake screens creating operational problems.

These plants spread from people (commonly fishermen), boats, and wildlife. However, wildlife is the most challenging vector to control, particularly wading birds, which can transport fragments from other water bodies to reservoirs. They can also ingest seeds and pass them intact.

Many variables contribute to the establishment and spread of aquatic invasive plants. They are biological organisms that respond to subtle changes in environmental conditions. Factors such as nutrient inputs, mild or cold winters, wet or dry seasons, duration of reservoir ice cover or lack of ice cover, etc., can all have a seasonal impact on invasive plants' growth. As noted below, some years have seen marked reductions in invasive plants through harvest and other control operations. In other years, control of plants has varied by species (as one is controlled, another fills in). The overall goal is to continue to remove these plants, and ultimately, create the proper environment for natives to return and flourish. Staff expect that invasive aquatic management at MWRA/DCR reservoirs will be a necessary and continuous annual activity to protect water quality for the foreseeable future.

This overview presents aquatic invasive plants control by looking at the reservoirs from west to east.

MWRA/DCR Reservoirs with Invasives Control Projects



DISCUSSION

Annual surveys are performed from Quabbin in the west to the metropolitan emergency reservoirs in the east. Each season's findings are compared to previous seasons for monitoring of shifts in plant community and as an early warning of the arrival of new aquatic invasive plants.

Quabbin Reservoir

Fortunately, since this monitoring began, there have been no documented invasive aquatic plant infestations in Quabbin Reservoir. While the non-native but established Variable Leaf Milfoil has had been found in remote areas of Quabbin Reservoir, there has not been any increase in the spread of this plant. A large amount of fragment barrier boom is annually deployed in these areas to prevent its spread. In 2014, the invasive plant *brittle naiad* was discovered in a small pioneering colony in the northern part of the reservoir. MWRA re-deployed a Diver Assisted Suction Harvesting contractor from Wachusett and removed this colony. This plant did not return nor was it found in other areas of Quabbin in 2015.

Quabbin Reservoir Watershed

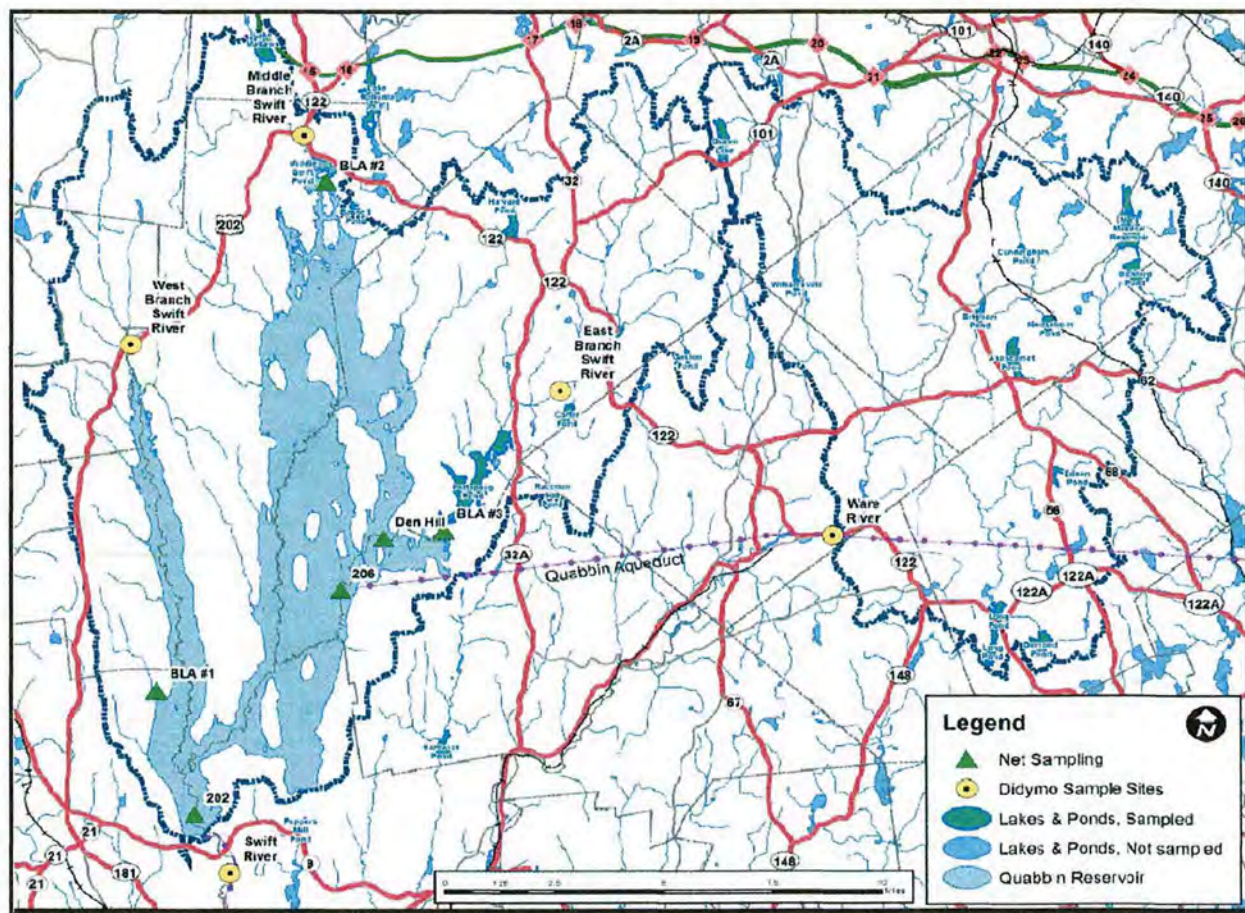
DCR Watershed Division has for many years monitored other water bodies in the Quabbin Watershed, as these are potential sources of invasives to the reservoir.

In 2015, DCR aquatic biologists conducted aquatic plant surveys on 27 water bodies in the watershed. Scattered aquatic invasives not found in Quabbin proper have been found in some of these water bodies and in tributaries. DCR plans to address these where feasible and will continually monitor for them.

There is also a focused monitoring program underway for “rock snot” (*Didymosphenia geminata* or *didymo* – shown in the photo on the right), which can be a problematic aquatic invasive in streams. This invasive diatom has been recently found in the Westfield River, just 50 miles west of Quabbin.



Monitoring includes the deployment of glass slides in streams, and analysis of rock scrapings to identify early presence. As the map below shows, these locations are in the Ware River, in tributaries of the Swift River (which feeds Quabbin), and the Swift River outflow. Fortunately, no *didymo* has been detected to date.



DCR also monitors for other non-plant aquatic invasives such as spiny water flea, fish hook flea, and zebra mussels. To date, none have been detected at Quabbin.

One of the most successful preventive measures to date has been DCR’s Quabbin Boat Decontamination Program. All boats entering the fishing areas must be cleared through the program and receive a security seal which is removed by DCR upon entering, and then replaced upon leaving the fishing areas. As the chart below shows, this program began in 2009, and DCR has decontaminated, inspected, and security-sealed nearly 2,000 boats, and quarantined and sealed nearly 700. The warm-weather inspection and decontamination includes a 140° Fahrenheit power wash of all invasives-susceptible areas of the boat and a hot water motor flush. MWRA staff routinely visit the warm-weather decontamination site to verify that the established protocols are being followed.

Year	Warm Weather Wash	Cold Weather Quarantine
2009	647	N/A
2010	443	94
2011	256	157
2012	206	120
2013	206	108
2014	182	114
2015	154	99

Overall, the numbers are trending downward as more anglers have chosen to keep their boats sealed as “Quabbin-only” boats.

Ware River

Ware River is a tributary to Quabbin Reservoir via diversions at Shaft 8 of the Quabbin Aqueduct at Barre, MA and represents part of the water system safe yield. The established non-native plant Variable Leaf Milfoil – shown in the picture to the right) was discovered in the Intake Pool of Ware River’s Shaft 8 in 2013 (see map on the following page). Seasonal efforts by MWRA staff have occurred since discovery to keep this plant from spreading throughout the Intake Pool, which could create problems with organic matter, screen blinding, and transfer of the plant to Quabbin via Shaft 11A.





Despite removal efforts in 2014, a notable increase and spread of Variable Leaf Milfoil was observed during the annual survey in 2015. Evidence shows that riverine sediment deposits from the high snowpack runoff created new areas for Variable Leaf Milfoil to colonize. MWRA staff again spent considerable effort to remove this plant during the annual summer maintenance drawdown. More than 144 cubic yards of Variable Leaf Milfoil was hand-harvested in 2015. The photos below show the exposed basin during drawdown (left) and a resulting sample of a dead Variable Leaf Milfoil plant after desiccation (right).



After three years of labor-intensive hand removal by MWRA staff, the program has been increased to include a five-foot winter drawdown to freeze/desiccate the plants down to the roots. The 2016 season will again see a hand harvesting summer effort to address any re-growth with a planned follow-up winter drawdown. Most winter drawdown operations typically take three consecutive years or so to see tangible reductions.

Wachusett Reservoir

Aquatic invasive control efforts first began at Wachusett Reservoir in 2003 soon after Eurasian Watermilfoil and Fanwort (pictured on the right) were discovered. Actions during this period have included seasonal deployment of fragment barrier booms, diver hand-harvesting and suction-harvesting, benthic barriers, and enhanced surveillance.

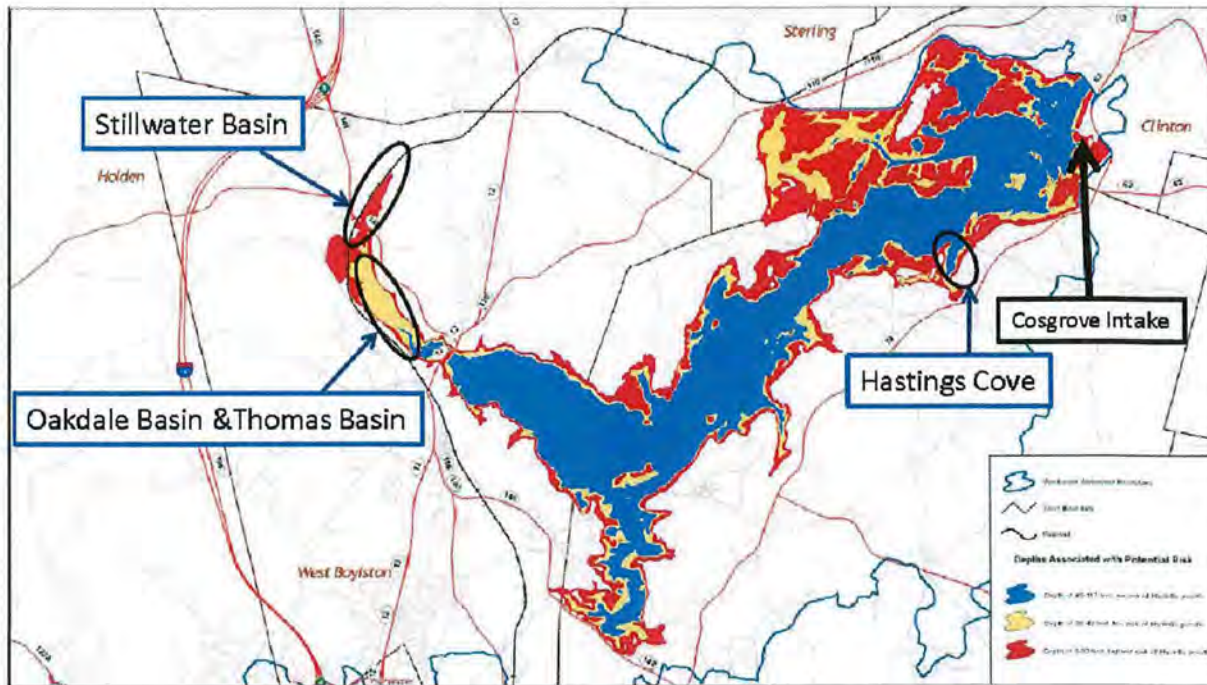
Like most invasives, these two invasives reproduce by seed, roots, and auto-fragmentation (photo below).



Fanwort (*Cabomba caroliniana*)

Auto-fragmentation is where the plant fragments separate, drift down stream, and root to become new plants. This expansion pattern allows them to aggressively displace native plants. These two plants were located in the upper reaches of the Wachusett Reservoir basin system shown on the map on the following page.

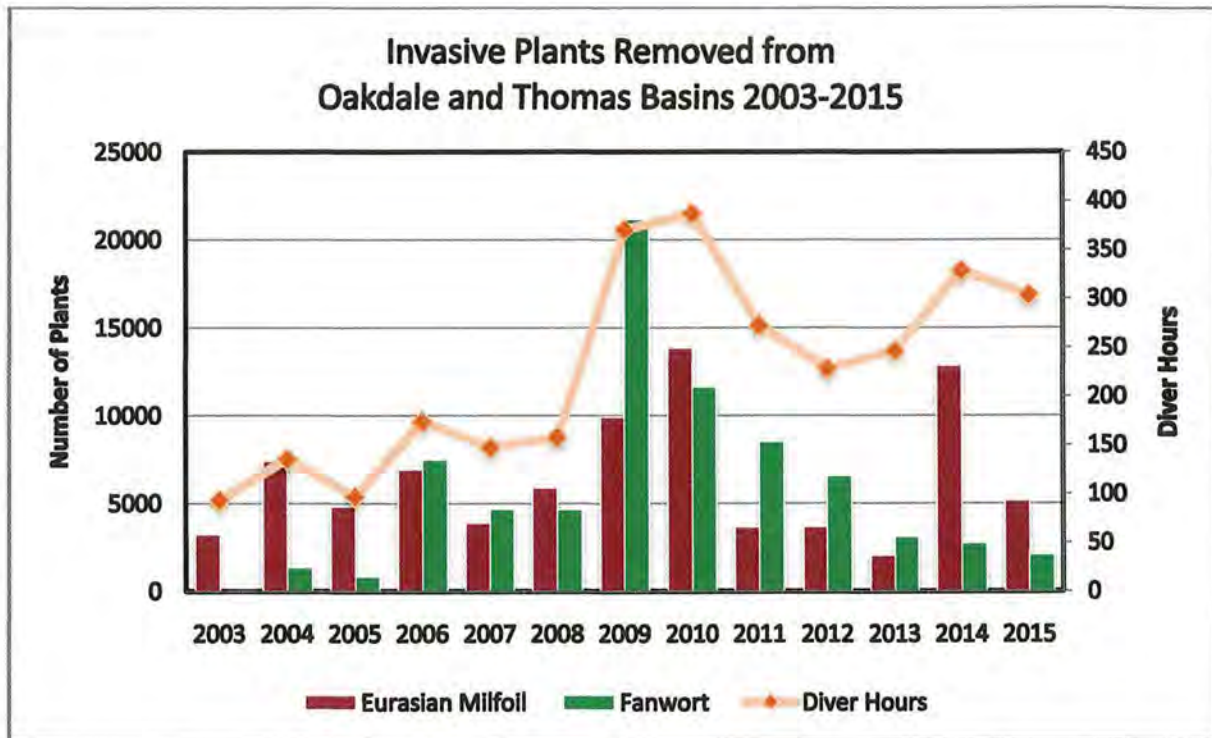
Wachusett Reservoir is at particular risk due to the large shallow areas (red and yellow areas on the map), particularly in the northern reservoir near the intake, where invasive plants could colonize.



From 2003 till 2013, the main efforts were focused on the Oakdale and Thomas Basin areas using the Rt. 12 Causeway as a “firebreak” to prevent fragments from migrating into the main basin. The Stillwater Basin was considered too infested to successfully apply the typical control methods in use at that time. In 2012, numerous Eurasian Watermilfoil plants were found outside of the causeway “firebreak,” which led staff to be concerned about fragment migration from the basins.

In 2013, control efforts shifted to the 37.5-acre Stillwater Basin using Diver Assisted Suction Harvesting, often referred to as “DASH,” and an independent quality assurance diving contractor to verify completion and thorough removal of targeted invasive plant species. DASH removal of invasive plants is conducted in two phases targeting early seasonal growth and later seasonal re-growth common to these invasive plants. After three years utilizing DASH in Stillwater Basin, staff have seen not only a clear reduction in invasive plant matter from the previous seasons but also saw the return of four species of native plants in some previously cleared areas.

At the lower Oakdale and Thomas Basins of the Wachusett, the chart on the following page illustrates the results of aquatic invasive removal efforts since 2003. These basins cover broad geographic areas and have lower plant densities than Stillwater Basin. Routine efforts in these areas here include targeted spot hand removal of invasive plants by divers (not DASH).

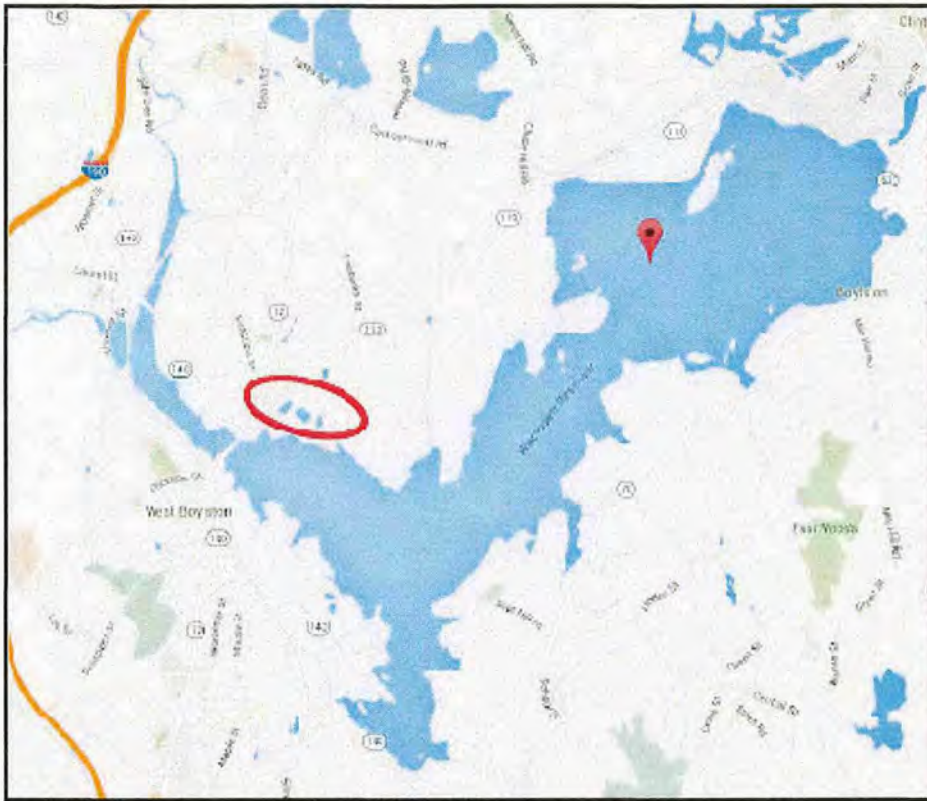


For 2016, the scope of work for MWRA’s quality assurance diving contract has been expanded to include oversight and removal efforts in these basins as well.

Lastly, in Wachusett Reservoir there is a northern location (Hastings Cove) where in 2012 a patch of Variable Leaf Milfoil was discovered. This is the most northern location where this invasive plant has been found and staff were concern about its spread to the nearby shallow areas in reservoir. Staff focused DASH efforts in the cove and after three years the Variable Leaf Milfoil has been drastically reduced, but not eradicated.

Wachusett Reservoir Watershed

DCR Watershed Division has for many years focused on aquatic invasives plants in other water bodies in the Wachusett Watershed, as these are potential sources of invasives to the reservoir. Wachusett has a much smaller watershed than Quabbin. Aquatic biologists monitor a number of ponds in the watershed for aquatic invasives. One area is the Lily Ponds, shown in the map on the following page.



THE LILY PONDS ARE
CLOSED
TO FISHING & BAIT
COLLECTION
UNTIL FURTHER NOTICE

These ponds, although not hydraulically connected to the reservoir, are still very close and represent a proximal threat. They contain the invasive plants Brittle Naiad and Eurasian Watermilfoil. DCR has closed these ponds to fishing and has recently completed herbicide application to control the aquatic invasive plants.

DCR aquatic biologists also survey the reservoir and watershed for other plankton and fish populations to understand the ecosystem. One small pond near the reservoir (below left) was recently found to have a species of tiny jellyfish (below right). Although yet confirmed in, or a threat to, the reservoir, it is a unique finding for an inland freshwater location.

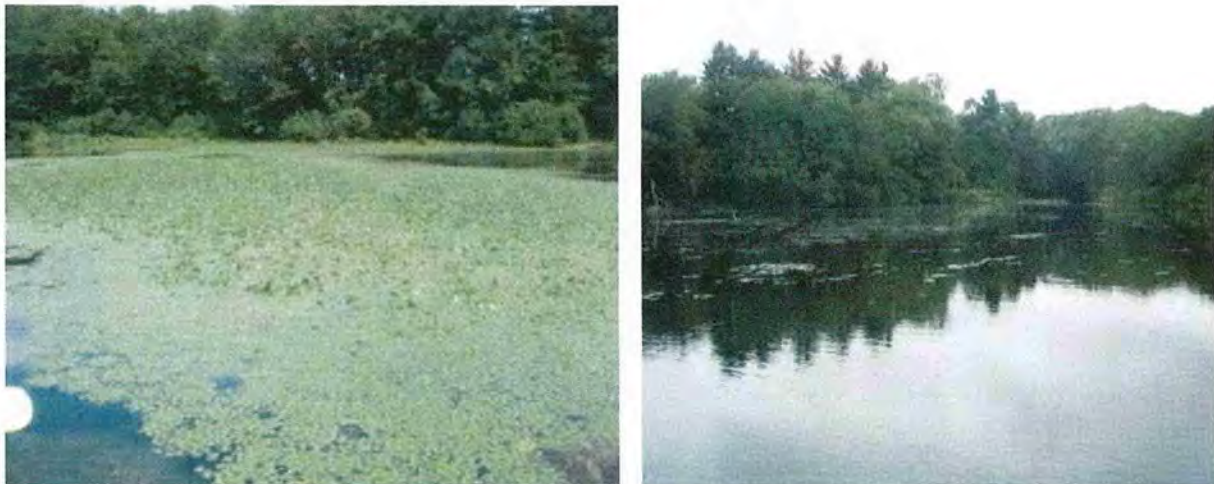


Sudbury Reservoir

Sudbury Reservoir is an emergency source reservoir that was last used (with Foss Reservoir) in May 2010 to supplement supply during the Shaft 5A water main break. Since 2007 when it was first discovered in the northern section of the reservoir, Water Chestnut was removed annually by mechanical harvester (photo below left). This work was routinely performed early in the season before the plant drops its nuts (photo below right). The nuts can remain viable in the sediment for many years before sprouting. Thus, annual harvesting slowly reduces the available nut stock.



Over time, the amount of seasonal effort required was reduced from mechanical harvests to hand-harvests as the available seed bank in the sediment was exhausted. In 2014, across the 78-acre water chestnut management area, nearly 27,000 plants were hand-harvested. In 2015, just 2,400 plants were hand-harvested representing a significant reduction. The photos below represent 2011 conditions on the left and 2014 conditions on the right for the same management area.



Annual surveys will continue to monitor the reservoir for return of Water Chestnut or any new pioneering infestations. One relatively recent development with Sudbury Reservoir is the arrival of Brittle Naiad (photo on the right). This plant is extremely difficult to manage because its seeds are eaten by birds and passed intact, so the plant can propagate anywhere water conditions are supportive. The plant also becomes very brittle (hence its name) making harvesting difficult if it is detected later in its life cycle. This plant showed up in a number of locations making its eradication difficult. This is in contrast to the Quabbin, where its presence was limited to one location and could be effectively targeted for removal utilizing DASH.



Aquatic plant survey consultants report this plant is presently in balance with native species at this location. They have noted that, barring a herbicide application, its eradication is unlikely through mechanical or DASH methods.

Foss Reservoir

Foss Reservoir is part of the Sudbury Reservoir emergency system. This is a relatively shallow reservoir with numerous coves that has become heavily infested with Eurasian Watermilfoil. Nutrient inputs from its small urbanized watershed support the plant's growth.

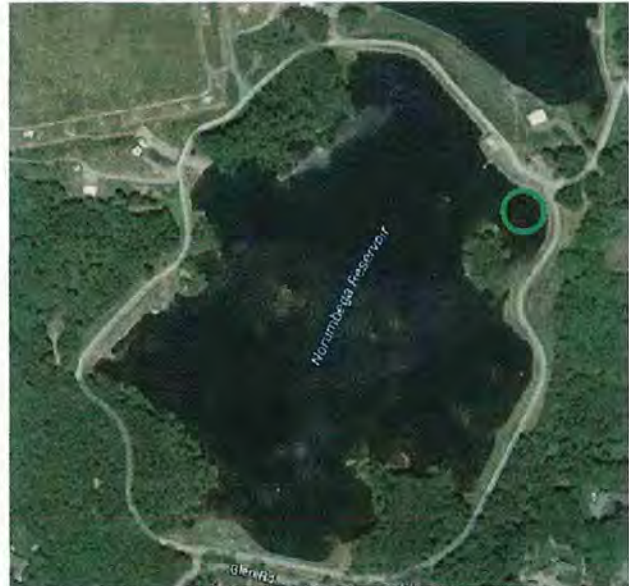
Staff are conducting a ten-foot winter drawdown this season in an effort to freeze and desiccate this plant and its roots. The drawdown has exposed about 87 acres of reservoir bottom (yellow dots in the photo below). This elevation will be held until adequate freezing conditions occur, and core samples show the freeze has penetrated the roots. After this has been achieved, the normal elevation will be returned.



Additionally, in 2015, a small patch of Water Chestnut (approximately 1,000) plants was found in Foss Reservoir. Early detection allowed staff to re-deploy a contractor to hand-pull the patch. A follow-up survey later in the season found just 55 plants. This area will continue to be monitored.

Norumbega Reservoir

Norumbega Open Reservoir is an emergency distribution reservoir. In 2015, a small pioneering colony of Eurasian Watermilfoil was discovered in a cove near the gatehouse (see circle in photo to the right). Staff were able to dispatch a contractor dive team to remove these plants. This site will continue to be monitored for any re-growth during future surveys.



Chestnut Hill Reservoir

Chestnut Hill Reservoir is an emergency distribution reservoir last used in May 2010 during the Shaft 5A water main break. In 2007, a Eurasian Watermilfoil infestation was observed to be extremely heavy in this small reservoir with dense plants topping out at the water surface in several areas.



Historical control efforts here have included mechanical harvesting since 2008, typically twice per season. Winter drawdowns were started in 2010 to expose, freeze, and desiccate the plants and roots with some success. Mechanical harvesting yields have decreased significantly over the last several years, with no harvest required in 2015.

Given the limited presence of Eurasian Watermilfoil along the western reservoir perimeter (seen in red in the photo to the right), a limited winter drawdown of five feet is being performed this season to expose, freeze, and desiccate these plants.

Other Emergency Reservoirs

As of late fall 2015, when the last system-wide survey was completed, no aquatic invasive plants have been found in the remaining three emergency distribution reservoirs: Weston Reservoir, Spot Pond, and Fells Reservoir. However, with changes in climate and weather patterns, and migratory bird stopovers, the risk for new invasives is increasing. MWRA will continue to adjust as the threats change. Staff remain watchful for other species that could create problems.

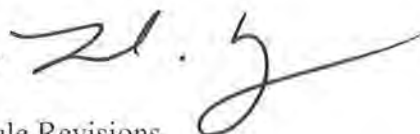
The next annual reservoirs-wide survey contract will commence on July 1, 2016. A key directive in the survey contract is that if any new or expanded aquatic invasives are discovered, it is brought to the immediate attention of MWRA staff, and mechanisms are in place, such as dedicated additional surveys and diver hand-harvesting hours, to rapidly respond. Ongoing harvesting and control efforts will commence at the reservoirs in late July 2016 and will carry on through November 2016. The Stillwater DASH contract work will commence in May 2016 and continue through November 2016.

BUDGET/FISCAL IMPACT:

The FY16 CEB includes \$514,000 for MWRA's reservoirs aquatic invasives control and monitoring program.

STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: January 13, 2016
SUBJECT: Update on Potential Lead and Copper Rule Revisions



COMMITTEE: Water Policy & Oversight

X INFORMATION
VOTE

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


Michael J. Hornbrook
Chief Operating Officer

The Environmental Protection Agency's National Drinking Water Advisory Council recently provided a series of recommended changes to the Lead and Copper Rule to EPA after a several-years-long stakeholder involvement process. The significant recommended changes include: improving the public education aspects of the rule to help customers identify and respond to any risks due to lead in their own home plumbing, especially lead service lines; establishing a requirement that all systems with lead service lines create a long-term program to work with their customers to completely replace all lead services; and revising the current sampling programs to focus sampling efforts on providing individual customers with information that they can use to identify and reduce risks in their homes. Across the MWRA system, communities with substantial numbers of lead services could face a long-term cost totaling at least \$60 to \$100 million (split between the water systems and property owners) to replace them. EPA will be considering these recommendations as it develops draft revisions to the rule over the next year or so; final revisions could be completed as soon as 2017, with compliance beginning three years later. This staff summary provides a more detailed discussion on the proposed changes and their potential impacts to MWRA and its customer communities.

RECOMMENDATION:

For information only.

BACKGROUND AND SUMMARY:

As reported previously, the Environmental Protection Agency (EPA) continues to review the Lead and Copper Rule (LCR) and is expected to propose a number of substantial changes. EPA's review was initiated in 2004 after the extensive news coverage of elevated lead levels in Washington DC, and the realization that more recent research called some of the key assumptions of the original 1991 LCR into question.

EPA was able to make a number of simpler changes to the Rule in 2007, but re-opened the stakeholder process to attempt to resolve several of the thornier aspects of the existing Rule in 2014. EPA chartered a working group of the National Drinking Water Advisory Council (NDWAC), with members representing a wide variety of interests including water systems, rate payer and public utility commission groups, child health and environmental advocacy groups, local health agencies, and state drinking water regulators. The stakeholder process extended from

early 2014 to late 2015, and a draft report was presented to the NDWAC itself in November 2015. MWRA's Director of Planning and Sustainability, Stephen Estes-Smargiassi, participated in the NDWAC working group advising EPA on these issues. The full NDWAC unanimously accepted the report in its entirety, emphasizing key points on the need for EPA to collaborate with other federal agencies for a more holistic approach to all lead risks, work to identify additional financial resources to support both water systems and homeowners, and assist in outreach to public health agencies and health professionals to facilitate clear messaging on the issues of lead corrosion and health risks.

The NDWAC report outlines policy approaches, not detailed rule language. EPA will use the recommendations from the NDWAC, along with more recent research and data, as well as recent national experience (both good and bad) to draft a revised Lead and Copper Rule and supporting documentation. Optimistically, EPA could be expected to issue a draft rule some time in 2016, with a final rule to follow most likely in 2017. Compliance would be required beginning three years later. EPA is not obligated to develop a draft rule matching the recommendations, but considering that EPA requested the advice from the statutorily-created NDWAC, it is likely that many elements will be incorporated into at least the draft proposed rule.

The principal recommendations of the National Drinking Water Advisory Council to EPA on how the Lead and Copper Rule should be revised are summarized here, and discussed individually below¹:

1. Establish more robust public education requirements for lead and lead service lines by adding targeted outreach directly to consumers with lead service lines and other vulnerable populations (pregnant women and families with infants and young children), updating the Annual Water Quality Report (a.k.a. "Consumer Confidence Report" or "CCR"), and increasing the information available to the public, health officials, and water system managers;
2. Require proactive long-term lead service line replacement programs which set replacement goals, effectively engage customers in implementing those goals, and provide improved access to information about lead and lead service lines, in place of current requirements in which lead service lines must be replaced only after a lead Action Level exceedance;
3. Modify monitoring requirements to provide for consumer-requested tap samples for lead and to utilize these results to inform consumer actions to reduce the risks in their homes, to notify the local public health agency when results are above a designated household action level, and to assess the effectiveness of corrosion control treatment and/or other reasons for elevated lead results;
4. Establish a health-based, household action level that triggers a report to the consumer and to the local health agency for follow up;
5. Strengthen corrosion control treatment by retaining the current rule requirements to re-assess corrosion control treatment if changes to source water or treatment are planned, adding a requirement to review updates to EPA guidance to determine if new scientific information warrants treatment changes; and
6. Separate the requirements for copper from those for lead and focus new requirements for copper only where water is corrosive to copper.

¹ The summary text is closely paraphrased from the report. The more detailed discussion that follows is somewhat simplified and tailored to MWRA's circumstances, with less detail on recommendations that will not affect MWRA or MWRA-served communities.

DISCUSSION:

The recommendations by the National Drinking Water Advisory Council represent a substantial redirection of key aspects of the current Lead and Copper Rule. The working group and the NDWAC itself came to the conclusion that minor "fixes" to portions of the existing rule might actually represent a step backwards, and certainly would be a significant missed opportunity to respond to new understanding of both the risks of lead release and the role of even small lead exposures to children during their development.

Each of the principal recommendations for the revised rule is discussed below, with an assessment of the likely impact on MWRA, MWRA communities, and property owners with lead service lines if EPA were to incorporate the provisions into the revised Lead and Copper Rule². MWRA staff will track the development of the revised Lead and Copper Rule and will work with the MWRA Advisory Board to continue to provide information and training to community staff on the likely new requirements.

- 1.) Establish more robust public education requirements for lead and lead service lines, adding targeted outreach to consumers with lead service lines and other vulnerable populations (pregnant women and families with infants and young children), updating the Consumer Confidence Report (CCR), and increasing the information on lead in water risks available to the public, health officials, and water system managers.

The current rule requires a simple standard message on lead in the Annual Water Quality Report and a mailing to all customers when the 90th percentile of water systems lead sampling results is above the Action Level of 15 ppb³.

A recurring theme in communities with highly publicized lead-in-water issues is that customers do not feel that they were adequately informed about the risks and ways to minimize them. This is due, in part, to the prevailing view of many local public health officials that lead paint and lead dust are the most important sources, and thus, much of the existing outreach materials on lead focus on those sources. However, it has become clear that in any home with lead containing plumbing, especially those with lead service lines, water can become a sudden and unnoticed source of high lead levels.

The service line is the small-diameter pipe that connects the water main with a customer's building. Typically, the water system owns the portion of the line in the street, and the property owner owns the portion on private property⁴. Many communities, including those in the MWRA service area, have had programs to remove the utility-owned portion of the lead service line, and usually offer to have the customer replace their portion at the same time. Unfortunately, customers may not be motivated to remove the portion on their private property, leaving a source of lead in contact with the water. When the Lead and Copper Rule was first issued in 2001, these "partial lead service line replacements" were considered useful in removing some portion of the

² There are many more minor recommendations contained in the report, and it is anticipated the EPA will also update other portions of the Rule not specifically discussed in the NDWAC report, but these six items are the most significant.

³ The current rule allows up to ten percent of the homes sampled to have results above the Action Level, regardless of their levels. This often presents a communication and public confidence issue.

⁴ In some cases, the entire service line is privately owned, with no water system responsibility.

lead, with the expectation that the reduction in lead levels would be proportional to the lengths removed. However, recent research shows that this is not the case, and that partial replacement (and perhaps any disturbance of the lead service line) actually causes lead levels to increase for an extended period, without a later long-term reduction in levels. Health activists in a number of communities have argued for more aggressive public education particularly focused on the need to entirely remove any lead service lines, and to prohibit partial replacements.

The NDWAC recommendations call for more targeted outreach directly to customers whose homes have or may have lead service lines, as well as more coordination of outreach with existing public health education programs. Water systems would need to identify every home that may still have a lead service line, and do periodic outreach to those customers informing them of the risks of having a lead service line, and providing information on how to have it replaced. Another important aspect of the recommendations is a call for EPA to establish a “national clearinghouse” website with information on lead in water, with examples of successful educational materials, videos, translations, templates, etc. to make it easier for water systems to develop and implement an effective outreach program. The recommended education requirements also suggest minor revision to the language on lead in the Annual Water Quality Report adding some emphasis on the risk of having a lead service line, how to determine if the home has one, and recommending that the homeowner remove it.

MWRA already has an extensive library of material on lead on its website, and has conducted outreach for many years. MWRA’s Annual Water Quality Report could be easily modified to meet the new requirements and many other areas of outreach could be made more robust relatively easily, particularly if EPA provides additional materials in a clearinghouse website.

MWRA communities with lead service lines will be required to conduct much more directed outreach efforts to those customers. MWRA can assist with the development of standardized materials, as has been done in the past, but identifying the specific addresses with lead service lines and actually doing the outreach will fall to the communities.

2.) Require proactive long-term lead service line replacement programs, which set replacement goals, effectively engage customers in implementing those goals, and provide improved access to information about lead service lines, in place of current requirements in which lead service lines must be replaced only after a lead Action Level exceedance.

The current Lead and Copper Rule does not require that lead service lines be replaced unless a system is over the lead Action Level. The vast majority of communities do not exceed the Action Level. If a community is over the lead Action Level, then it must replace seven percent per year for the period that it is over the Action Level. This represents essentially a 15-year replacement program, but only if the system was unable to come back under the Action Level. In most cases, the community comes back under the Action Level within a year, and the replacement program ceases.

Under the current Rule, a community is allowed to take credit even if it removes only the public portion of the lead service line. Because the community must begin the replacement program in a hurry when it exceeds the Action Level, many of these programs do not have effective outreach or a financial assistance component to encourage homeowners to participate, and the program ends up doing almost all “partial replacements” – only the public portion in the street. With

current knowledge of the increased risk of lead release from a partial replacement, the NDWAC concluded that essentially having the LCR force partial replacements was not appropriately protective of public health.

A related concern is that having any lead in contact with water, especially the amount of lead in a lead service line, represents a risk that a disturbance, either physical or in water quality can result in a sudden release of lead. Changes in source water, changes in treatment (perhaps to comply with some other new rule), or work in the street can cause lead release. Thus, a system with lead services always has the potential of unexpected lead release. This is the current situation in Flint, Michigan, where a switch of source and treatment resulted in substantial releases of lead, increases in children's blood lead levels, and local, national, and international media attention. While the changes may have been ill-considered, had there been no lead service lines, there would have been a substantially lower resulting health risk. Similar issues have received substantial public attention in Providence, Chicago, Washington DC, and Greenville, North Carolina.

The NDWAC recommendations recognize the dual goals of reducing the amount of lead in contact with water and reducing the frequency of partial lead service line replacements, by recommending that every water system with lead service lines begin a long-term program to identify and remove all lead service lines. Key elements of the recommendation are that it focuses on complete removal of both the water system and the customer's portions of the lead service line; that the program recognizes that customers need to be informed of the risks of having a lead service line and invited to work with the system to remove it; and that ownership, legal responsibility, and ability to pay will vary by system and thus, the regulation will need to have substantial local flexibility. The recommendations lay out a 30-year program with intermediate removal goals every three years⁵. Initially, the replacement goals are for five percent removal each year, but the goal will decrease over time recognizing that the difficulty will increase. The replacement goals themselves are not enforceable, but an adequate outreach effort during each three-year period is. If a system falls behind on the replacement goals, then the outreach effort must be stepped up.

If a property owner chooses not to participate and remove their portion of the lead service line, that property remains in the lead service line inventory and the system must continue to provide periodic outreach to encourage replacement. The NDWAC discussion on this issue assumed that ownership or family circumstances would change over time and eventually the property owner would want to replace the lead service.

Partial replacements are discouraged, but not completely prohibited. Exceptions are provided, for example, for replacing the public portion of a lead service line during water main replacement projects, even if the property owner is unwilling to replace their portion.

The NDWAC recognized that the recommendations call for a sustained and extensive public and financial commitment to the replacement program, and explicitly called for EPA and other stakeholders to work to identify and implement additional financial and outreach resources. For

⁵ The recommendations include incentives for developing a better inventory of homes with lead service lines by allowing credit for determining that a home which was initially believed to have a lead service line actually does not. This will make it somewhat easier to meet the earlier year's goals, and more importantly provide better information for customers.

example, some current federal programs that provide resources for lead paint removal in a home or apartment do not allow those funds to be spent on lead service line removal. Thus, a local health agency might spend \$30,000 on lead paint remediation in a home, but leave the lead service line in place as a potential source of lead poisoning. Other suggestions for ways to eventually facilitate replacements are local or state requirements for either notice or replacement upon property transfer, similar to current lead paint notice requirements, and failing septic system upgrade requirements.

The Boston Water and Sewer Commission's (BWSC) Lead Replacement Incentive Program has been held up nationally as an example of an effective customer engagement and financial assistance program to encourage homeowners to replace their portion of the lead service lines. BWSC has an interactive map on its website identifying properties with lead service lines, provides a \$1000 credit towards the cost of replacing the private portion of the lead service line, and finances the rest at no interest over 24 months, payable on the water bill.

There is no direct impact of this recommendation to MWRA. However, many MWRA communities have lead services, and would be required to develop programs and funding to replace them. MWRA's current Local Water System Assistance Program, which provides zero interest loans to communities for certain water system upgrades, already allows for both public and private-side lead service line replacement as an eligible expense, and some communities have used the funds for that purpose.

MWRA communities report having at least 20,000 lead service lines out of a total of approximately 430,000. However, it is not clear how service lines that were partially replaced have been accounted for, or if communities have a good inventory of the portion of the service line on private property. Those which do not have a good inventory will need to work to determine where there are either public or private lead service lines. Assuming 20,000 lead service lines and a typical cost of \$3000 to \$5000 per service line (both public and private sides), the total long-term cost of full replacement is likely to be at least \$60 to \$100 million spread over 30 years, split in some way between the local water system and homeowners.

3.) Modify monitoring requirements to provide for consumer-requested tap samples for lead and to utilize these results to inform consumer actions to reduce the risks in their homes, to notify the local public health agency when results are above a designated household action level, and to assess the effectiveness of corrosion control treatment and/or other reasons for elevated lead results.

The current LCR requires sampling of water which has been stagnant for a specified number of hours from targeted homes, primarily those with lead service lines or lead solder. MWRA and its communities sample at about 450 homes each sampling round. It is one of the more complicated sampling programs that a water system undertakes, requiring identification of homes which meet all the criteria, soliciting a volunteer homeowner, and coordinating sample bottle drop off and collection, and frequently re-collection if the detailed instructions are not followed by the volunteer. Keeping an active group of qualified volunteer samplers represents a significant effort for most water systems. Simplifying this program was one of the objectives of many of the NDWAC working group members.

In addition to the operational difficulty of the current sampling program, the sampling provides relatively little value to the individual homeowner. Systems are required to sample at the same

homes over and over, and few homeowners actually would consume the stagnant water that is the target of the sampling, so the sampling does not provide useful information that consumers can use to assess and reduce their actual risk.

The NDWAC recommendations are to create a new customer-centered sampling program to replace the current system. Customers would be invited to take samples in their homes. These samples could be taken using one of several sampling protocols designed to provide useful information that that particular customer was interested in having to understand the actual risks in their own home. All customers would be eligible, but homes with lead services targeted. Samples could be similar to the current stagnant first-flush but could also include a sample of water that a customer would be likely to actually drink or cook with, or could include a sample designed to see what the lead levels of water likely to be in contact with the service line were. The minimum required number of samples over a three-year period would be similar to that required under the current rule, but actual numbers could be greater if there is substantial public interest.

MWRA currently coordinates and provides laboratory services for fully-served communities' compliance sampling under the LCR. Assuming MWRA continued to provide laboratory services for lead sampling, depending on the level of public interest, MWRA's total effort might or might not change significantly, but samples would be spread out over the course of the year, rather than coming to the lab over a several-week period as they do now. The NDWAC recommendations are silent on whether the samples would be required to be offered free or at cost.

MWRA communities would be able to offer more robust customer service by offering samples to any customer and by allowing the customer to collect useful information. Rather than the difficult effort to solicit and coordinate volunteer samplers with a current narrowly proscribed sampling program, they would be free to provide assistance throughout the year to any customer. MWRA and the communities would need to do additional outreach, and create additional procedures to manage the process and to track the number of samples collected against the requirement over the extended three-year period.

4.) Establish a health-based, household action level that triggers a report to the consumer and to the local health agency for follow up.

This recommendation is an entirely new concept for the Lead and Copper Rule. Almost all EPA rules contain a "Maximum Contaminant Level" or MCL which is health-based. The LCR is a "Treatment Technique" rule with Action Levels: if measured levels are above the Action Level, specific required actions are triggered. The existing lead Action Level is not and was not intended to be a health-based threshold; rather, it was designed to be a practical level that corrosion control treatment could achieve. This has frequently confused consumers. In addition, the existing rule has no mechanism to provide the data on lead levels in a specific home to the local health agency.

As a companion piece to the recommendation shifting to customer-based sampling, this NDWAC recommendation requires that any lead levels above an EPA-established "household action level" be forwarded to the local health agency for its use. The NDWAC recommended that the household action level be set at a level which would potentially raise the blood lead level

of a healthy bottle-fed infant to the Centers for Disease Control and Prevention (CDC) concern level. What actions would then occur is up to the local health agency. The health agency would not be required to take any specific action, but the assumption is that an investigation similar to that currently triggered by an elevated blood lead level would likely be undertaken.

Based on the information available to several members of the working group, the household action level would likely be set at a level between two and four times above the current lead Action Level. However, until EPA undertakes the required modeling and peer review, this is still only speculation.

Communities already provide all, sample test results directly to the affected customer. This recommendation would add an additional notification for those results over the new trigger. Over the past five years, using the current sampling protocol, only one to three samples would have been over the assumed likely household action level each year.

A staff member from the Boston Public Health Commission was also on the NDWAC working group, and indicated during the discussions that this approach was both useful and workable for the Boston Public Health Commission. The Boston Public Health Commission already does water tests at any home where a child has elevated blood lead levels.

5.) Strengthen corrosion control treatment, retaining the current rule requirements to re-assess corrosion control treatment if changes to source water or treatment are planned, adding a requirement to review updates to EPA guidance to determine if new scientific information warrants treatment changes.

The current LCR has clear requirements to review and optimize corrosion control treatment if lead levels are above the Action Level (and for large systems in any case) and for all systems to analyze and determine if changes in treatment or source water might affect lead levels. Nevertheless, this issue has garnered substantial interest from activists and some EPA technical staff who feel that some systems are not doing enough to minimize lead levels. Incidents like the increase in lead levels after Washington DC switched disinfectants in 2003, and when Flint, Michigan recently switched source and treatment have served as a cautionary note on assuming that corrosion control treatment is always stable and continues to be effective.

The NDWAC recommendations focus on having systems with corrosion control manage it better with more modern use of process control data; on reaffirming and underlining the importance of a thorough review by both the system and the state regulator when source water or treatment changes are contemplated; and on a periodic review of whether treatment can be tightened up based upon the most current understanding of corrosion control science, as triggered by EPA's publication of updated guidance manuals.

It is not expected that these recommendations will have a substantial impact on MWRA's treatment or master planning for corrosion control, as MWRA practices almost everything recommended already. If at some point in the future the current science suggested a re-evaluation of the type of treatment MWRA practices, those changes would be carefully evaluated, and if appropriate for the complex MWRA/community water system, incorporated into

*master plans and the Capital Improvement Program. Nothing currently points toward such a need today.*⁶

- 6.) Separate the requirements for copper from those for lead and focus new requirements for copper only where water is corrosive to copper.

The current Rule requires that water systems sample for copper at the same sites and frequency as for lead, but the required sampling site selection is designed to identify homes with a higher risk for lead corrosion – those with lead services or of an age to have lead solder joints. However, in waters where copper corrosion occurs, it is typically only a problem for new copper plumbing, as the copper will passivate over time, creating a non-soluble layer between the metal and the water. Thus targeting for copper corrosion should select sites with fresh copper plumbing such as newly constructed or newly renovated homes. Therefore, systems with copper corrosion are unlikely to find it through the current LCR sampling program.

EPA presented the NDWAC working group with rule options which included creating a wholly new sampling program for copper with sites with fresh copper plumbing. This would require a substantial degree of coordination between water and building departments with new sampling sites located, and new volunteer samplers solicited and trained for each sampling round. In many cases, system water chemistry is such that copper corrosion is very unlikely even in new homes, thus, such a new and difficult sampling program would likely never disclose a problem. The working group felt that this would impose a burden without commensurate public health benefit.

The NDWAC recommended to EPA that the revised rule set up criteria or “bins” for non-corrosive water based on simple water quality parameters. Systems with non-corrosive water would simply have to demonstrate that those water quality parameters had not changed over time; no sampling for copper would be required. Water systems whose water was likely to be corrosive would be required to provide public educational materials to new customers, and to new and newly renovated homes.⁷

No impact to MWRA is expected. MWRA water will definitely fall into the non-corrosive to copper bin, and it is expected that most or all of MWRA's partially-served communities will, as well. As EPA develops the details of this portion of the rule, MWRA staff will reach out to the partially-served communities to assist them in evaluating their water quality parameters.

Next Opportunities to Influence Rule Development and to be Prepared for Implementation

MWRA staff will continue to work with the American Water Works Association and the Association of Metropolitan Water Agencies, as well as the Water Research Foundation on research, data, and information to help EPA focus on key areas, to help develop reasonable and successful approaches for community compliance, and to be prepared to comment on the draft regulations when they are issued.

⁶ MWRA currently adjusts the pH and alkalinity of the water to reduce its corrosivity. At the time that treatment was selected in the mid 1990s, MWRA also evaluated the alternative treatment process of adding phosphate to the water. For a number of reasons, phosphate was not selected, including the potential environmental impacts of increased phosphate loadings, and compatibility with other aspects of drinking water treatment, such as the need for stability of chloramine residuals.

⁷ Systems could choose to periodically send the required information to all customers if that was simpler or more effective than targeting homes with new copper.

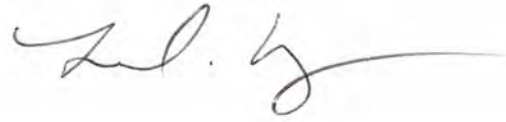
Staff will coordinate with the MWRA Advisory Board to continue to work with MWRA communities over the next several years to assist them to be prepared for the new rule by developing better inventories and beginning to develop local plans and support for lead service line replacement. Staff have been providing updates on the LCR revision process since 2004 during regular community training sessions, and will continue to do so as the rule is finalized.

BUDGETING/FISCAL IMPACT:

There will likely be relatively little direct financial impact on MWRA if the revised Rule is issued along the lines of the NDWAC recommendations. However, MWRA communities with lead services will be obligated to begin a long-term program of lead service line removal which could cost as much as \$100 million over the next three decades (split between the water system and property owners). MWRA staff will work with the Advisory Board to evaluate whether to recommend extending the the Local Water System Assistance Program, which currently allows zero-interest loan funding, to facilitate community lead service line replacement efforts.

STAFF SUMMARY

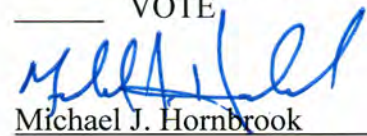
TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: January 13, 2016
SUBJECT: Report on 2015 Water Use Trends



COMMITTEE: Water Policy & Oversight

X INFORMATION
 VOTE

Carolyn Fiore, Deputy COO
Daniel Nvule, Senior Program Manager
Stephen Estes-Smargiassi, Director, Planning
Preparer/Title


Michael J. Hornbrook

RECOMMENDATION:

For information only. Each January, staff provide the Board with a review of the previous year's water use data and discuss trends.

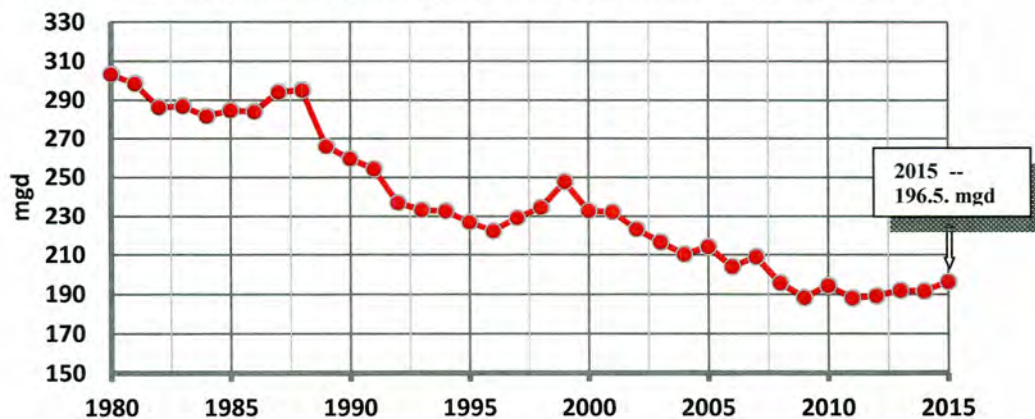
DISCUSSION:

Calendar Year 2015 water use and reservoir withdrawals were slightly higher than in 2014. The largest component of the increase was in seasonal or outdoor water use due to the overall dry conditions in 2015. The very cold winter also increased demand due to some customers letting taps run to avoid freezing and also created leaking community distribution mains continuing into the summer and fall. Base or indoor demand also seemed to increase very slightly, possibly due to the improving regional economy and growing population out-pacing on-going incremental improvements to water efficiency from appliances and fixtures.

Water Consumption by MWRA Communities

Calendar Year 2015 water consumption by all MWRA communities of 196.5 million gallons per day (mgd) was about 4.8 mgd (2.5%) higher than 2014, as shown on Figure 1. Included is a reduction of 3 mgd by Cambridge and an increase of 0.5 mgd by Lynn as discussed on page 5.

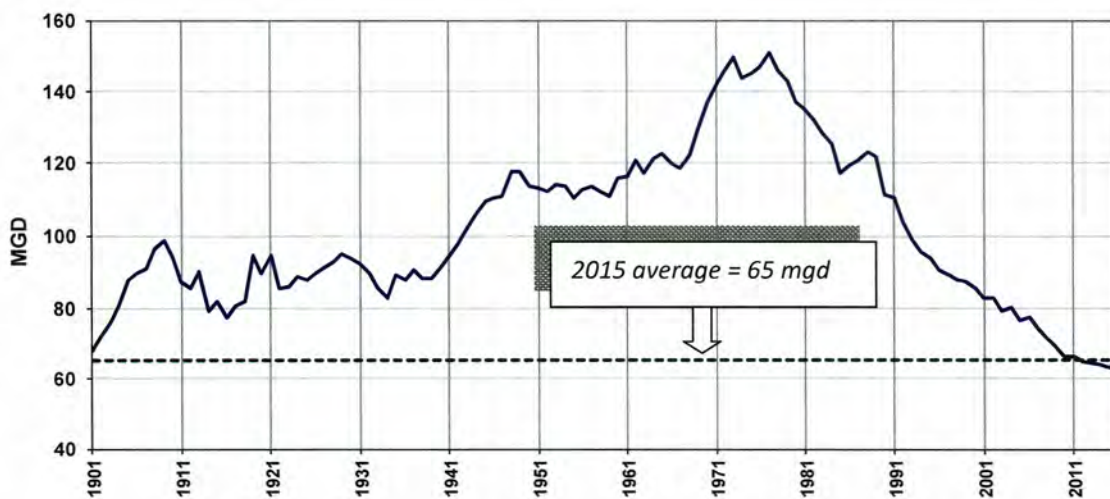
Figure 1 – Total Consumption by MWRA Communities (1980 to 2015)



Water consumption by MWRA’s fully-supplied communities increased slightly. Data for the last five years shows that the decline in indoor use has slowed down when compared to the long-term as discussed on page 3. System wide, 2015 had a maximum day demand of 293 mgd (6.9% higher than 2014) on September 9th. Christmas set the record for the lowest demand on MWRA’s system since the creation of the Authority at 146.4 mgd.

Demand from MWRA’s largest customer, Boston Water and Sewer Commission (BWSC), was 65 mgd, which is higher than last year by about 2.3 mgd (3.7%), but still at a level not seen since before 1900 (See Figure 2 below).

Figure 2: Boston Water Use 1900-2015

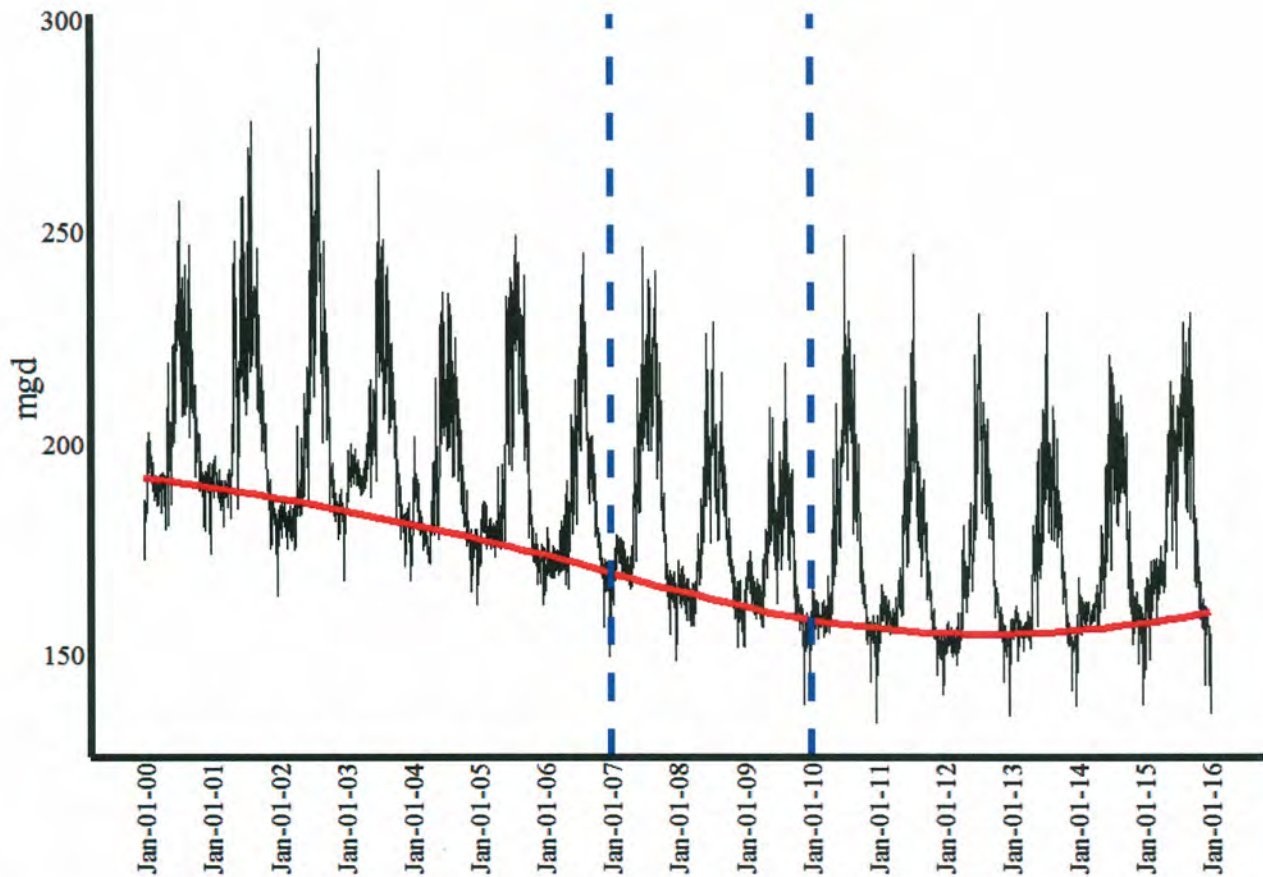


Base or Indoor Demand

Over time, water use reductions have been in both base use, defined as water use from November to March, and outdoor use (or seasonal use), defined as the increase over the base demand during the irrigation season of May to September. In reports prior to 2014, base use was shown as decreasing 1.8% (3 mgd) per year from 1999 to 2013. In 2014, staff refined the methodology for estimating base use in order to lessen the bias of older data and the more refined trend showed that there might be three separate regimes¹. As can be seen on Figure 3 on the next page, the results now show two decline regimes: 1999 to 2006 and 2007 to 2009 (steeper decline, corresponding to the economic recession). A third regime, post recession, showed a reduced rate of decrease last year, and shows a flattened or possibly slight increase in demand with the addition of this year’s data. The long-term trend of reductions in base use is believed to be generally due to increases in the efficiency of water use in homes and businesses as water-saving technologies continued to increase market share and consumers reacted to price increases, as well as reduced pipeline leaks. The improving regional economic and population growth also impacts base demand.

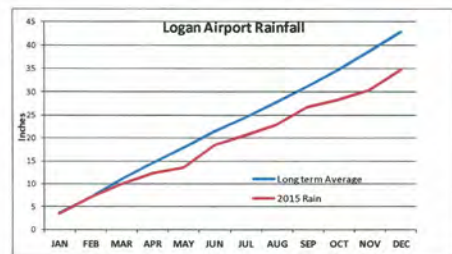
¹ A local regression (LOESS) method was used that assigns less weight to data that is further away from the local point.

Figure 3: Fully-Supplied Communities Demand (1999 to 2015)²



Seasonal or Outdoor Demand

Seasonal water use is more variable than indoor demand and driven in large part by weather during the irrigation season. Factors influencing seasonal use include the total irrigation season precipitation, the number of dry days between rainfall events, temperature, and the total amount of sunshine. Over time, water price also influences seasonal use.



Total rainfall during 2015 was below normal for most of the year with an accumulated 8-inch to 9-inch deficit by the end of the year (see inset Figure above). During the past 16 years, seasonal use in the fully-supplied communities has varied from a low of 12.7 mgd (7.5% of total use) in 2000 to 22.2 mgd (12.3%) in 2015, with an average of approximately 16.5 mgd (9%). Seasonal

² Certain analyses can only be done on fully-supplied communities where MWRA has information on their daily use available from MWRA’s revenue meters. MWRA receives data on monthly total use for partially-supplied communities but not until they provide that data to DEP in their Annual Statistical Reports in March. Fully-supplied communities represent almost 90% of the total annual demand.

use in 2015 was greater than that seen since at least 2000, on both a percentage basis and a flow basis; 5 mgd greater than 2014 and 7 mgd greater than 2013. Figure 3a below shows the impacts of the unseasonably cold winter temperatures and dryer summer on demand.

Figure 3a: Fully Supplied Demand (mgd) 2011 to 2015

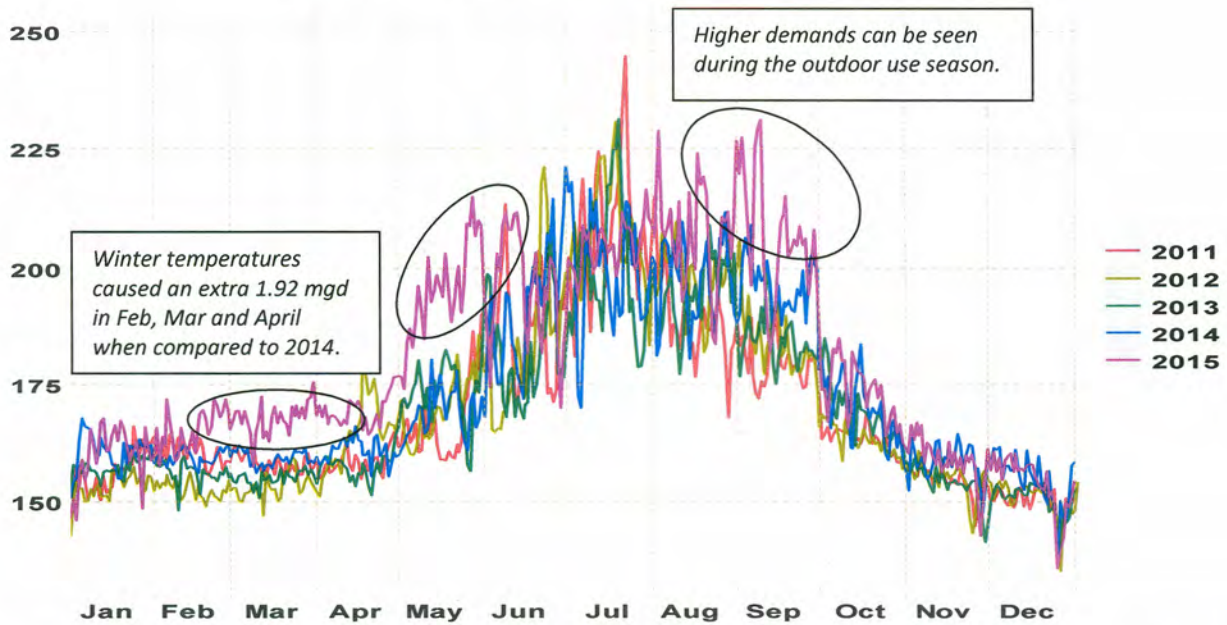


Figure 4 below shows the variation in seasonal water use over time, and Figure 5, on the next page, shows both the relatively small impact that seasonal demand has on total water use and the longer-term decline in both base and total use.

Figure 4: Fully-Supplied Communities' Annual Seasonal Demand (labels show demand in mgd)

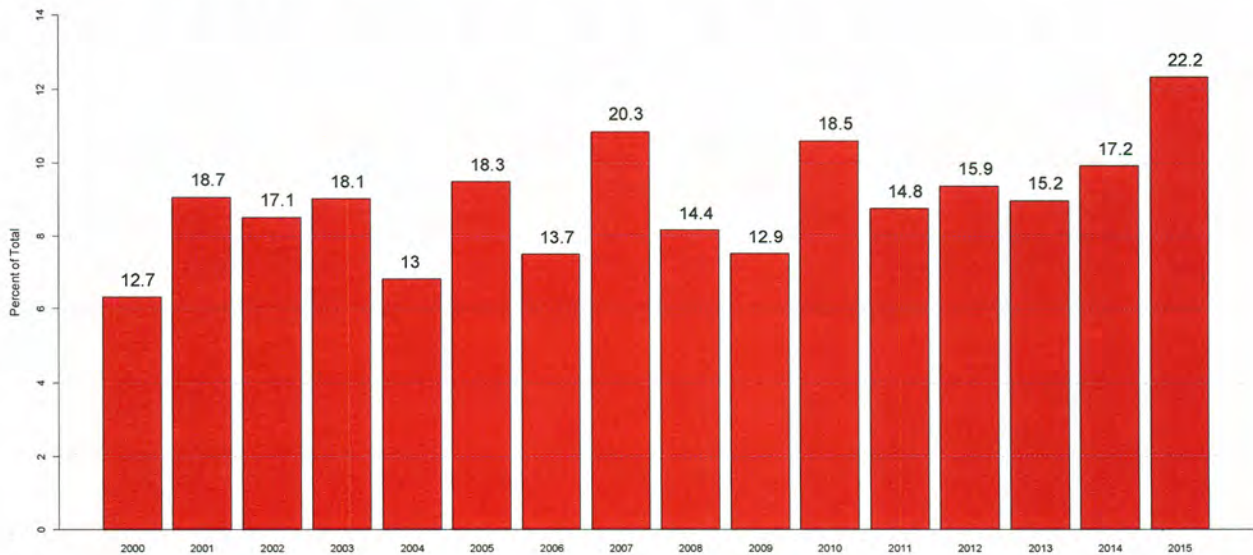
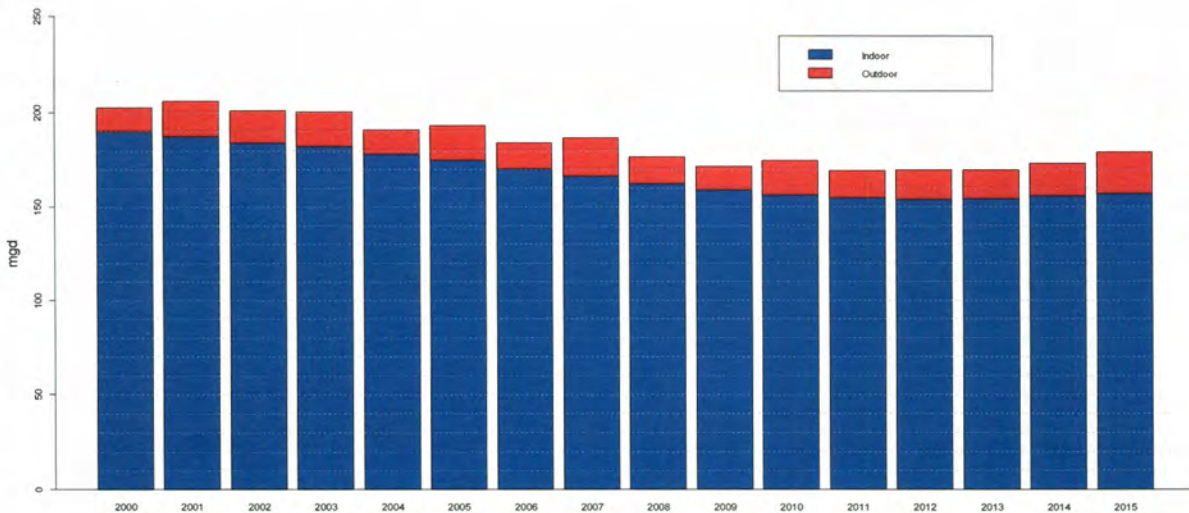


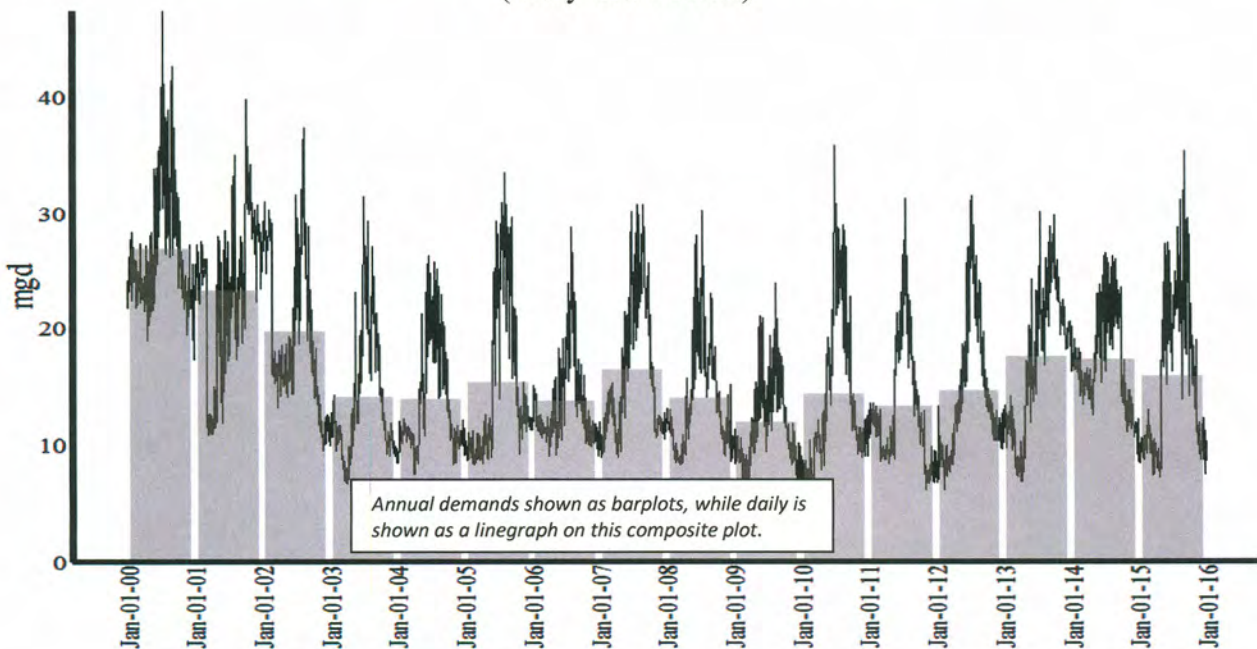
Figure 5: Fully-Supplied Communities Annual Base and Seasonal Demand



Partially Supplied Communities

Given the increase in seasonal use, staff examined the trend of MWRA sales to the partially-supplied communities. These communities generally use their local sources first, and use MWRA water for above what they can supply locally. The following figure shows a gradual upward post-recession trend in those communities. The bump up shown in the annual demands on Figure 5a below in 2013 and 2014 was due to the City of Cambridge withdrawing an average 3 mgd and 2.78 mgd in those years due to CSO and MWRA construction projects. In 2015, Lynn purchased an additional 0.5 mgd during the rehabilitation of a storage reservoir.

Figure 5a: Partially Supplied Communities – MWRA Supplied Demand (Daily and Annual)



Reservoir Withdrawals and Releases

Reservoir withdrawals are the metric used to compare to the 300 mgd safe yield of the watershed/reservoir system³. Withdrawals include water sold to MWRA communities, as well as other uses in the watershed and MWRA system. Total MWRA water withdrawals increased in 2015, from 202.6 mgd in 2014 to 206.74 mgd. Worcester's withdrawals from its reservoirs in the portion of the Wachusett watershed that it shares with MWRA were slightly lower in 2015 than in 2014, 5 mgd vs. 5.5 mgd. Over the past five years, total withdrawals have bounced around from 195 to 206.7 mgd, averaging 201.5 mgd.

Figure 6 below shows five-year averages of withdrawals from 1980 to present. The five-year averaging reduces the effects of year-to-year variability due to weather, and provides a good indication of longer-term trends. The average shows essentially no change from 2014. As the economy continues to stabilize and grow over the next few years, staff will monitor any changes in water use, to see if the longer-term downward trend resumes.

Figure 6: Total Reservoir Withdrawals – Five-Year Running Average 1980 to 2015

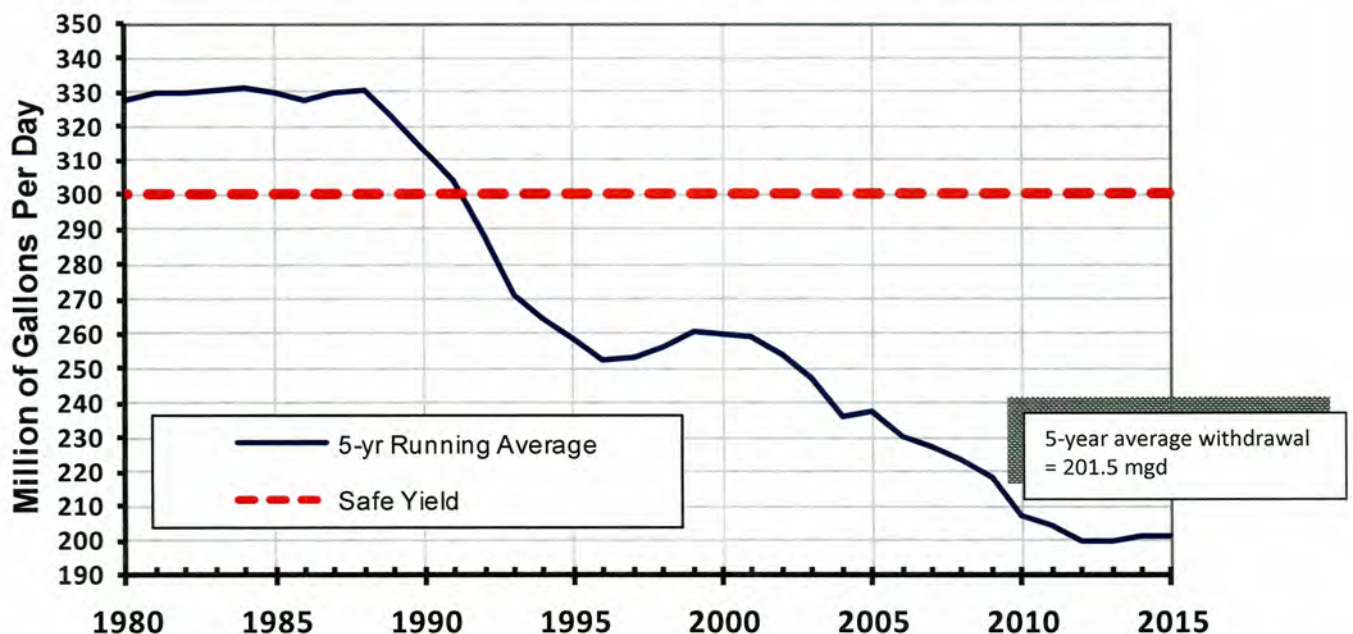


Figure 7, on the following page, shows Quabbin elevations and the amount of water spilled for the past 16 years. Reservoir storage remained within “normal operating range” as defined in MWRA’s drought response plan for the entire year. Quabbin spilled small quantities of water in 2000, 2001, and 2004. Significant spills occurred with the reservoir more than full for extended periods each year between 2005 and 2010 with the largest spills in 2006. During 2015, Quabbin spilled for 33 days for a total of approximately 169 million gallons (an annual average of 0.5 mgd). Wachusett recorded no spills in 2015.

³ The 300-mgd safe yield is based on the drought of the 1960s. Use of a less conservative 20-year recurrence drought, as allowed by DEP, would result in a safe yield as high as 350 mgd. MWRA’s Water Management Act registration is for 312 mgd.

Figure 7: Quabbin Elevation with Quabbin Spill Volumes⁴

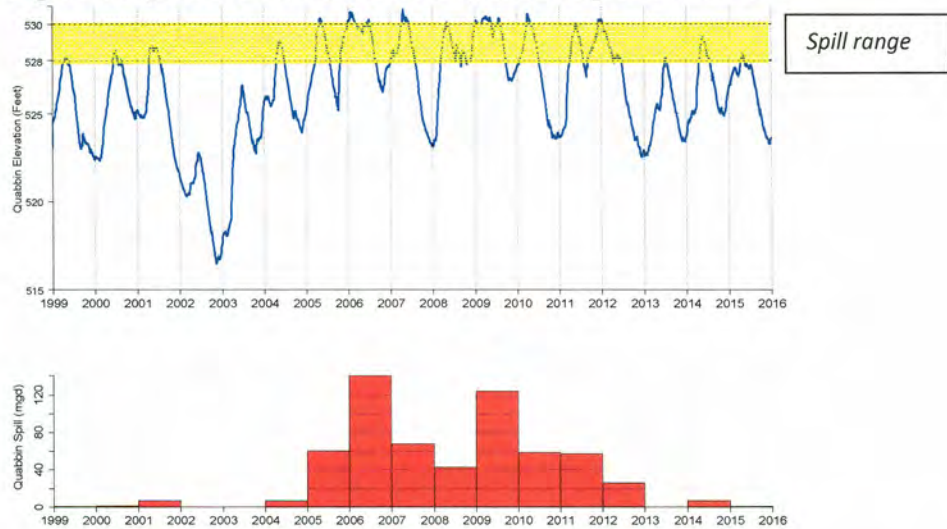
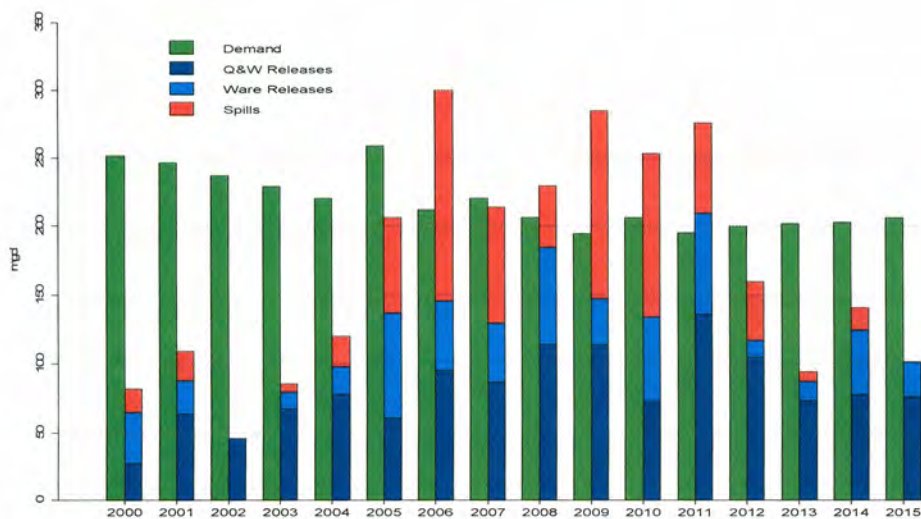


Figure 8 below compares the amount of water withdrawn to supply customer demand to the total amount of water spilled and released, including the spills at Quabbin shown earlier in Figure 7, water spilled or released to the Nashua River from Wachusett Reservoir, water released from Wachusett Reservoir to the Sudbury River through the Wachusett Aqueduct, and Ware River water, which could have been transferred to Quabbin but was not due to lowered demands. MWRA’s annual average releases and spills from the reservoir system have exceeded the amount of water withdrawn for water supply purposes five times in the last 16 years: 2006, 2008, 2009, 2010, and 2011. In 2015, with higher demand and significantly lower run-off from the watersheds into the reservoirs, demand was higher than reservoir spills and releases. The total of reservoir releases from Quabbin and Wachusett Reservoirs was 76 mgd, including mandated downstream releases of 26 mgd.

Figure 8: Withdrawals, Spills and Releases (Quabbin, Wachusett and Ware)



⁴ Quabbin spills can occur at elevations between 528 and 530 depending on stop-log use.

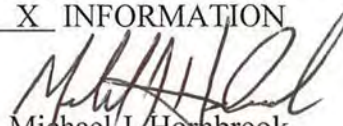
STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: January 13, 2016
SUBJECT: Wachusett Watershed Railroad



COMMITTEE: Water Policy & Oversight

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

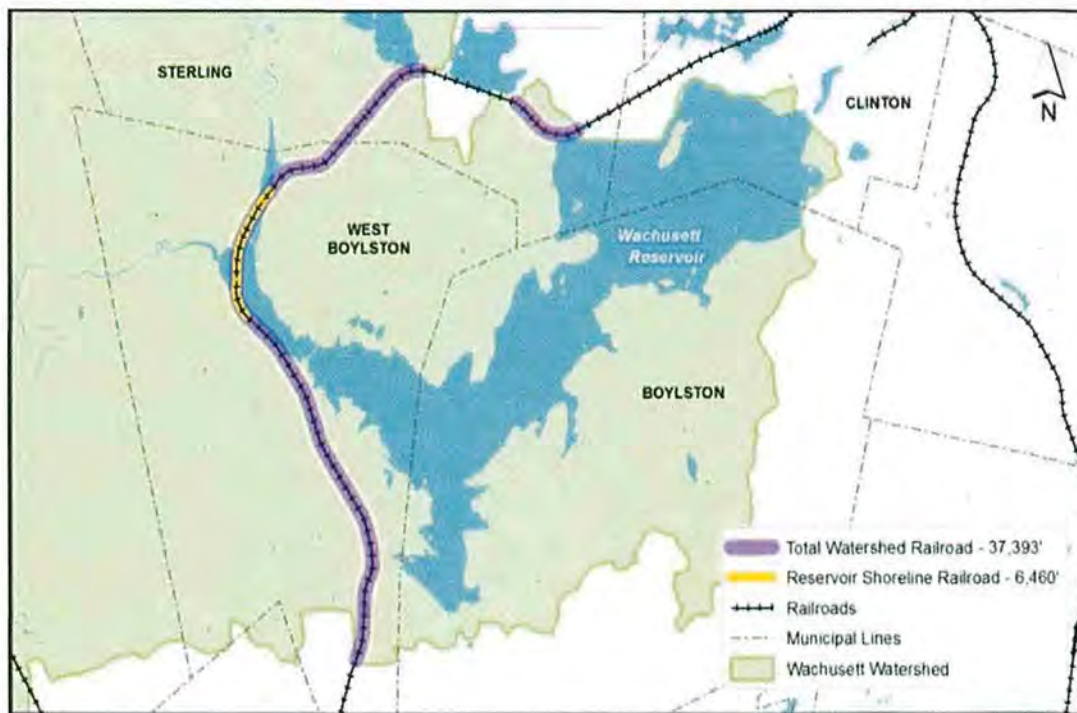
VOTE
 INFORMATION

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

For information only.

BACKGROUND:

Pan Am Railways' Worcester Mainline, an approximately 23.7-mile stretch of railroad that runs from Ayer to Worcester, Massachusetts, provides a link between the state's northern and southern freight rail systems. Approximately 7.6 miles of the Worcester Mainline is located within the Wachusett Watershed and at several points the track is immediately adjacent to or passes directly over the reservoir via circa 1870 arch bridges. There are also several stream crossings in the watershed (see figure below and attached photographs).



The location of these tracks within the watershed causes concern that a train derailment could result in railcars rupturing and their contents entering the water supply. MWRA and the Department of Conservation and Recreation (DCR) Watershed staff have been pursuing several avenues to understand, reduce, mitigate, and be able to respond to the risk associated with the railroad. These efforts have included tracking the types of cargos carried and investigating containment and treatment options for each one; maintaining an active spill response program, including equipment and training with local responders in the watershed; working with the railroad on train speed limits; and joint planning for emergency response.

MWRA and DCR Watershed (with other local, state and federal entities) have held two emergency railroad derailment response exercises to date, the most recent in October 2015, which also included PanAm Railroad representatives. It is clear that a derailment and release into Wachusett Reservoir could cause a major upset to the water supply system, both from its potential water quality impacts and loss of public confidence.

DISCUSSION:

One preventive avenue staff are investigating is to ensure that the track condition within the watershed is of the highest caliber. According to a 2012 article, “Analysis of Causes of Major Train Derailments and Their Effect on Accident Rates,” published in the Journal of Transportation Research Board, in which 4,352 Federal Railroad Administration (FRA) reportable accidents¹ were reviewed, five of the top ten reasons for derailments were related to the condition of the track. The track-related defects included broken rails or welds, track geometry (excluding wide gauge), wide gauge, obstructions, and buckled track.

The table on the right lists the top 10 causes of freight train derailments on mainline tracks. Overall, the condition of the track accounted for approximately 1,764 or 40% of the 4,352 derailments. The second leading cause of derailments was railcar or locomotive equipment failure, which accounted for 1,371 or 31.5% of the 4,352 derailments studied.

Given the recent high-impact, fuel-train derailments around the country, which have caused significant impacts, there has been a heightened concern related to the tracks within the Wachusett Watershed. Since there is a high correlation between track condition and derailments, staff began the process of reviewing ways to ensure that improvements to the track condition are made to reduce the risk of derailments.

Mainline Track		
Rank	Cause	Percentage
1	Broken rails or welds	15.3
2	Track geometry (excluding wide gauge)	7.3
3	Bearing failure (car)	5.9
4	Broken wheel (car)	5.2
5	Train handling (excluding brakes)	4.6
6	Wide gauge	3.9
7	Obstructions	3.5
8	Buckled track	3.4
9	Track-train interaction	3.4
10	Other axle of journal defects (car)	3.3

¹ Collisions, derailments, fires, explosions, acts of God, or other events involving the operation of railroad on-track equipment (standing or moving) and causing reportable damages greater than the reporting threshold for the year, currently set at \$10,500, must be reported to the FRA.

Although the current condition of the railroad that crosses the Wachusett Reservoir meets FRA track conditions and safety requirements, MWRA staff believe that because portions of the rail line run so close to critical areas of the reservoir, and because the consequences of a derailment could have significant impacts to water quality, the bar should be raised higher and there are improvements that should be made to bring the condition of the tracks to the highest possible standard. Ideally, the railroad itself would make all of these necessary improvements. However, because of the cost involved, coupled with the fact that the railroad already meets national FRA requirements, Pam Am Railways cannot be required to make these improvements.

Staff continue to explore additional options. As part of this process, staff met with representatives from the Massachusetts Department of Transportation (MassDOT), Rail and Transit Division, to discuss options to make improvements that would reduce the risk of derailments. MassDOT offered to have its consulting engineers perform an inspection of the railroad and provide a cost estimate for the improvements. After this inspection of the track, MassDOT provided MWRA with a cost estimate of up to approximately \$22.8 million to make significant improvements to the railroad within the watershed. This work would not only include improvements to the track structure and road crossings, but would also add sensors and other detection equipment to scan railcars and locomotives for defects. Identifying defects to the railcars or locomotives would help reduce the second leading cause of derailments identified in the study.

MassDOT's representatives indicated that typically when the Commonwealth makes substantial improvements to railroad tracks, it either takes or reserves the right to purchase the tracks. At that meeting, MassDOT indicated that the right to purchase the Worcester Mainline was negotiated as part of an agreement to allow the MBTA to run locomotives over the track during a construction project in Boston.

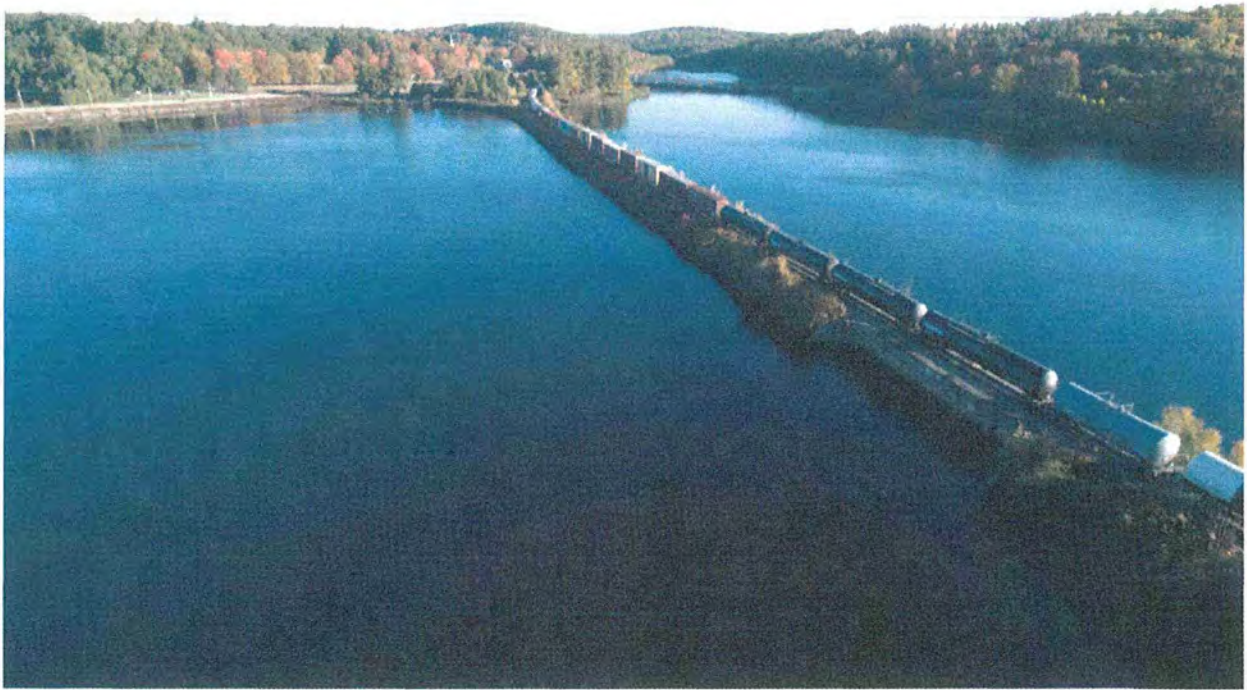
In order for a public agency to make the necessary improvements, the Worcester Mainline would need to be purchased by a public entity (MassDOT, MBTA, or MWRA). The public ownership of the line would allow for public investment in track improvements, increased control over maintenance activities, limitations on train speed, and inspections. The structure of the ownership of the tracks, and the arrangements that would allow MWRA to ensure the safety of the water supply, are still in the development phase.

MWRA has spent nearly \$140 million in land acquisitions for purposes of watershed protection. Staff believe that the potential purchase of the railroad right-of-way within the Wachusett Watershed, and making the necessary upgrades to the track, would translate into the most cost-effective preventive measure compared to the likely high cost to mitigate and remove any material resulting in a derailment into the reservoir.

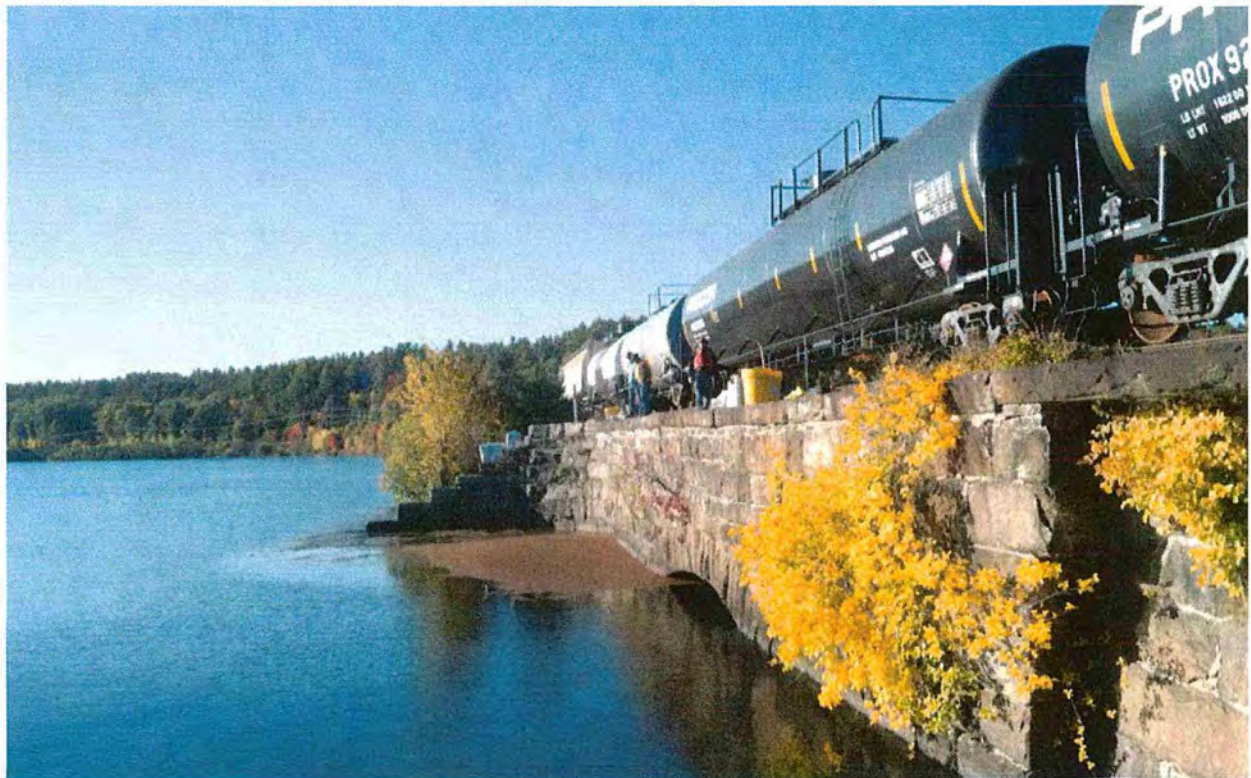
Staff are in the process of scheduling additional meetings with MassDOT to discuss the Worcester Mainline and will inform the Board of these discussions. Issues to be considered include ownership structure, liability, necessary track improvements and costs.

BUDGET/FISCAL IMPACT:

The cost estimate of \$22.8 million is based on a complete reconstruction of the railroad tracks (rail, ballast, ties, etc), grade crossings and the addition of train monitoring sensors in the 7.6 miles located within the watershed. This cost estimate will be refined as staff continue to review the condition of the track and what improvements will provide the highest level of protection to the watershed.



PanAm Railway's Worcester Mainline over Wachusett Reservoir at Quinapoxet Causeway During Emergency Response Drill in October 2015 (above and below)





Fire Department Staff Deploying Oil Containment Boom on Wachusett Reservoir During October 2015 Emergency Response Drill with Train in Background



Guard Rails Installed by PanAm Railway at Quinapoxet Causeway



MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

Telephone: (617) 242-6000
Fax: (617) 788-4899
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PERSONNEL & COMPENSATION COMMITTEE MEETING

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

to be held on

Wednesday, January 13, 2016

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

Time: Immediately following Water Comm.

AGENDA

A. Approvals

1. PCR Amendments – January 2016

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the
Personnel and Compensation Committee

December 16, 2015

A meeting of the Personnel and Compensation Committee was held on December 18, 2015 at the Authority headquarters in Charlestown. Chairman Cotter presided. Present from the Board were Ms. Wolowicz and Messrs. Blackmon, Carroll, Foti, Pappastergion, Pena, Vitale and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Mike Hornbrook, Karen Gay-Valente, and Bonnie Hale. The meeting was called to order at 11:40 a.m..

Approvals

***Appointment of Program Manager, Monitoring & Control**

The Committee recommended approval of the appointment of Mr. John P. Beckley to the above position (ref. agenda item A.1).

***Appointment of Deputy Chief Engineer**

The Committee recommended approval of the appointment of Mr. John P. Colbert to the above position (ref. agenda item A.2).

The meeting adjourned at 11:45 a.m.

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

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: January 13, 2016
SUBJECT: January PCR Amendment



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

 INFORMATION
 X VOTE
Michele S. Gillen
Michele S. Gillen
Director, Administration

RECOMMENDATION:

To approve the amendment to the Position Control Register (PCR) included in the attached chart.

DISCUSSION:

The Position Control Register lists all positions of the Authority, filled and vacant. It is updated as changes occur and it is published at the end of each month. Any changes to positions during the year are proposed as amendments to the PCR. All amendments to the PCR must be approved by the Personnel Committee of the Board of Directors. All amendments resulting in an upgrade of a position by more than one grade level, and/or an amendment which creates a position increasing annual cost by \$10,000 or more, must be approved by the Board of Directors after review by the Personnel Committee.

January PCR Amendment

There is one PCR amendment related to a change in staffing due to a retirement within the Finance Division.

The amendment is:

1. Reduction in grade and title change to a vacant position, Assistant Grants Manager, grade 11, to Sr Financial Analyst grade 10, to align position with current staffing needs and position responsibilities in Treasury.

This amendment requires approval by the Personnel and Compensation Committee.

BUDGET/FISCAL IMPACT:

The annualized budget impact of this PCR amendment is a cost savings of between \$8,701 and \$36,988, depending on the individual selected for the position upon the completion of the hiring process.

ATTACHMENTS:

New/Old Job Descriptions

**MASSACHUSETTS WATER RESOURCES AUTHORITY
POSITION CONTROL REGISTER AMENDMENTS
FISCAL YEAR 2016**

PCR AMENDMENTS REQUIRING PERSONNEL & COMPENSATION COMMITTEE APPROVAL - January 13, 2016

Number	Current PCR #	V/F	Type	Current Title	UN	GR	Amended Title	UN	GR	Current/Budget Salary	Estimated New Salary	Estimated Annual \$ Impact	Reason For Amendment
P13	Finance Treasury 4510042	V	T,G	Assistant Grants Manager	6	11	Sr. Financial Analyst	6	10	\$95,195	\$58,207 - \$86,494	-\$36,988 - -\$8,701	To align position with current staffing needs and position responsibilities in Treasury
PERSONNEL & COMP COMMITTEE TOTAL =					1		SUBTOTAL:					-\$36,988 - -\$8,701	
PCR AMENDMENTS REQUIRING BOARD APPROVAL- January 2016													
BOARD TOTAL =					0		SUBTOTAL:					\$0 - \$0	
GRAND TOTAL =					1		TOTAL ESTIMATED COSTS:					-\$36,988 - -\$8,701	



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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, January 13, 2016

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

Time: 1:00 p.m.

AGENDA

I. APPROVAL OF MINUTES

II. REPORT OF THE CHAIR

III. REPORT OF THE EXECUTIVE DIRECTOR

IV. BOARD ACTIONS

A. Approvals

1. PCR Amendments – January 2016 (ref. P&C A.1))

B. Contract Awards

1. Selection of Underwriters: Contract F237 (ref. AF&A B.1)
2. Agency-Wide Technical Assistance Consulting Services: Stantec Consulting Services Inc., Contract 7496 and Hazen and Sawyer, P.C., Contract 7497 (ref. WW A.1)
3. Sodium Hypochlorite & Sodium Bisulfite Tank Farm Rehabilitation, Design, Construction Administration & Resident Engineering Services, DITP: Stantec Consulting Services, Inc., Contract 6853 (ref. WW A.2)

V. CORRESPONDENCE TO THE BOARD

VI. OTHER BUSINESS

VII. EXECUTIVE SESSION

A. Litigation:

1. Cross-Harbor Cable – MA DPU Proceedings – Engagement of Outside Counsel and Expert Witness to Provide Professional Services

VIII. ADJOURNMENT

Meeting of the Board of Directors**December 16, 2015**

A meeting of the Board of Directors of the Massachusetts Water Resources Authority was held on December 16, 2015 at the Authority headquarters in Charlestown. Chairman Beaton presided. Present from the Board were Ms. Wolowicz and Messrs. Blackmon, Carroll, Cotter, Foti, Pappastergion, Pena, Vitale and Walsh. Mr. Flanagan 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 1:00 p.m.

APPROVAL OF MINUTES

Upon a motion duly made and seconded, it was

Voted to approve the minutes of the Board of Directors' meeting of November 18, 2015, as presented and filed with the records of the meeting.

REPORT OF THE EXECUTIVE DIRECTOR

Mr. Laskey reported the sad news of the passing that morning of David Whelan, MWRA Budget Director. He and Board members reflected on his intelligence, strong work ethic, depth of knowledge of all aspects of the Authority's budgets, wit, family values and community activism in his hometown of Charlestown.

Upon a motion duly made and seconded, it was

On behalf of the MWRA Board of Directors, voted to send an expression of sympathy to the family of David Whelan.

REPORT OF THE CHAIR

Mr. Beaton extended season's greetings and thanked everyone for making his first year serving as Chairman of the Board Directors a great one.

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

Upon a motion duly made and seconded, it was

Voted to: (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 John Carroll as Vice-Chairman of the Board; and (3) appoint Joseph Foti as Secretary of the Board and Bonnie Hale and Rose Marie Convery as Assistant Secretaries; Matthew Horan as Treasurer and Robert Belkin and Kathy Soni as Assistant Treasurers; and Thomas Durkin as a member of the MWRA Retirement Board for a three-year term; and (4) ratify the appointment of Board members to standing committees, as presented and filed with the records of the meeting. New Committee Chairs will be appointed approximately every two years.

BOARD ACTIONS

APPROVALS

Transmittal of FY17 Proposed Capital Improvement Program (CIP)

Upon a motion duly made and seconded, it was

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

MOA with the City of Newton for Use of Sudbury Aqueduct Lands

Upon a motion duly made and seconded, it was

Voted 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 as presented and filed with the records of the meeting, 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.

Emergency Water Supply Agreement with the Town of Ashland

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to execute a six-month Emergency Water Supply Agreement with the Town of Ashland, substantially as presented and filed with the records of the meeting.

Appointment of Program Manager, Monitoring & Control

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. John P. Beckley to the position of Program Manager, Monitoring & Control (Unit 9, Grade 29) in the Operations Division, at an annual salary of \$105,413, to be effective the date designated by the Executive Director.

Appointment of Deputy Chief Engineer

Upon a motion duly made and seconded, it was

Voted 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, to be effective the date designated by the Executive Director.

CONTRACT AWARDS

Bond Counsel: McCarter & English, LLP, Contract F236

Upon a motion duly made and seconded, it was

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

Technical Assistance Consulting Services for John J. Carroll Water Treatment Plant: Stantec Consulting Services, Inc., Contract 7407

Upon a motion duly made and seconded, it was

Voted 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. in an amount not to exceed \$750,000, for a term of two years from the Notice to Proceed.

Quabbin Power and Security Improvements: Ewing Electrical Company, Inc., Contract 7338

Upon a motion duly made and seconded, it was

Voted 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 and deliver said contract in the bid amount of \$3,199,000, for a term of 424 calendar days from the Notice to Proceed.

CONTRACT AMENDMENTS/CHANGE ORDERS

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

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to approve Amendment 2 to increase the amount of Contract 7034 with Fay, Spofford & Thorndike, LLC, Alewife Brook Pump Station Rehabilitation, in the amount of \$73,305, and to extend the term by 748 calendar days to May 17, 2019.

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		
Foti		
Pappastergion		
Pena		
Vitale		
Walsh		
Wolowicz		
Beaton		

Voted to enter executive session to discuss strategy with respect to litigation and to consider the purchase, exchange lease or value of real property, in that such discussion 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 1:50 p.m. and adjourned.

DRAFT