



MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard
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Boston, MA 02129

Frederick A. Laskey
Executive Director

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ADMINISTRATION, FINANCE & AUDIT COMMITTEE MEETING

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

to be held on

Wednesday, March 15, 2017

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

Time: 10:00 a.m.

AGENDA

A. Information

1. Delegated Authority Report – February 2017
2. FY17 Financial Update and Summary as of February 2017

B. Approvals

1. Biennial Review of Investment Policy
2. Approval of the Seventy-fifth Supplemental Resolution

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Administration, Finance and Audit Committee

February 15, 2017

A meeting of the Administration, Finance and Audit Committee was held on February 15, 2017 at the Authority headquarters in Charlestown. Chairman Vitale presided. Present from the Board were Messrs. Blackmon, Flanagan, Foti, Peña, Pappastergion, and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Mike Hornbrook, Steve Perry, Patterson Riley, Michele Gillen, Kathy Soni, Tom Durkin, Leo Norton, Steve Estes-Smargiassi, Louise Miller, Matt Horan, and Bonnie Hale. The meeting was called to order at 10:20 a.m.

Information

Second Quarter FY17 Orange Notebook

Staff gave a presentation highlighting certain portions of the report, including workforce management and Deer Island overtime. There was general discussion and question and answer.

Delegated Authority Report – January 2017

There was question and answer on some of the reported items.

Staff summarized each of the remaining information items, and there was general discussion:

- FY17 Financial Update and Summary as of January 2017
- FY2017 Mid-Year Capital Project Spending Report
- FY2017 Sewer Assessment Adjustments
- Preliminary FY18 Water and Sewer Assessments.

Approvals

*Transmittal of the FY18 Proposed Current Expense Budget to the MWRA Advisory Board

Staff gave a presentation on the proposed CEB and there was detailed discussion and question and answer. The Committee recommended approval of transmittal of the proposed budget to the MWRA Advisory Board for its 60-day review and comment period (ref. agenda item B.1).

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

*Appointment of Proxy for Fore River Railroad Corporation

The Committee recommended approval of appointment of proxy and the election of Board members of the Fore River Railroad Corporation, as presented and filed with the records of the meeting (ref. agenda item B.2).

The meeting adjourned at 11:30 a.m.

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

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 15, 2017
SUBJECT: Delegated Authority Report – February 2017



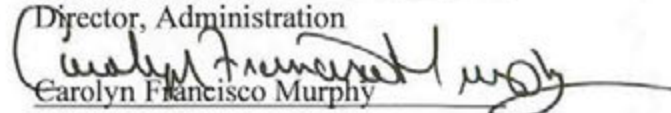
COMMITTEE: Administration, Finance & Audit

INFORMATION
 VOTE


Michele S. Gillen

Director, Administration

Barbara Aylward, Administrator A & F
Preparer/Title


Carolyn Francisco Murphy
Director of Procurement

RECOMMENDATION:

For information only. Attached is a listing of actions taken by the Executive Director under delegated authority for the period February 1 – 28, 2017.

This report is broken down into three sections:

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

BACKGROUND:

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

Construction Contract Awards:

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

Change Orders:

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

Professional Service Contract Awards:

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

Non-Professional Service Contract Awards:

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

Purchase or Lease of Equipment, Materials or Supplies:

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

Amendments:

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

Amendments to the Position Control Register:

Amendments which result only in a change in cost center.

BUDGET/FISCAL IMPACT:

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

CONSTRUCTION/PROFESSIONAL SERVICES DELEGATED AUTHORITY ITEMS FEBRUARY 1 - 28, 2017

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMEND/CO	COMPANY	FINANCIAL IMPACT
C-1.	02/02/17	THERMAL/POWER PLANT FUEL OIL SYSTEM UPGRADE DEER ISLAND TREATMENT PLANT INCREASE THE DIFFERENCE BETWEEN THE ALLOWANCE SPECIFIED FOR THE DIVISION 5 FILED SUBCONTRACTOR AND THE ACTUAL AMOUNT OF THE SUBCONTRACT.	7061A	1	J.F WHITE CONTRACTING CO.	\$92,534.37
C-2.	02/06/17	BEACON STREET LINE WATER PIPELINE REPAIR HIRE A CERTIFIED ARBORIST TO PROTECT TWO PUBLIC SHADE TREES AND CONSTRUCT A RISER MANHOLE IN LIEU OF REMOVING TWO TREES AND CONSTRUCT A VALVE VAULT AT THE INTERSECTION OF BEACON STREET AND ST. MARY'S STREET; FURNISH AND INSTALL A LEAK DETECTION CHAMBER WITH ACCESS HATCH AND ASSOCIATED PIPE FITTINGS IN LIEU OF SPECIFIED CHAMBER WITH TWO ACCESS MANHOLES; EXTEND THE CONTRACT TERM BY 100 CALENDAR DAYS FROM JANUARY 19, 2017 TO APRIL 29, 2017.	7458	1	R. ZOPPO CORP.	(\$37,615.67)
C-3.	02/21/17	MONITORING AND MAINTENANCE OF INTRUSION ALARM SYSTEMS AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE MONITORING AND MAINTENANCE OF INTRUSION ALARM SYSTEMS AT 27 MWRA FACILITIES FOR A TERM OF 730 CALENDAR DAYS.	EKE-039	AWARD	INTELLIGENT SYSTEMS AND CONTROL CONTRACTORS, INC. D/B/A FTG SECURITY	\$58,224.00
C-4.	02/23/17	HATCHERY PIPELINE AND HYDROELECTRIC PROJECT FURNISH A KOYO CONTROL PANEL IN LIEU OF THE SPECIFIED ALLEN BRADLEY CONTROL PANEL; DELETE THE REQUIREMENT TO FURNISH AND INSTALL A TRAILER, DESK, CHAIR, COMPUTER AND EQUIPMENT.	7235	3	WATERLINE INDUSTRIES CORP.	(\$146,124.18)

PURCHASING DELEGATED AUTHORITY ITEMS FEBRUARY 1 - 28, 2017


NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-1.	02/03/17	ONE ROTORK ACTUATOR AND GEARBOX FOR THE JOHN J. CARROLL WATER TREATMENT PLANT AWARD OF A SOLE SOURCE PURCHASE ORDER FOR ONE ROTORK ACTUATOR AND GEARBOX FOR THE JOHN J. CARROLL WATER TREATMENT PLANT.			THE WISE COMPANY, INC.	\$27,434.00
P-2.	02/06/17	LOGIC CONTROLLER HARDWARE AND SOFTWARE FOR THE COMMONWEALTH WEST AVENUE PUMP STATION AWARD OF A SOLE SOURCE PURCHASE ORDER FOR ALLEN BRADLEY PROGRAMMABLE LOGIC CONTROLLER HARDWARE AND SOFTWARE FOR THE COMMONWEALTH AVENUE WEST PUMP STATION.			NORTHEAST ELECTRICAL DISTRIBUTORS, INC.	\$49,291.67
P-3.	02/06/17	PIPING AND FITTINGS FOR WASH DOWN SYSTEM AT THE PRISON POINT COMBINED SEWER OVERFLOW AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR PIPING AND FITTINGS FOR WASH DOWN SYSTEM AT THE PRISON POINT COMBINED SEWER OVERFLOW.	WRA-4320		METROPOLITAN PIPE & SUPPLY COMPANY	\$93,021.46
P-4.	02/13/17	INVASIVE PLANT CONTROL AT THE WARE RIVER/SHAFT 8 INTAKE POOL AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER TO PROVIDE INVASIVE PLANT CONTROL AT THE WARE RIVER/SHAFT 8 INTAKE POOL.	WRA-4327Q		AQUALOGIC, INC.	\$28,300.00
P-5.	02/13/17	ABOVE GROUND CABINET ENCLOSURES AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR FIVE ABOVE GROUND RECTIFIER CABINET ENCLOSURES TO REPLACE OUTDATED CABINETS ON SECTION 57 IN EVERETT AND CHELSEA.	WRA-4321		KAMAN AUTOMATION, INC.	\$39,700.00
P-6.	02/13/17	INVASIVE PLANT CONTROL AT THE CHESTNUT HILL RESERVOIR AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER TO PROVIDE INVASIVE PLANT CONTROL AT THE CHESTNUT HILL RESERVOIR.	WRA-4329		SOLITUDE LAKE MANAGEMENT, LLC	\$90,500.00
P-7.	02/14/17	TEN NEW GM VEHICLES AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE PURCHASE OF TEN NEW GENERAL MOTORS VEHICLES IN ACCORDANCE WITH THE MWRA'S VEHICLE REPLACEMENT POLICY.	WRA-4299	1	LIBERTY CHEVROLET, INC.	\$563,139.00
P-8.	02/16/17	REPAIR ONE VACTOR JET AWARD OF A SOLE SOURCE PURCHASE ORDER TO REPAIR ONE VACTOR JET SEWER CLEANER.			CN WOOD COMPANY, INC.	\$31,522.02
P-9.	02/23/17	ONE NEW WHEELED EXCAVATOR AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR ONE NEW WHEELED EXCAVATOR TO REPLACE A BROKEN 14 YEAR OLD EXCAVATOR IN ACCORDANCE WITH THE MWRA'S VEHICLE REPLACEMENT POLICY.	WRA-4330		MILTON CAT, INC.	\$194,900.00

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 15, 2017
SUBJECT: FY17 Financial Update and Summary



COMMITTEE: Administration, Finance & Audit


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

INFORMATION

VOTE


Thomas J. Durkin
Director, Finance

RECOMMENDATION:

For information only. This staff summary provides the financial update and variance highlights through February 2017, comparing actual spending and revenue to the FY17 budget.

DISCUSSION:

Total year-to-date variance is \$7.6 million lower than budget mainly due to lower direct expenses of \$1.9 million, lower indirect expenses of \$280,000, and higher revenues of \$5.4 million.

In February, \$1.5 million was transferred to the Defeasance Account as result of continued low variable rate environment, the favorable impact of the August 2016 defeasance, lower SRF funding than planned, and not borrowing senior debt scheduled for January 2017, now scheduled for May. The defeasance account balance as of February is \$9.0 million. The continued use of defeasances as part of our multi-year rates management strategy is critically important for us to meet the Advisory Board's goal of keeping annual rate increases under 4% in the out years.

Without the transfer of the \$9.0 million in debt service savings to the Defeasance Account, the total year-to-date budget variance through February would have been \$16.6 million.

Should these favorable trends continue, the year-end favorable variance is projected at \$33.7 million, of which \$22.3 million is related to debt service. Beyond debt service savings, staff project a surplus of approximately \$11.4 million at year-end of which \$3.9 million would be from lower direct expenses, \$472,000 from lower indirect expenses, and \$7.0 million from greater than budgeted revenues, mostly related to additional unbudgeted water revenue due to the drought.

Staff already identified candidates for year-end defeasance and plans to include the impact of the FY17 defeasance in the FY18 planning estimates.

As the year progresses and more actual spending information becomes available, staff will continue to refine the year-end projections and update the Board accordingly.

FY17 Current Expense Budget

The expense variances through February 2017 by major budget category were:

- Net Lower Direct Expenses of \$1.9 million or 1.3%. Spending is lower primarily for Wages and Salaries, Other Services, Utilities, and Fringe Benefits. This is offset by higher spending for Maintenance, Other Materials, Chemicals, Overtime, and Worker’s Compensation.
- Lower Indirect Expenses of \$280,000 or 0.1% for lower Insurance costs and Watershed reimbursements.

FY17 Budget and FY17 Actual Year to Date Variance by Expenditure Category

	FY17 Budget YTD	FY17 Actual YTD	\$ Variance	% Variance
Direct Expenses	\$143.9	\$142.0	-\$1.9	-1.3%
Indirect Expenses	\$23.8	\$23.5	-\$0.3	-1.2%
Debt Service	\$292.1	\$292.1	\$0.0	0.0%
Total	\$459.8	\$457.6	-\$2.2	-0.5%

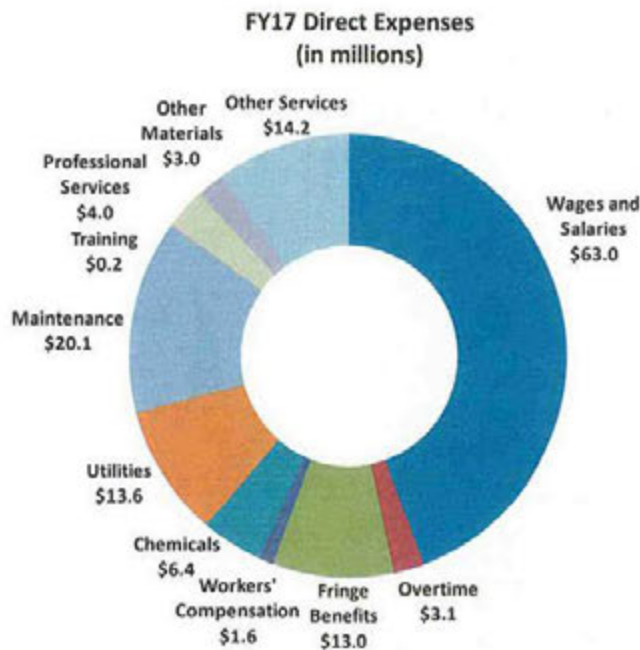
Totals may not add due to rounding

Total Revenues of \$490.0 million were \$5.4 million over budget reflecting primarily \$4.8 million receipt for water usage related to the drought, \$299,000 for a class action lawsuit settlement for derivative agreements, \$224,000 for disposal of surplus material, and \$141,000 for energy efficiency incentives from the utility companies. This is offset by lower Investment Income of \$235,000 for unanticipated calls re-invested at lower rates.

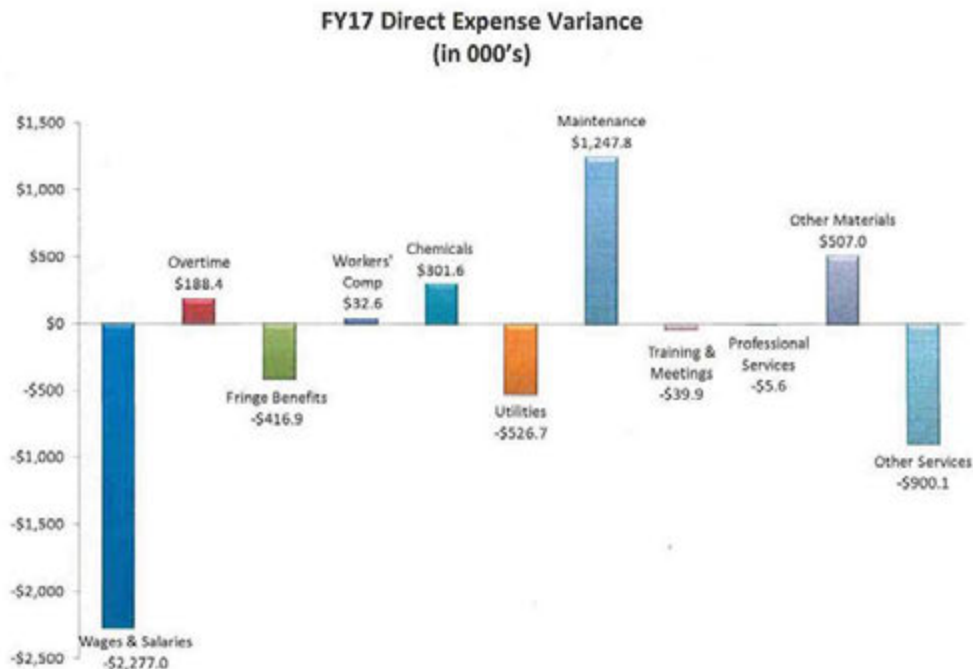
Please refer to Attachment 1 for a more detailed comparison by line item of the budget variances for the year to date.

Direct Expenses

Year-to-date direct expenses totaled \$142.0 million, \$1.9 million or 1.3% less than budgeted.



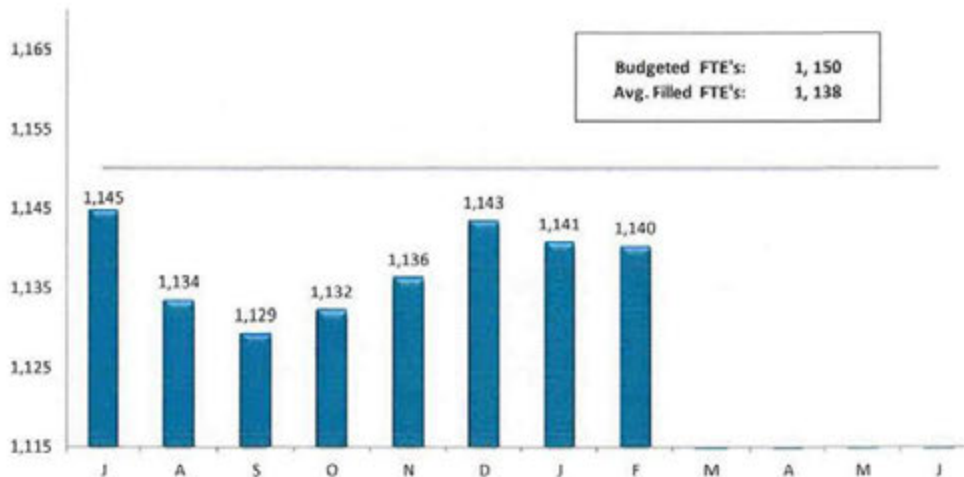
Lower than budgeted spending in Wages and Salaries, Other Services, Utilities, Fringe Benefits, Training & Meetings, and Professional Services, was offset by higher spending for Maintenance, Other Materials, Chemicals, Overtime, and Worker's Compensation.



Wages and Salaries

Wages and Salaries were underspent by \$2.3 million or 3.5% mainly as a result of lower average Full Time Equivalent positions (FTEs) than budgeted, the timing of backfilling vacant positions, and the salary mix differential between staff retiring and new hires. The average FTEs through February were 1,138, which was 12 positions lower than the 1,150 FTEs budgeted.

FY17 MWRA Full Time Equivalent (FTE) Position Trend



Other Services

Other Services spending was lower than budget by \$900,000 or 6.0% due to lower spending of \$406,000 for sludge pelletization services because of lower year to date quantities; \$201,000 for Space/Lease Rentals due to lower escrow payments at the Chelsea Facility for taxes and insurance, and lower than budget pass-through maintenance cost at the Charlestown Navy Yard Facility; \$132,000 for Other Services primarily for timing of community lead testing assistance; and \$120,000 for Grit and Screenings disposal services primarily due to lower quantities.

Utilities

Utilities were underspent by \$527,000 or 3.7%, due to lower electricity costs of \$894,000, primarily for lower than budgeted pricing at the Deer Island Treatment Plant and being offline during the HEEC cable location work; and lower expenses for Natural Gas of \$80,000. This is offset by higher net spending of \$473,000 for Diesel Fuel. Deer Island had two deliveries of diesel fuel during FY17 versus one budgeted, resulting in \$672,000 overspending. However, Field Operations was underspent by \$293,000 related to lower than budgeted pricing. The average price of fuel at Deer Island was \$1.66/gal versus the budgeted \$2.10/gal. The second delivery at Deer Island is related to running the CTGs during the HEEC cable location work.

Fringe Benefits

Fringe Benefits spending was lower than budgeted by \$417,000 or 3.1% primarily for lower Health Insurance costs of \$363,000 due to fewer employees and retirees than budgeted participating in health insurance plans, and the change between family vs. individual plans.

Training & Meetings

Training & Meetings was underspent by \$40,000 or 15.6%, primarily in Fleet Services due to timing of training.

Professional Services

Professional Services were on budget, showing a total underspending of \$6,000 or 0.1%. Within Professional Services, Other Services was underspent primarily in Finance for finance/investment services; Lab and Testing Analysis in EnQual – Wastewater for harbor monitoring; and Resident Inspection for DASH (invasives) quality assurance diver services. This was offset by higher spending for Legal Services in Law.

Maintenance

Maintenance expenses were higher than budgeted by \$1.3 million or 6.6%. The Nut Island fire incident accounts for \$410,000 of the variance. Other overspending occurred in Pipeline Services for \$504,000 primarily for sewer manhole rehabilitation and paving, and in Plant and Machinery Services for \$333,000 primarily at Deer Island.

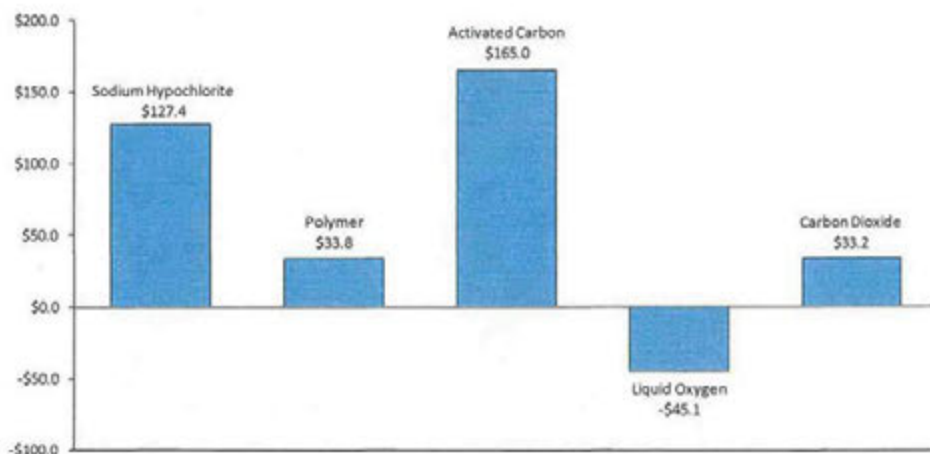
Other Materials

Other Materials were higher than budget by \$507,000 or 20.5% mainly due to timing of Vehicle Purchases of \$397,000; Lab & Testing Supplies of \$102,000; Computer Hardware of \$68,000 Other Materials of \$63,000 primarily for gravel at the Clinton Landfill; and Health & Safety of \$43,000. This is offset by lower Vehicle Expenses of \$191,000 due to lower than budgeted fuel prices and Computer Software of \$36,000.

Chemicals

Chemicals expenses were higher than budgeted by \$302,000 or 5.0%. Expenses for Activated Carbon were over budget year-to-date by \$165,000 at Deer Island Treatment Plant due to the timing of the change out of West Odor Control activated carbon bed. Sodium Hypochlorite of \$127,000 due to higher than budgeted price for new contracts and timing of deliveries at Deer Island; Polymer of \$34,000 due to treating more tons of sludge at Deer Island; Carbon Dioxide of \$33,000 due to lower dissolved CO₂ in raw water requiring higher dosage of Carbon Dioxide at Carroll Water Treatment Plant. This is offset by lower spending on Liquid Oxygen at Carroll Water Treatment Plant of \$45,000 where the use of UV as a disinfectant is requiring less Liquid Oxygen.

FY17 Top Five Chemical Variances through February



Overtime

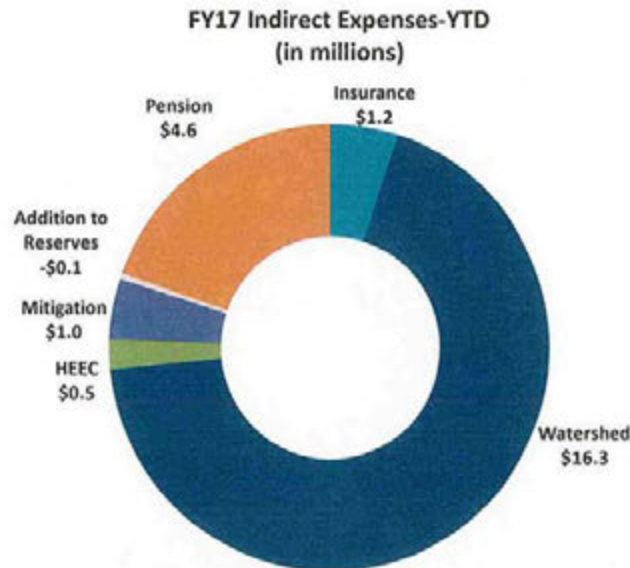
Overtime was higher than budget by \$188,000 or 6.5% mainly at the Deer Island Treatment Plant for the HEEC cable location project by Eversource and Field Operations Metro Maintenance off hour projects. This is offset by lower than expected spending in Wastewater Operations related to the North Main Pump Station project at Deer Island.

Workers' Compensation

Year-to-Date Workers' Compensation expenses were higher than budget by \$33,000 or 2.1%. While actual payments for February were below the year-to-date monthly average, actual spending was \$575,000 over budget, reflecting recent unfavorable outcomes of hearings with the Department of Industrial Accidents and revaluations of reserves for five cases totaling \$600,000.

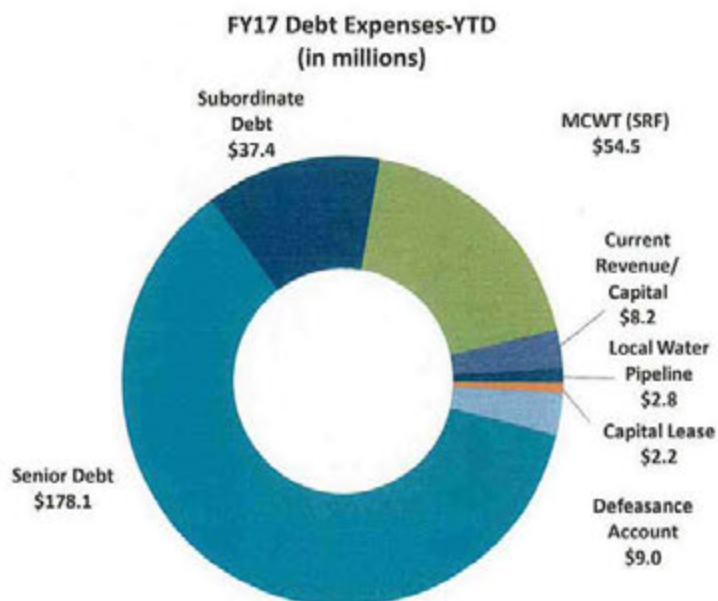
Indirect Expenses

For the fiscal year to date, Indirect Expenses totaled \$23.5 million, \$280,000 or 1.2% lower than budget, related to lower than budgeted insurance claims and an over-accrual in FY16 for Watershed management operating expenses.



Debt Service

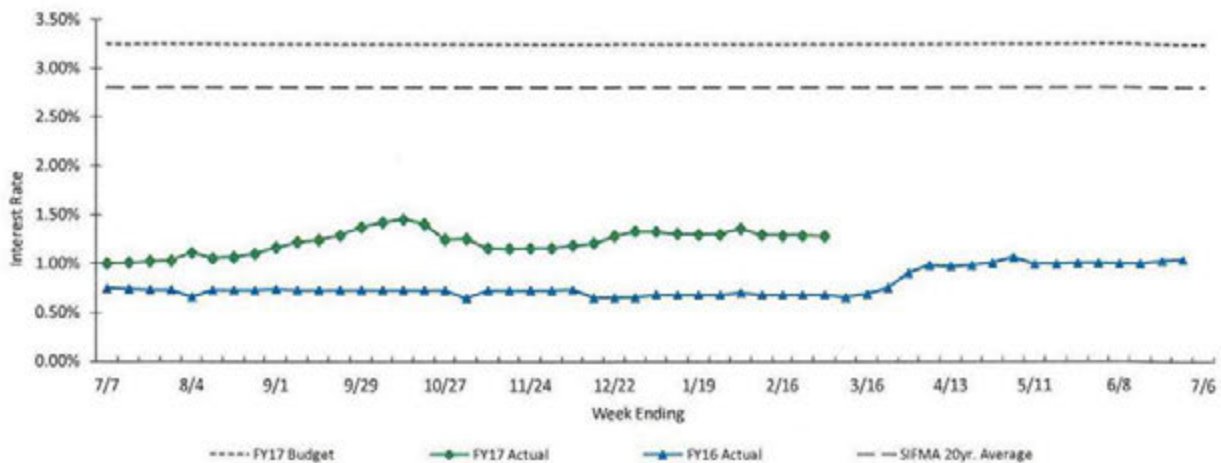
Debt Service expenses include the principal and interest payment for fixed debt, the variable subordinate debt, the Massachusetts Clean Water Trust (SRF) obligation, the commercial paper program for the local water pipeline projects, current revenue for capital, and the Chelsea facility lease payment.



Debt Service expenses for the fiscal year totaled \$292.1 million, which is at the budgeted level after the transfer of \$9.0 million of a favorable year-to-date variance to the Defeasance Account. The short-term rates related variance is \$7.4 million year-to-date. Additionally, the Authority recognized \$1.6 million in year-to-date underspending that is the result of the favorable impact of the August 2016 defeasance, lower SRF funding than planned, and not borrowing senior debt scheduled for January.

The graph below reflects the FY17 actual variable rate trend by week over the past year and the FY17 Budget.

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



Revenue & Income

Total Revenue for the fiscal year totaled \$490.0 million, \$5.4 million or 1.1% higher than budget.

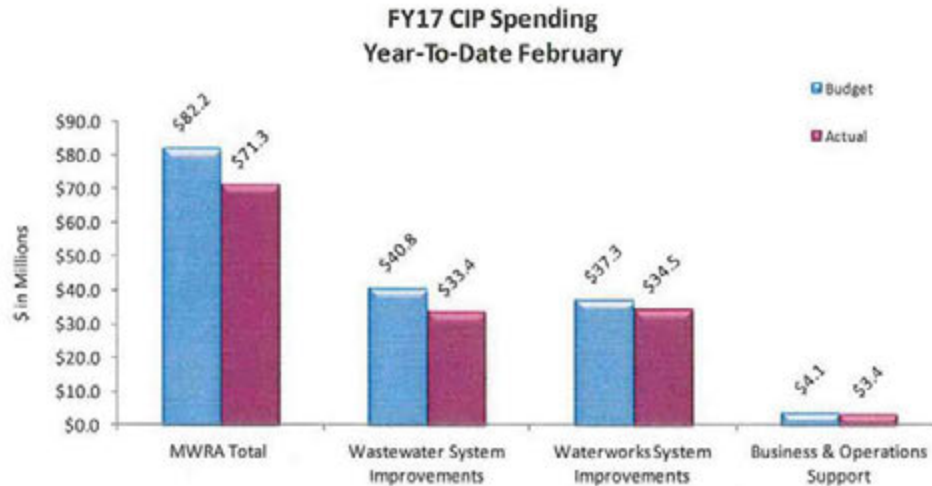
The higher than budgeted non-rate Revenue was driven by the receipt of \$4.8 million for water usage related to the summer drought; \$299,000 for a class action lawsuit settlement for derivative agreements; \$224,000 for the disposal of surplus materials; and \$142,000 for energy efficiency incentives from the utility companies. This is offset by lower Investment Income of \$250,000 for unanticipated calls re-invested at lower rates.

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

FY17 Capital Improvement Program

Capital expenditures in FY17 total \$82.2 million through the end of February, \$10.9 million or 13% less than budget.

After accounting for programs which are not directly under MWRA's control, most notably the Inflow and Infiltration (I/I) program, the Local Water Pipeline program, and the community managed Combined Sewer Overflow (CSOs) projects, capital spending totaled \$63.5 million, \$2.9 million or 4.7% over budget.



Overall underspending reflects the underspending of Wastewater Improvements and Business and Operations Support of \$1.9 million and \$0.5 million, respectively, partially offset by Waterworks Improvements overspending of \$0.6 million.

FY17 Year-to-date Spending By Program:

\$ in Millions	Budget	Actuals	\$ Var.	% Var.
Wastewater System Improvements				
Interception & Pumping	13.8	10.9	(2.9)	-20.9%
Treatment	10.1	15.6	5.6	55.3%
Residuals	0.0	0.0	0.0	N/A
CSO	5.9	3.1	(2.9)	-48.1%
Other	11.0	3.9	(7.2)	-65.0%
Total Wastewater System Improvements	\$40.8	\$33.4	-\$7.3	-18.0%
Waterworks System Improvements				
Drinking Water Quality Improvements	1.7	0.6	(1.0)	-61.6%
Transmission	17.2	16.5	(0.7)	-4.2%
Distribution & Pumping	9.7	12.8	3.1	32.0%
Other	8.7	4.6	(4.2)	N/A
Total Waterworks System Improvements	\$37.3	\$34.5	-\$2.8	-7.5%
Business & Operations Support	\$4.1	\$3.4	(\$0.8)	-18.5%
Total MWRA	\$82.2	\$71.3	-\$10.9	-13.3%

Totals may not add due to rounding

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

Other Wastewater: Net underspending of \$7.2 million

- \$7.2 million for Community Infiltration/Inflow (I/I) due to less than anticipated requests for loans and grants.

Wastewater Treatment: Net overspending of \$5.6 million

- \$1.8 million for Deer Island Primary/Secondary Clarifier Rehabilitation legal settlement.
- \$1.5 million for Deer Island Power System Improvements, \$0.8 million for Clinton Phosphorus Reduction Construction, \$0.6 million for Winthrop Terminal Facility Variable Frequency Drives Replacement Construction, and \$0.5 million for Digester Sludge Pump Phase 2 due to contractor progress.
- \$0.6 million for Electrical Upgrades Construction 4 due to timing of final work in FY17 that had been budgeted in FY16.
- The overspending was partially offset by underspending on Personnel Dock Rehabilitation due to later than anticipated award and less than anticipated design expenditures for Clarifier Rehabilitation Phase 2.

Waterworks Other: Net underspending of \$4.2 million

- \$3.6 million for Local Water Community Assistance due to less than anticipated requests for loans.
- \$0.3 million for Beacon Street Line Repair due to construction issues with vaults at access pits.

Water Distribution and Pumping: Net overspending of \$3.1 million

- \$1.9 million for Section 89/29 Redundancy Phase 1B Construction, and \$0.6 million for Southern Extra High Section 111 Construction 1 due to contractor progress.
- \$1.3 million for Spot Pond Supply Mains due to additional work for Webster Avenue Bridge Pipe Rehabilitation.
- The overspending was partially offset by underspending on Weston Aqueduct Supply Mains Section 36/C/S9-A11 Valve of \$0.4 million due to anticipated balancing credit change order for underspent items.

Interception & Pumping: Net underspending of \$2.9 million

- \$2.8 million for Chelsea Creek Headworks Upgrades Construction and Engineering Services for a later Notice-to-Proceed date than budgeted.
- \$1.1 million on Caruso Pump Station Improvements Construction due to construction delays.
- The underspending was partially offset by \$0.8 million for Alewife Brook Pump Station Rehabilitation Construction due to contractor progress and \$0.5 million for Chelsea Screenhouse Upgrades due to timing of final work.

Combined Sewer Overflow: Net underspending of \$2.9 million

- \$2.8 million for Cambridge Sewer Separation Project due to timing of final restoration work.

Drinking Water Quality Improvements: Net underspending of \$1.0 million

- Spot Pond Covered Storage Facility Design/Build of \$0.4 million due to construction delays, and \$0.4 million for Southborough Water Quality Upgrades pending a final balancing change order and updated schedule for the Marlborough Maintenance Facility.

Waterworks Transmission: Net underspending of \$0.7 million

- \$0.8 million for Wachusett Aqueduct Pump Station Construction due to less than anticipated progress with the guard shack.
- \$0.8 million caused by less than anticipated progress for the Rosemary Brook Siphon Building Repairs due to delays in obtaining specialty items for work.
- The underspending was partially offset by overspending of \$0.5 million for the Hatchery Pipeline Construction due to contractor progress.

Construction Fund Balance

The construction fund balance was at \$48.2 million as of the end of February. Commercial Paper availability was at \$222.0 million to fund construction projects.

Attachment 1–Variance Summary February 2017

Attachment 2 – Current Expense Variance Explanations

Attachment 3 – Capital Improvement Program Variance Explanations

Attachment 4 – FY17 Budget vs. FY17 Projections

ATTACHMENT 1

	February 2017 Year-to-Date					
	Period 8 YTD Budget	Period 8 YTD Actual	Period 8 YTD Variance	%	FY17 Approved	% Expended
EXPENSES						
WAGES AND SALARIES	\$ 65,277,280	\$ 63,000,320	\$ (2,276,960)	-3.5%	\$ 101,588,897	62.0%
OVERTIME	2,878,766	3,067,192	188,426	6.5%	4,192,676	73.2%
FRINGE BENEFITS	13,407,936	12,991,085	(416,851)	-3.1%	20,242,323	64.2%
WORKERS' COMPENSATION	1,562,793	1,595,356	32,563	2.1%	2,344,190	68.1%
CHEMICALS	6,060,971	6,362,534	301,563	5.0%	9,110,407	69.8%
ENERGY AND UTILITIES	14,077,895	13,551,184	(526,711)	-3.7%	21,541,077	62.9%
MAINTENANCE	18,817,744	20,065,547	1,247,803	6.6%	31,080,642	64.6%
TRAINING AND MEETINGS	255,273	215,333	(39,940)	-15.6%	435,481	49.4%
PROFESSIONAL SERVICES	4,009,503	4,003,916	(5,587)	-0.1%	6,531,939	61.3%
OTHER MATERIALS	2,475,090	2,982,137	507,047	20.5%	6,219,630	47.9%
OTHER SERVICES	15,063,726	14,163,627	(900,099)	-6.0%	22,974,855	61.6%
TOTAL DIRECT EXPENSES	\$ 143,886,977	\$ 141,998,231	\$ (1,888,747)	-1.3%	\$ 226,262,117	62.8%
INSURANCE	\$ 1,344,739	\$ 1,168,033	\$ (176,706)	-13.1%	\$ 1,997,898	58.5%
WATERSHED/PILOT	16,349,892	16,253,432	(96,460)	-0.6%	24,291,268	66.9%
BECo PAYMENT	520,866	523,962	3,096	0.6%	773,859	67.7%
MITIGATION	1,048,654	1,038,423	(10,231)	-1.0%	1,558,000	66.7%
ADDITIONS TO RESERVES	(112,903)	(112,903)	-	0.0%	(167,742)	67.3%
RETIREMENT FUND	4,632,624	4,632,624	-	0.0%	4,632,624	100.0%
POST EMPLOYEE BENEFITS	-	-	-	---	4,876,050	0.0%
TOTAL INDIRECT EXPENSES	\$ 23,783,872	\$ 23,503,571	\$ (280,301)	-1.2%	\$ 37,961,957	61.9%
STATE REVOLVING FUND	\$ 55,299,505	\$ 54,484,397	\$ (815,108)	-1.5%	\$ 86,971,915	62.6%
SENIOR DEBT	178,863,922	178,124,192	(739,730)	-0.4%	268,472,556	66.3%
CORD FUND	-	-	-	---	-	---
DEBT SERVICE ASSISTANCE	-	-	-	---	(873,804)	---
CURRENT REVENUE/CAPITAL	8,211,538	8,211,538	-	0.0%	12,200,000	67.3%
SUBORDINATE MWRA DEBT	44,798,888	44,798,888	-	0.0%	69,997,992	64.0%
LOCAL WATER PIPELINE CP	2,792,759	2,792,759	-	0.0%	4,149,242	67.3%
CAPITAL LEASE	2,165,328	2,165,328	-	0.0%	3,217,060	67.3%
DEBT PREPAYMENT	-	-	-	---	10,994,960	0.0%
VARIABLE DEBT	-	(7,403,038)	(7,403,038)	---	-	0.0%
DEFEASANCE ACCOUNT	-	8,957,876	8,957,876	---	-	0.0%
TOTAL DEBT SERVICE	\$ 292,131,940	\$ 292,131,940	\$ -	0.0%	\$ 455,129,921	64.2%
TOTAL EXPENSES	\$ 459,802,789	\$ 457,633,742	\$ (2,169,048)	-0.5%	\$ 719,353,995	63.6%
REVENUE & INCOME						
RATE REVENUE	\$ 467,706,682	\$ 467,706,682	\$ -	0.0%	\$ 694,878,500	67.3%
OTHER USER CHARGES	6,048,445	6,115,153	66,708	1.1%	8,752,834	69.9%
OTHER REVENUE	4,738,919	10,292,611	5,553,692	117.2%	6,519,171	157.9%
RATE STABILIZATION	-	-	-	---	-	---
INVESTMENT INCOME	6,102,941	5,868,112	(234,829)	-3.8%	9,473,490	61.9%
TOTAL REVENUE & INCOME	\$ 484,596,987	\$ 489,982,558	\$ 5,385,571	1.1%	\$ 719,623,995	68.1%

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY17 Budget YTD February	FY17 Actuals YTD February	FY17 YTD Actual vs. FY17 Budget		Explanations
			\$	%	
Direct Expenses					
Wages & Salaries	65,277,280	63,000,320	(2,276,960)	-3.5%	Underspending is mainly the result of lower average Full Time Equivalent positions (FTEs) than budgeted, the timing of backfilling vacant positions and the salary mix differential between staff retiring and new hires. The average FTEs for the fiscal year was 1,138, which was 12 positions lower than the 1,150 FTEs budgeted.
Overtime	2,878,766	3,067,192	188,426	6.5%	Higher spending at DITP related to the HEEC cable relocation project and Metro Maintenance due to off-hour maintenance work. This is offset by lower spending in Wastewater Operations due to lower than anticipated OT associated with the NMPS work at DITP.
Fringe Benefits	13,407,936	12,991,085	(416,851)	-3.1%	Lower than budget mainly due to Health Insurance of \$363,000, due to fewer than budgeted participation and the change between family and individual plans. Unemployment Insurance, Medicare, and Dental insurance also underspent due to fewer than budgeted positions.
Worker's Compensation	1,562,793	1,595,356	32,563	2.1%	Overspending due to higher compensation payments of \$314,000 and management costs of \$27,000. This is offset by lower medical payments of \$308,000. In February actual spending was \$575,000 over budget. Recent hearings with the Department of Industrial Accidents resulted in a revaluation of reserves for five cases totaling \$600,000. It is important to note that spending on this line item can change significantly depending on future claims and severity of cases.
Chemicals	6,060,971	6,362,534	301,563	5.0%	Overspending on Activated Carbon of \$165,000 at DITP for odor control; Sodium Hypochlorite of \$127,000 (higher than budgeted cost for new contracts); Polymer of \$34,000 for additional sludge at Deer Island; Carbon Dioxide of \$33,000; Ferric Chloride of \$27,000; Other Oxidizers of \$25,000; Hydrogen Peroxide of \$19,000. This is offset by lower spending on Liquid Oxygen of \$45,000; Soda Ash of \$16,000; Hydrofluosilic Acid of \$29,000; and Aqua Ammonia of \$18,000.

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY17 Budget YTD February	FY17 Actuals YTD February	FY17 YTD Actual vs. FY17 Budget		Explanations
			\$	%	
Utilities	14,077,895	13,551,184	(526,711)	-3.7%	Underspending in Electricity of \$894,000 primarily at DITP due to lower prices and being off grid during the HEEC cable location work; and Wastewater facilities partially for not using wet scrubbers at NI and lower flows throughout the system. This is offset by higher spending at waterworks facilities attributed to pumping more water to Bedford and higher than anticipated demand charges at the new Spot Pond Pump Station. Diesel Fuel is overspent by \$379,000 primarily related to running the CTGs at DITP during the HEEC cable location work. This is offset by lower spending in Wastewater Operations. Water is overspent by \$92,000 at DITP and the Carroll Plant. Natural Gas is underspent \$80,000 primarily at the Carroll Plant and the Chelsea Facility.
Maintenance	18,817,744	20,065,547	1,247,803	6.6%	Services were overspent by \$1.3 million and Materials were underspent by \$55,000. Nut Island fire remediation efforts have costs \$410,000 in FY17 for both materials and services; primarily in Building & Grounds Services, Pipeline Services and Plant & Machinery Materials. Overspending in Pipeline Services of \$504,000 primarily for sewer manhole rehabilitation project and timing of paving of in-house work in the roadways; Plant & Machinery Services is overspent by \$333,000 primarily at Deer Island; Computer Software Licenses/Upgrades of \$195,000 in MIS; and HVAC Services of \$158,000 Water Operations.
Training & Meetings	255,273	215,333	(39,940)	-15.6%	Underspending primarily in Fleet Services due to timing.
Professional Services	4,009,503	4,003,916	(5,587)	-0.1%	Lower spending on Other Services of \$123,000 primarily in Treasury and HR; and Lab & Testing Analysis of \$25,000 in EnQual - Wastewater. This is offset by higher spending for Legal Services of \$172,000 in the Law Department.
Other Materials	2,475,090	2,982,137	507,047	20.5%	Higher than budget spending for Vehicle Purchases/ Replacements of \$397,000 due to timing; Lab & Testing of \$102,000 in Operations; Computer Hardware of \$68,000 in MIS Other Materials of \$63,000 primarily for gravel for Clinton landfill; Health/Safety of \$43,000; and . This is offset by underspending of \$191,000 in Vehicle Expenses primarily due to lower fuel prices and \$36,000 for Computer Software in Operations - SCADA Maintenance.
Other Services	15,063,726	14,163,627	(900,099)	-6.0%	Lower than budgeted Sludge Pelletization of \$406,000 due to lower year to date quantities; Space Lease/Rentals of \$201,000 due to lower escrow for Chelsea taxes and insurance, and pass through maintenance cost at CNY; Other Services of \$132,000 primarily for timing of community lead testing assistance; Grit and Screenings of \$120,000 due to lower quantities; and Telephone of \$98,000 in Operations associated with the SCADA data lines.
Total Direct Expenses	143,886,977	141,998,231	(1,888,746)	-1.3%	

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY17 Budget YTD February	FY17 Actuals YTD February	FY17 YTD Actual vs. FY17 Budget		Explanations
			\$	%	
Indirect Expenses					
Insurance	1,344,739	1,168,033	(176,706)	-13.1%	Lower Claims than budgeted of \$178,000 offset by higher premiums of \$2,000.
Watershed/PILOT	16,349,892	16,253,432	(96,460)	-0.6%	Lower Watershed Reimbursement due to over accrual at the end of FY16 as compared to actual invoiced paid.
HEEC Payment	520,866	523,962	3,096	0.6%	
Mitigation	1,048,654	1,038,423	(10,231)	-1.0%	Actual inflation rate was 1.5% vs. 2.5% used for the budget.
Addition to Reserves	(112,903)	(112,903)	-	0.0%	
Pension Expense	4,632,624	4,632,624	-	0.0%	
Post Employee Benefits	-	-	-		
Total Indirect Expenses	23,783,872	23,503,571	(280,301)	-1.2%	
Debt Service					
Debt Service	292,131,940	292,131,940	-	0.0%	Through February staff have transferred \$9.0 million of a favorable YTD variance to the Defeasance Account. The short-term rates related variance is \$7.4 million lower YTD.
Debt Service Assistance	-	-	-		
Total Debt Service Expenses	292,131,940	292,131,940	-	0.0%	
Total Expenses					
Total Expenses	459,802,789	457,633,742	(2,169,048)	-0.5%	
Revenue & Income					
Rate Revenue	467,706,682	467,706,682	-	0.0%	
Other User Charges	6,048,445	6,115,153	66,708	1.1%	
Other Revenue	4,738,919	10,292,611	5,553,692	117.2%	\$4.8 M for sale of water due to the drought; \$299k for settlement of class action lawsuit for derivative agreements; \$224k from sale of surplus equipment; and \$141,000 for energy efficiency incentives from the utility companies
Rate Stabilization	-	-	-		
Investment Income	6,102,941	5,868,112	(234,829)	-3.8%	Investment Income is under budget for unanticipated calls re-invested at lower rates.
Total Revenue	484,596,987	489,982,558	5,385,571	1.1%	
Net Revenue in Excess of Expenses	24,794,198	32,348,816	7,554,619		

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

	FY17 Budget YTD February	FY17 Actuals YTD February	YTD Actuals vs. Budget		Explanations
			\$	%	
Wastewater					
Interception & Pumping (I&P)	\$13,803	\$10,912	(\$2,892)	-20.9%	<u>Underspending</u> Chelsea Creek Headworks Upgrades Construction and Resident Engineering and Inspection: \$2.8M (NTP shifted 3 months; contract is currently in submittals and Request For Information status) Caruso Pump Station Improvements Construction: \$1.1M (delayed installation of HVAC equipment due to unforeseen roof replacement) <u>Offset Overspending</u> Alewife Brook Pump Station Rehab Construction: \$0.8M (project progress) Chelsea Screenhouse Upgrades Construction and ESDC/REI: \$0.8M (work scheduled for FY16 performed in FY17)
Treatment	\$10,050	\$15,607	\$5,556	55.3%	<u>Overspending</u> Primary & Secondary Clarifier Rehab - Construction: \$1.8M (Portion of \$2.65M settlement with contractor. Remainder was retainage payment.) Power System Improvements - Construction: \$1.5M (project progress) Clinton Wastewater Treatment Plant Phosphorus Reduction - Construction: \$0.8M (project progress) WTF VFD Replacement - Construction: \$0.6M (spending for bonds and insurances) Electrical Equipment Upgrades Construction 4: \$0.6M (work scheduled and budgeted for FY16 performed in FY17) Digested Sludge Pump Replacement - Phase 2: \$0.5M (project progress) NMPS & WTF Butterfly Valve Replacement: \$0.4M (project progress) <u>Offset Underspending</u> Barge Berth and Facility Replacement - \$0.3M (NTP shifted 3 months) Other smaller projects totaling \$0.3M.
Residuals	\$0	\$0	\$0	-	
CSO	\$5,924	\$3,074	(\$2,850)	-48.1%	<u>Underspending</u> Cambridge Sewer Separation: \$2.8M (delay in work due to Huron Avenue water main replacement by the City of Cambridge that required a six month time extension) Reserved Channel Sewer Separation Design and Construction: \$0.4M (pending reconciliation of final costs; expected in June 2017)

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

	FY17 Budget YTD February	FY17 Actuals YTD February	YTD Actuals vs. Budget		Explanations
			\$	%	
Other Wastewater	\$11,012	\$3,855	(\$7,157)	-65.0%	I/I Local Financial Assistance: \$7.2M (less than anticipated requests for grants and loans). The annual CIP budget is based on prior average annual disbursements. Communities' requests for grants and loans are based on their own individual planned schedule of infiltration and inflow work and can vary greatly beyond the Authority's control.
Total Wastewater	\$40,790	\$33,447	(\$7,343)	-18.0%	
Waterworks					
Drinking Water Quality Improvements	\$1,655	\$636	(\$1,020)	-61.6%	<u>Underspending</u> Spot Pond Covered Storage Facility: \$0.4M (Microwave tower installed. Awaiting delivery and installation of communication shelter.) CP7 Existing Facilities: \$0.4M (pending balancing change order)
Transmission	\$17,213	\$16,495	(\$718)	-4.2%	<u>Underspending</u> Wachusett Aqueduct Pump Station: \$0.4M (pending redesign of work adjacent to City of Marlborough water pipe and progress less than anticipated at the pump station) Rosemary Brook Siphon Building Repair: \$0.8M (anticipated time extension due to additional restoration work) <u>Offset Overspending</u> Hatchery Pipeline Construction and ESDC/REI: \$0.6M (project progress)
Distribution & Pumping	\$9,700	\$12,806	\$3,107	32.0%	<u>Overspending</u> Section 4 Webster Ave Bridge Pipe Rehab - Construction: \$1.2M (additional change order work based on redesign) NIH Section 89/29 Redundancy Phase 1B Construction: \$1.9M (project progress) SEH Redundancy Pipeline Section 111 Phase 1 Construction: \$0.6M (project progress) South Segment CP3, Sections 23, 24, 47 - Final Design/CA/RI: \$0.4M (timing of payments) <u>Offset Underspending</u> Weston Aqueduct Supply Mains Section 36/C/S9 - A11 Valve: \$0.4M (anticipated credit change order for less than estimated quantities of rock and contaminated soil, and timing of valve installation work)


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

	FY17 Budget YTD February	FY17 Actuals YTD February	YTD Actuals vs. Budget		Explanations
			\$	%	
Other Waterworks	\$8,725	\$4,568	(\$4,157)	-47.6%	Local Water System Assistance Program: \$3.6M (less than budgeted community requests for loans. The annual CIP budget is based on prior average annual disbursements. Communities' requests for loans are based on their own individual planned pipeline lining and/or replacement work and can vary greatly beyond the Authority's control.) Beacon Street Line Repair - Construction: \$0.3M (redesign of vaults to accommodate existing trees)
Total Waterworks	\$37,293	\$34,504	(\$2,789)	-7.5%	
Business & Operations Support					
Total Business & Operations Support	\$4,137	\$3,373	(\$765)	-18.5%	<u>Underspending</u> As-Needed Design: (\$1.0M) (less than budgeted use of these contracts) <u>Offset Overspending</u> Equipment Purchase: \$0.5M (timing of vehicle purchases)
Total MWRA	\$82,220	\$71,324	(\$10,896)	-13.3%	

ATTACHMENT 4


TOTAL MWRA	FY17 Budget	FY17 Projection	Change FY17 Budget vs FY17 Projection	
			\$	%
EXPENSES				
WAGES AND SALARIES	\$ 101,858,897	\$ 98,693,997	\$ (3,164,900)	-3.1%
OVERTIME	4,192,676	4,353,199	160,523	3.8%
FRINGE BENEFITS	20,242,324	19,688,233	(554,091)	-2.7%
WORKERS' COMPENSATION	2,344,190	2,144,190	(200,000)	-8.5%
CHEMICALS	9,110,407	9,479,801	369,394	4.1%
ENERGY AND UTILITIES	21,541,078	20,825,402	(715,676)	-3.3%
MAINTENANCE	31,080,642	32,004,057	923,415	3.0%
TRAINING AND MEETINGS	435,481	414,086	(21,395)	-4.9%
PROFESSIONAL SERVICES	6,531,939	6,818,941	287,002	4.4%
OTHER MATERIALS	6,219,630	6,156,271	(63,359)	-1.0%
OTHER SERVICES	22,974,855	22,065,308	(909,547)	-4.0%
TOTAL DIRECT EXPENSES	\$ 226,532,117	\$ 222,643,485	\$ (3,888,632)	-1.7%
INSURANCE	\$ 1,997,898	\$ 1,932,428	(65,470)	-3.3%
WATERSHED/PILOT	24,291,268	23,900,159	(391,109)	-1.6%
HEEC PAYMENT	773,859	773,859	-	0.0%
MITIGATION	1,558,000	1,542,800	(15,200)	-1.0%
ADDITIONS TO RESERVES	(167,742)	(167,742)	-	0.0%
RETIREMENT FUND	3,132,624	3,132,624	-	0.0%
ADDITIONAL PENSION DEPOSIT	1,500,000	1,500,000	-	0.0%
POSTEMPLOYMENT BENEFITS	4,876,050	4,876,050	-	0.0%
TOTAL INDIRECT EXPENSES	\$ 37,961,957	\$ 37,490,178	\$ (471,779)	-1.2%
STATE REVOLVING FUND	\$ 86,971,915	\$ 82,906,636	(4,065,279)	-4.7%
SENIOR DEBT	268,472,557	263,027,504	(5,445,053)	-2.0%
SUBORDINATE DEBT	69,997,992	69,997,992	-	0.0%
LOCAL WATER PIPELINE CP	4,149,242	1,011,093	(3,138,149)	-75.6%
CURRENT REVENUE/CAPITAL	12,200,000	12,200,000	-	0.0%
CAPITAL LEASE	3,217,060	3,217,060	-	0.0%
DEBT PREPAYMENT	10,994,960	10,994,960	-	0.0%
VARIABLE RATE SAVINGS	-	(9,643,716)	(9,643,716)	0.0%
DEFEASANCE ACCOUNT	-	22,292,195	22,292,195	0.0%
DEBT SERVICE ASSISTANCE	(873,804)	(873,804)	-	0.0%
TOTAL DEBT SERVICE	\$ 455,129,920	\$ 455,129,920	\$ -	0.0%
TOTAL EXPENSES	\$ 719,623,994	\$ 715,263,583	\$ (4,360,411)	-0.6%
REVENUE & INCOME				
RATE REVENUE	\$ 694,878,500	\$ 694,878,500	-	0.0%
OTHER USER CHARGES	8,752,834	8,752,834	-	0.0%
OTHER REVENUE	6,519,171	13,719,271	7,200,100	110.4%
RATE STABILIZATION	-	-	-	0.0%
INVESTMENT INCOME	9,473,490	9,309,490	(164,000)	-1.7%
TOTAL REVENUE & INCOME	\$ 719,623,996	\$ 726,660,095	\$ 7,036,100	1.0%
VARIANCE:			\$ (11,396,512)	\$ (11,396,512)

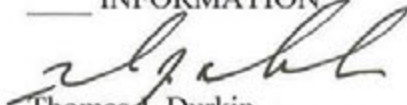
STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: March 15, 2017
SUBJECT: Biennial Review of MWRA's Investment Policy

COMMITTEE: Administration, Finance & Audit

X VOTE
— INFORMATION

Matthew R. Horan, Treasurer 
Christina C. DiLibero, Investment Manager
Preparer/Title


Thomas J. Durkin
Director of Finance

The State Finance and Governance Board's (SFGB) regulations require that every two years all state entities formally review and adopt an Investment Policy. The Board of Directors first approved the current version of MWRA's Investment policy on February 13, 2013. MWRA completed the required two year review in without making any substantive changes in 2015. After review by MWRA's Financial Advisor and Bond Counsel, staff are recommending reflecting the amendments to the General Bond Resolution and other minor edits to the Investment Policy.

RECOMMENDATION:

That in compliance with the State Finance and Governance Board's regulations (976 CMR 2.03), the Board adopts the amendments to the Investment Policy substantially in the form attached hereto.

DISCUSSION:

In 2010, the Commonwealth's Finance Advisory Board, now known as the State Finance and Governance Board's (SFGB) approved regulations (976 CMR 2.0-2.8) that require state entities to submit debt and investment policies to their governing bodies for approval every two years. Debt policies are reviewed in the even numbered years and investment policies in the odd numbered years and must be approved no later than March 31st. MWRA first submitted a debt policy in 2010 and an investment policy in 2011.

In February 2013, the Board approved the current version of MWRA's Investment Policy ("Policy") to provide a framework for the management of MWRA's investment portfolio. It was not designed to replace or revise the requirements found in the Amended and Restated General Revenue Bond Resolution but rather to codify those requirements in a separate document that may be approved by the Board in order to comply with the Commonwealth's State Finance and Governance Board's (SFGB) regulations. In

addition to the requirements of the Amended and Restated General Bond Resolution, the policy also discusses many of MWRA's practices related to safety of principal, liquidity and yield for its investments. The Policy also indicates that MWRA will invest and manage assets under its control accordance with the "Prudent Investor Rule" set forth in MGL Ch. 203C.

In 2007, MWRA's Board of Directors approved modifications to the General Bond Resolution which included some changes to the investment requirements. These changes included the addition of one new type of investment, clarifications to the lists of permissible investments by Fund, and removing the 15-year cap on the investment of money in the Debt Service Reserve Funds. These changes became effective along with the other amendments to the General Bond Resolution on April 23, 2015.

As part of the biennial review of the Investment Policy, staff requested that MWRA's Financial Advisor and Bond Counsel review the existing draft and provide any recommended updates. After review of the document, the only proposed edits to the main part of the document were to update the list of Funds and to reflect that the document now refers to the Amended and Restated General Bond Resolution. In addition to these changes, Appendix A was updated to reflect the changes contained in the Amended and Restated General Bond Resolution.

The SFGB has filed amendments to 976 CMR 2.03 and 2.04 which would change the current requirement that debt and investment policies be formally adopted by the Board of Directors and submitted to the SFGB every two years. Under the proposed amendment, new policies would only have to be submitted to the SFGB if there are substantive revisions.

Acceptance of this Policy does not constitute a change to the Authority's long standing procedures.

ATTACHMENT

Redlined Copy of Investment Policy



MWRA INVESTMENT POLICY

MASSACHUSETTS WATER RESOURCES AUTHORITY

INVESTMENT POLICY

- I. Purpose
- II. Scope
- III. Statements of Objectives
- IV. Standards of Care
- V. Suitable & Permitted Investments
- VI. Investment Monitoring and Reporting
- VII. Review of Policy
- Appendix A Excerpts from MWRA's General Bond Resolution

MASSACHUSETTS WATER RESOURCES AUTHORITY

INVESTMENT POLICY

I. Purpose:

The purpose of this document is to establish policies for governing the investment of the funds of the Massachusetts Water Resources Authority ("Authority"). The Investment Policy ("Policy") FIN.02 is designed to ensure the prudent management of funds, and the availability of operating and capital funds when required, while earning a competitive return within the Policy framework. The Policy will serve to further codify the permitted investment restrictions and requirements defined by the Authority's Amended and Restated General Bond Resolution.

II. Scope:

This Investment Policy applies to activities of the Authority with regard to investing all of the Authority's funds, which is specifically governed by Sections 522 and 523 of the Amended and Restated General Bond Resolution. The funds covered by this Policy, described in more detail in Appendix A, includes the following:

Per the Amended and Restated-General Bond Resolution:

1. Construction Fund
2. Cost of Issuance Fund
3. Revenue Fund
4. Operating Fund
5. Debt Service Fund
6. Subordinated Debt Service Fund
7. Debt Service Reserve Fund
8. Subordinated Debt Service Reserve Fund
9. Commonwealth Obligation Fund
10. Rebate Fund
11. Operating Reserve Fund
12. Insurance Reserve Fund
13. Renewal and Replacement Reserve Fund
14. Water Pollution Abatement Fund
15. Rate Stabilization Fund
16. Revolving Loan Fund
17. General Fund
18. Note Payment Fund
- ~~1. Construction Fund~~
- ~~2. Revenue Fund~~
- ~~3. Operating Fund~~
- ~~4. Debt Service Fund~~
- ~~5. Subordinated Debt Service Fund~~
- ~~6. Debt Service Reserve Fund~~
- ~~7. Subordinated Debt Service Reserve Fund~~
- ~~8. Revenue Bond Redemption Account~~
- ~~9. Community Obligation and Revenue Enhancement Fund (CORE)~~

- ~~10. Rate Stabilization Fund~~
- ~~11. Rebate Fund~~
- ~~12. Commonwealth Obligation Fund~~
- ~~13. Operating Reserve Fund~~
- ~~14. Insurance Reserve Fund~~
- ~~15. Renewal and Replacement Reserve Fund~~

III. Statements of Objectives:

The portfolio shall be structured with the objective of maximizing return on investments considering the risk constraints and the cash flow requirements of Authority. Preservation of principal is the foremost objective of the Investment Policy where investment safety is defined as the certainty of receiving principal plus accrued interest at a security's maturity.

Funds are invested in vehicles that provide the liquidity necessary to enable the Authority to meet operating, debt service, and other cash flow requirements. Portfolio liquidity is defined as the ability to sell a security on short notice near the security's par value. An adequate amount of funds will be kept in short-term money market investments to accommodate the reasonable cash needs of the Authority.

The primary objectives, in order of priority, of investment activity shall be safety, liquidity, and yield.

Safety: Safety of principal is the foremost objective of the investment program. Investments shall be undertaken in a manner that seeks to ensure the preservation of capital in the overall portfolio. The objective will be to mitigate credit risk and interest rate risk.

Credit Risk: The Authority will minimize credit risk, the risk of loss due to the failure of the security issuer or backer, by:

- i) Limiting investments to securities listed in the Amended and Restated General Bond Resolution;
- ii) Diversifying the investment portfolio to minimize the impact of potential losses from one type of security or individual issuer, excluding U.S. Treasuries, Federally Guaranteed Obligations, Government Sponsored Enterprises and the Massachusetts Municipal Depository Trust "MMDT".

Interest Rate Risk: The Authority will minimize interest rate risk, which is the risk that the market value of securities in the portfolio will fall due to changes in market interest rates.

Liquidity: The investment portfolio shall remain sufficiently liquid to meet all operating, debt service, and other cash flow requirements that may be reasonably anticipated.

Yield: The investment portfolio shall be designed with the objective of attaining an optimal market rate of return considering the investment risk constraints and liquidity needs outlined in the Amended and Restated General Bond Resolution and this Policy. Return on investment is

of secondary importance compared to the safety and liquidity objectives described above. With respect to the investment of funds under the Authority's Amended and Restated General Bond Resolution, such investment portfolios shall be designed with the objective of maintaining compliance with all yield restrictions imposed under applicable federal tax law.

IV. Standards of Care:

All participants in the investment process shall act responsibly and professionally. The Authority's portfolio shall be invested and managed in accordance with the "Prudent Investor Rule" set forth in MGL Ch. 203C. In general, the Authority will invest and manage the assets under its control as a prudent investor would, considering the purposes of the Authority and the terms under which such assets are held by the Authority, exercising reasonable care, skill, and caution.

V. Suitable and Permitted Investments:

Funds shall be invested in the securities permitted under the definition of Investment Securities and other applicable sections of the Amended and Restated General Bond Resolution. Appendix A contains an excerpt from the Amended and Restated General Bond Resolution listing the permitted investments.

VI. Investment Monitoring and Reporting:

On a continuing basis the Treasury department will monitor the market trends of instruments, prepare a monthly market valuation of all long-term investments and report results for use in preparing financial statements. These reports shall include a schedule showing principal amount, description of investment, maturity date, yield rate, and market value.

VII. Review of Policy

The Investment Policy shall be reviewed periodically, but in no case less than every two years as required by the Commonwealth's State Finance and Governance Board's Regulation. Any changes to the Investment Policy shall be adopted by the Board of Directors.

Appendix A

Excerpts from MWRA's Amended and Restated General Bond Resolution:

Section 101. Definitions (pages 7-9)

Section 521. Depositories (page 4952)

Section 522. Deposits (page 5053)

Section 523. Investment of Certain Funds (pages 50-5253-54)

Section 524. Valuation and Sale of Investments (page 5255)

"Investment Securities" shall mean and include any of the following securities, if and to the extent the same are at the time legal investments by the Authority of the funds to be invested therein and conform to the policies set forth in any investment guidelines adopted by the Authority or by a duly appointed subcommittee of its Board of Directors and in effect at the time of the making of such investment:

- (a) Government Obligations;
- (b) Certificates or receipts representing direct ownership of future interest or principal payments on Government Obligations or any obligations of agencies or instrumentalities of the United States of America which are backed by the full faith and credit of the United States, which obligations are held by a custodian in safekeeping on behalf of the holders of such receipts;
- (c) Bonds, debentures, notes or other evidences of indebtedness issued by any of the following: Federal Home Loan Mortgage Corporation; Student Loan Marketing Association; Federal Home Loan Banks; Federal National Mortgage Association; Government National Mortgage Association; Bank for Cooperatives; Federal Intermediate Credit Banks; Federal Financing Bank; Export-Import Bank of the United States; Federal Land Banks; or any other agency or instrumentality of the United States of America; or the International Reconstruction Development Bank;
- (d) All other obligations issued or unconditionally guaranteed as to the timely payment of principal and interest by an agency or person controlled or supervised by and acting as an instrumentality of the United States of America pursuant to authority granted by Congress;
- (e) (i) Interest-bearing time or demand deposits, certificates of deposit, or other similar banking arrangements with any government securities dealer, bank, trust company, savings and loan association, national banking association or other savings institution (including the Trustee), provided that such deposits, certificates, and other arrangements are fully insured by the Federal Deposit Insurance Corporation or the Federal Savings and Loan Insurance Corporation or (ii) interest-bearing time or demand deposits or certificates of deposit with any bank, trust company, national banking association or other savings institution (including the Trustee), provided such deposits and certificates are in or with a bank, trust company, national banking association or other savings institution whose long-term unsecured debt is rated in one of the three highest long-term rating categories by S&P and Moody's (if such rating agencies are Rating Agencies) and, if rated by any other Rating Agency, rated in the three highest rating categories of such Rating Agency, and provided further that with respect to (i) and (ii) any such obligations are held by the Trustee or a bank, trust company or national banking association (other than the issuer of such obligations, unless the issuer is the Trustee);
- (f) Repurchase agreements collateralized by securities described in subparagraphs (a), (b), (c) or (d) above with any registered broker/dealer or with any commercial bank, provided that (1) a specific written repurchase agreement governs the transaction, (2) the securities are held, free and clear of any lien, by the Trustee or an independent third party acting solely as agent for the Trustee, and such third party is (a) a Federal Reserve Bank, or (b) a bank which is a member of the Federal Deposit Insurance Corporation and which has combined capital, surplus and undivided profits of not less than \$25 million, and the Trustee shall have received written confirmation from such third party that it holds such securities, free and clear of any lien, as agent for the Trustee, (3) the repurchase agreement has a term of thirty days or less, or the Trustee will value the collateral securities no less frequently than monthly and

will liquidate the collateral securities if any deficiency in the required collateral percentage is not restored within five business days of such valuation, and (4) the fair market value of the collateral securities in relation to the amount of the repurchase obligation, including principal and interest, is equal to at least 102%;

(g) Money market funds rated in the highest rating category by S&P and Moody's (if such rating agencies are Rating Agencies) and, if rated by any other Rating Agency, rated in the highest category of such Rating Agency;

(h) Commercial paper rated in the highest rating category by S&P and Moody's (if such rating agencies are Rating Agencies) and, if rated by any other Rating Agency, rated in the highest category of such Rating Agency;

(i) Shares of investment companies or cash equivalent investments which are authorized to invest only in assets or securities described in subparagraphs (a), (b), (c), (d) and (f) above;

(j) Advance-Refunded Municipal Bonds;

(k) Short-term or long-term obligations the interest on which is excludable from gross income for Federal income tax purposes and that are rated in the three highest rating categories by S&P and Moody's (if such rating agencies are Rating Agencies) and if rated by any other Rating Agency, rated in the three highest rating categories of such Rating Agency, or shares of investment companies or cash equivalents which are authorized to invest primarily in such obligations;

(l) participation units in a combined investment fund created under Section 38A of Chapter 29 of the General Laws of the Commonwealth;

(m) investment contracts with, or guaranteed by, banks or other financial institutions whose long-term unsecured debt or claims-paying ability is rated in one of the three highest rating categories by S&P and Moody's (if such rating agencies are Rating Agencies) and, if rated by any other Rating Agency, rated in the three highest rating categories of such Rating Agency; ~~and-~~

(n) forward purchase agreements for the delivery of securities described in subparagraph (a), (b), (c), (d), (h) or (k) above from financial institutions rated in one of the three highest rating categories by S&P and Moody's (if such rating agencies are Rating Agencies) and, if rated by any other Rating Agency, rated in one of the three highest rating categories by such Rating Agency; and

(no) any other investment authorized pursuant to an amendment or supplement hereto pursuant to Section 801(i).

Obligations of any Fiduciary or an affiliate thereof may be Investment Securities, provided that they otherwise qualify.

"Local Body" shall mean, a city, town, district, commission or other political subdivision or instrumentality of the Commonwealth receiving water supply or sewer services from the Authority and responsible for providing by itself or through an officer, board, department or division thereof local water supply or local sewer services; provided that in any case where local water supply or local sewer services within the territorial boundaries of a Local Body are provided in whole or in part by a political

subdivision or public instrumentality of the Commonwealth separate from such Local Body, the term Local Body shall mean, within the service area thereof, that political subdivision or public instrumentality.

SECTION 521. Depositaries.

(a) All moneys or securities held by the Trustee under the provisions of this Resolution shall constitute trust funds and the Trustee may, and shall, if directed in writing by an Authorized Representative of the Authority, deposit such moneys or securities with one or more Depositaries in trust for the Trustee. Moneys or securities in the Operating Fund shall be deposited by the Authority with one or more Depositaries in trust for the Authority. All moneys or securities deposited under the provisions of this Resolution with the Trustee or any Depository shall be held in trust and applied only in accordance with the provisions of this Resolution, and each of such Funds established by this Resolution shall be a trust fund for the purposes thereof. The Authority and the Trustee shall instruct each Depository that any moneys or securities credited to a Fund or an Account hereunder which are deposited with such Depository shall be identified to be part of such Fund or Account and subject to the pledge in favor of the Trustee created under this Resolution. Prior to the first deposit of any moneys or securities with each Depository, the Authority and the Trustee shall obtain from such Depository its agreement to serve as agent of the Trustee in holding such moneys or securities in trust in favor of the Trustee and the contract or other written instrument between the Authority and such Depository governing the establishment and operation of such account shall provide the moneys or securities from time to time deposited with such Depository shall be held by such Depository as such agent in trust in favor of the Trustee; provided that, except as otherwise expressly provided herein, the Authority shall be permitted at any time to make withdrawals from and write checks or other drafts against any account held by the Authority and established with such Depository and apply the same for the purposes specified in this Resolution and, subject to Section 523 hereof, the Authority shall be permitted to invest amounts in any such account in Investment Securities.

(b) Each Depository holding moneys or securities in trust for the Trustee shall be a bank or trust company organized under the laws of the Commonwealth or a national banking association (having its principal office within the Commonwealth), having capital stock, surplus and undivided earnings aggregating at least \$100,000,000 (or such greater amount as set forth in a Supplemental Resolution) and willing and able to accept the office on reasonable and customary terms and authorized by law to act in accordance with the provisions of this Resolution.

(c) Moneys and securities credited to any Fund or Account may be commingled with moneys and securities credited to other Funds or Accounts for the purposes of establishing checking or other bank accounts for purposes of investing funds or otherwise; provided, however, the Trustee and the Authority shall at all times maintain or cause to be maintained accurate books and records reflecting the amounts credited to the respective Funds and Accounts held by each of them. All withdrawals from any commingled moneys or securities shall be charged against the proper Fund or Account and no moneys shall be withdrawn from commingled moneys if there is not on credit to the Fund or Account to be charged sufficient funds to cover such withdrawal.

SECTION 522. Deposits.

(a) All Revenues and other moneys held by any Depository under this Resolution may be placed in a demand or time deposit, if and as directed by the Authority, provided that such deposits shall permit the moneys so held to be available for use at the time when needed. All such moneys deposited with a Fiduciary, acting as a Depository, may be made in the commercial banking department of any Fiduciary which may honor checks and drafts on such deposit with the same force and effect as if it were not such Fiduciary. All moneys held by any Fiduciary, as such, may be deposited by such Fiduciary in its banking department on demand or, if and to the extent directed by the Authority and acceptable to such Fiduciary, on time deposit, provided that such moneys on deposit be available for use at the time when needed.

(b) All moneys deposited with the Trustee and each Depository shall be credited to the particular Fund or Account to which such moneys belong.

SECTION 523. Investment of Certain Funds.

(a) Moneys held in the Debt Service Fund, the Subordinated Debt Service Fund, and the Note Payment Fund shall be invested and reinvested by the Trustee to the fullest extent practicable in Investment Securities (other than those of the type described in ~~clauses (a), (b), (c), (d), (f), (h), (i), (j), (k), (l) or (m)~~ subparagraph (e) of the definition of Investment Securities in Section 101;) which mature not later than at such times as shall be necessary to provide moneys when needed for payments to be made from such Funds. Subject to ~~Section~~ Sections 510(d) and 511(d) hereof, moneys held in the Debt Service Reserve Fund; and the Subordinated Debt Service Reserve Fund; ~~and the Community Obligation and Revenue Enhancement Fund;~~ shall be invested and reinvested by the Trustee to the fullest extent practicable in Investment Securities (other than those of the type described in ~~clauses (a), (b), (c), (d), (i), (j), (k), (l) or (m)~~ subparagraph (e) of the definition of Investment Securities in Section 101) which mature not later than at such times as shall be necessary to provide moneys when needed for payment to be made from such Fund; ~~but in no event later than fifteen years from the date of such investment~~ Funds. Moneys held in any other Fund or Account established under this Resolution may be invested and reinvested in Investment Securities which mature not later than such times as shall be necessary to provide moneys when needed for payments to be made from such Funds. The Trustee shall make all such investments of moneys held by it in accordance with written instructions from any Authorized Representative of the Authority, which may for this purpose include one or more investment advisors designated in writing by such Representative from time to time. In making any investment in any Investment Securities with moneys in any Fund or Account established under this Resolution, the Authority may, and may instruct the Trustee to, combine such moneys with moneys in any other Fund or Account, but solely for purposes of making such investment in such Investment Securities.

(b) Interest (net of that which represents a return of accrued interest paid in connection with the purchase of any investment) and other investment earnings on any moneys or investments in the Funds and Accounts, other than the Construction Fund, the Cost of Issuance Fund, the Operating Fund, the Note Payment Fund, the Debt Service Fund, the Debt Service Reserve Fund, the Subordinated Debt Service ~~Reserve Fund~~ and the ~~Community Obligation and Revenue Enhancement~~ Subordinated Debt Service Reserve Fund shall be paid into the Revenue Fund, on the last Business Day of each month. Interest (net of that which represents a return of accrued interest paid in connection with the purchase of any investment) and other investment earnings on any moneys or investments in the Cost of Issuance Fund, the Operating Fund, the Debt Service Fund, the Subordinated Debt Service Fund and the Note Payment Fund shall be retained in the Fund in which such earnings accrued; provided that the Authority may direct

that the earnings on moneys in the Operating Fund may be deposited in the Revenue Fund. Interest (net of that which represents a return of accrued interest paid in connection with the purchase of any investment) and other investment earnings on any moneys or investments in the Construction Fund attributable to the first series of Secured Bonds issued hereunder shall be retained in the Construction Fund. Interest (net of that which represents a return of accrued interest paid in connection with the purchase of any investment) and other investment earnings on any other moneys or investments in the Construction Fund attributable to any subsequent series of Secured Bonds shall be paid on the last Business Day of each month, to the related Subaccounts of the Debt Service Fund (or the Subordinated Debt Service Fund if so specified in the applicable Supplemental Resolution) first to the Interest Account and second to the Principal Account; provided, however, that the Authority may from time to time direct that all or a portion of such earnings may be retained in the Construction Fund for any period of time if there shall be provided to the Trustee a Certificate of an Authorized Officer of the Authority on the date of such direction and on each July 1 thereafter, so long as such direction remains in effect, (i) certifying for the most recent preceding period of twelve consecutive months, Revenues Available for Bond Debt Service were at least equal to the **CombinedPrimary** Bond Coverage Requirement and (ii) projecting that Revenues Available for Bond Debt Service will be at least equal to the **CombinedPrimary** Bond Coverage Requirement for both the current and, if the period so directed by Authority includes it, the following Fiscal Year. Earnings retained in the Construction Fund will not be included in the calculation of Revenues Available for Bond Debt Service. Interest (net of that which represents a return of accrued interest paid in connection with the purchase of any investment) and other investment earnings on any moneys or investments in the Debt Service Fund; ~~and the Debt Service Reserve Fund; and the Community-Obligation and Revenue Enhancement-Fund~~ shall be paid on the last Business Day of each month, on a pro rata basis based on the required deposits to each Series Subaccount therein pursuant to Section 506(a), first to the Interest Account of the Debt Service Fund and second to the Principal Account of the Debt Service Fund; provided however, that the Authority may direct that investment earnings on any moneys or investments in the Debt Service Reserve ~~Fund or the Community-Obligation and Revenue Enhancement-Fund~~ may be deposited for such period of time as the Authority may determine in the Revenue Fund or the Construction Fund if the Authority shall obtain a Bond Counsel's Opinion to the effect that such application of earnings shall not adversely affect the exclusion of interest on any Tax Exempt Indebtedness from gross income of the holder for federal income tax purposes. Interest (net of that which represents a return of accrued interest paid in connection with the purchase of any investment) and any other investment earnings on the Subordinated Debt Service Reserve Fund shall be paid on the last Business Day of each month, on a pro rata basis based on the required deposits to each Series Subaccount therein pursuant to Section 506(a), first to the Interest Account of the Subordinated Debt Service Fund and second to the Principal Account of the Subordinated Debt Service Fund; provided, however, that the Authority may direct that investment earnings on any moneys or investments in the Subordinated Debt Service Fund may be deposited for such period of time as the Authority may determine in the Revenue Fund or the Construction Fund if the Authority shall obtain a Bond Counsel's Opinion to the effect that such application of earnings shall not adversely affect the exclusion of interest on any Tax Exempt Indebtedness from gross income of the holder for federal income tax purposes.

(c) Notwithstanding the foregoing provisions of this Section 523, the Authority may direct that investment earnings reasonably expected to be subject to the requirements of Section 148(f) of the Code or the Treasury Regulations applicable thereto may be deposited directly to the Rebate Fund to the extent desirable to comply with the requirements of section 148(f) of the Code or the Treasury Regulations applicable thereto.

(d) All Investment Securities acquired with moneys in any Fund or Account, shall be held by the Trustee in pledge or by a Depository as agent in pledge in favor of the Trustee in accordance with Section 522 hereof.


(e) Nothing in this Resolution shall prevent any Investment Securities acquired as investments of Funds held under this Resolution from being issued or held in book-entry form on the books of the Department of the Treasury of the United States or the Federal Reserve Bank.

SECTION 524. Valuation and Sale of Investments. Obligations purchased as an investment of moneys in any Fund created under the provisions of this Resolution shall be deemed at all times to be a part of such Fund and any profit realized from the liquidation of such investment shall be credited to such Fund and any loss resulting from the liquidation of such investment shall be charged to such Fund.

In computing the amount in any Fund created under the provisions of this Resolution for any purpose provided in this Resolution, obligations purchased as an investment of moneys therein shall be valued at the amortized cost of such obligations or the market value thereof, whichever is lower. As used herein the term "amortized cost", when used with respect to an obligation purchased at a premium above or a discount below par, means the value as of any given time obtained by dividing the total premium or discount at which such obligation was purchased by the number of days remaining to maturity on such obligation at the date of such purchase and by multiplying the amount thus calculated by the number of days having passed since such purchase; and (i) in the case of an obligation purchased at a premium by deducting the product thus obtained from the purchase price, and (ii) in the case of an obligation purchased at a discount by adding the product thus obtained to the purchase price. Any deficiency resulting from a decrease in the valuation of investments held in the Debt Service Reserve Fund may be disregarded for purposes of calculating deposits required pursuant to Section 506 (but not for purposes of deposits required pursuant to Section 401(b)) provided that the amount on deposit in the Debt Service Reserve Fund is at least 95% of the Debt Service Reserve Fund Requirement. The accrued interest paid in connection with the purchase of any obligation shall be included in the value thereof until interest on such obligation is paid. Such computation shall be made annually on June 30 for all Funds and at such other times as the Authority shall determine or as may be required by this Resolution.



Except as otherwise provided in this Resolution, the Trustee shall sell at the best price obtainable, or present for redemption, any obligation so purchased as an investment whenever it shall be requested in writing by an Authorized Representative of the Authority so to do. Whenever it shall be necessary in order to provide moneys to meet any payment or transfer from any Fund held by the Trustee, the Trustee shall sell at the best price obtainable or present for redemption such obligation or obligations designated by an Authorized Representative of the Authority necessary to provide sufficient moneys for such payment or transfer; provided, however, that if the Authority fails to provide such designation promptly after request thereof by the Trustee, the Trustee may in its discretion select the obligation or obligations to be sold or presented for redemption. The Trustee shall not be liable or responsible for any loss resulting from the making of any such investment or the sale or redemption of any obligation in the manner provided above.


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: March 15, 2017
SUBJECT: Approval of the Seventy-Fifth Supplemental Resolution

COMMITTEE: Administration, Finance & Audit

VOTE
 INFORMATION

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


 Thomas J. Durkin
 Director of Finance

RECOMMENDATION:

To adopt the Seventy-Fifth Supplemental Resolution authorizing the issuance of up to \$391,415,000 of Massachusetts Water Resources Authority General Revenue Bonds and Massachusetts Water Resources Authority General Revenue Refunding Bonds and the supporting Issuance Resolution.

DISCUSSION:

The bonds to be issued under this authorization include \$80.0 million in new money and \$311.4 million in refunding bonds. The \$80.0 million in new money will be used to fund ongoing capital improvements including the Chelsea Creek Upgrades, Alewife Brook Pump Station Rehabilitation, Deer Island asset protection, Wachusett Aqueduct Pump Station, and the Northern Intermediate High Section 89/29 construction. In addition to the new money, this authorization would allow for the issuance of up to \$311.4 million in General Revenue Refunding Bonds. The refunding can be divided into two pieces, \$282.7 million to refund 2005 Series A and B bonds for interest rate savings and \$28.8 million to fix out a portion for MWRA's outstanding variable rate debt. The following table provides a breakdown of the new money and refunding components of the proposed transaction.

	Proposed Issuance Amount
New Money Bonds	\$ 80,000,000
Interest Savings Refunding	\$ 282,650,000
Variable Rate Bonds Refunded with Fixed Rate	\$ 28,765,000
Total Authorization	\$ 391,415,000

MWRA's debt policy established the parameters for staff to utilize when reviewing a refunding for interest rate savings. The criteria are as follows:

- overall savings has a present value of 4.0% or greater;

- individual maturities have a 3% present value savings or an option value above 70%; and
- the efficiency of the escrow is greater than 50%.

In addition to these criteria, bonds may be refunded or restructured to meet particular organizational and/or strategic needs when it is advantageous to do so. All refunding transactions require the approval of the Board of Directors.

Currently, 2005 Series A and B are the only fixed rate bonds that meet the refunding threshold. This lack of other refunding candidates among the fixed rate bonds is primarily a result of the 2016 Series C and D transactions, which refunded approximately \$863.9 million of outstanding bonds. As a result of those transactions, all of the bonds with near term call dates that were viable refunding candidates have been refunded. Shorter periods of time between the issuance of the refunding and the retirement of the old bonds results in less interest expense. Since reinvestment rates still remain low, the cost of paying double interest for a discrete period of time is not sufficiently offset by the escrow's earnings to make it economic to refund bonds with longer call dates.

The 2005 Series A and the majority of the 2005 Series B bonds were previously advance refunded¹ and as a result not eligible for refunding during the 2016 transactions because U.S. Treasury regulations allow bonds to be advance refunded only one time. The 2005 Series A and B bonds have an August 1, 2017 call date which makes them eligible for a current refunding after May 4, 2017. The short escrow period on these bonds makes them strong refunding candidates. In addition to being refunding candidates, the bonds are excellent targets for defeasance and as a result \$31 million of the 2005 Series A bonds are not included in the proposed refunding. Staff anticipate including these bonds as part of the 2017 defeasance which will be presented to the Board for approval in May 2017.

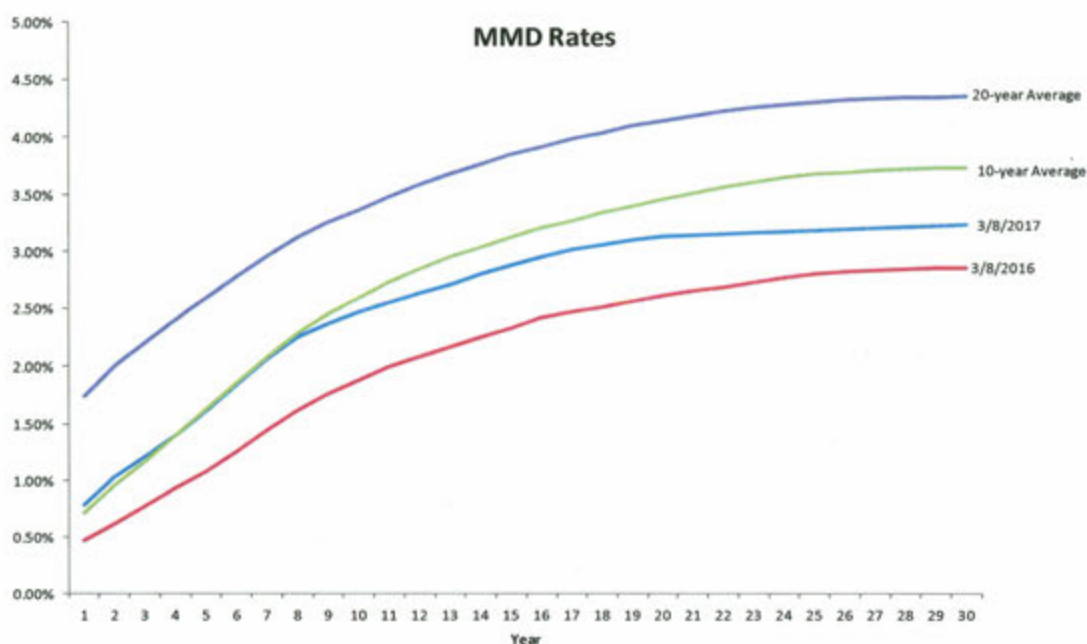
In addition to the 2005 Series A and B bonds, MWRA has the opportunity to refund approximately \$28.8 million of MWRA's variable rate bonds with maturities between 2020 and 2022 with debt with fixed rate debt. Based on the current yield curve, MWRA could lock in an All-In True interest cost of 1.67%. While this is higher than the All-In rate (interest, liquidity and remarketing costs) MWRA is currently experiencing on these bonds, it is likely that over the next five years short-term interest rates will increase. The debt service for the FY18 to FY22 period on the proposed fixed rate bonds is approximately \$3.1 million lower than the projection in the rates model. If short-term rates only increase by 50 basis points over the next five years, replacing these bonds with fixed rate bonds would still provide a cost savings to MWRA. MWRA's ability to refund more than the proposed \$28.8 million of variable rate bonds is limited by the Debt Service Reserve Requirement. Refunding more variable rate bonds from the subordinated lien to the senior lien would result in MWRA having to issue additional bonds to fund the reserve, resulting in higher debt service costs.

¹ An advance refunding occurs when the proceeds of a new tax-exempt bond transaction are utilized to refund outstanding tax-exempt debt more than 90 days prior to the call date.

The table below summarizes the available refunding candidates.

Series	Total Outstanding	Projected FY17 Defeasance	Refunding Bonds	Call Date
2005A	\$ 238,405,000	\$ 31,000,000	\$ 207,405,000	August 1, 2017
2005B	\$ 75,245,000	\$ -	\$ 75,245,000	August 1, 2017
2008A	\$ 234,845,000	\$ -	\$ 21,955,000	Continuous
2012F	\$ 58,885,000	\$ -	\$ 6,810,000	Continuous
Total	\$ 607,380,000	\$ 31,000,000	\$ 282,650,000	

While interest rates have risen over the historic lows experienced last year, rates are still at relatively low levels when compared to the 10 and 20 average Municipal Market Data (MMD) fixed rates. The following graph details the relationship between the current and historic rates.



As of March 8, 2017, the refunding of the 2005 Series A and B bond is projected to result in approximately \$51.0 million in gross savings and \$40.3 million or 12.9% present value savings. The following table presents the savings by fiscal year.

Fiscal Year	Prior Debt Service	Refunding Debt Service	Savings	Fiscal Year	Prior Debt Service	Refunding Debt Service	Savings
2017	\$ 13,639,969	\$ 13,058,557	\$ 581,412	2027	\$ 15,139,250	\$ 12,246,250	\$ 2,893,000
2018	\$ 13,969,475	\$ 11,635,450	\$ 2,334,025	2028	\$ 15,146,500	\$ 12,256,750	\$ 2,889,750
2019	\$ 13,969,475	\$ 11,635,450	\$ 2,334,025	2029	\$ 15,159,250	\$ 12,267,250	\$ 2,892,000
2020	\$ 13,969,475	\$ 11,635,450	\$ 2,334,025	2030	\$ 15,066,250	\$ 12,172,000	\$ 2,894,250
2021	\$ 32,219,475	\$ 29,325,450	\$ 2,894,025	2031	\$ 26,961,750	\$ 24,070,500	\$ 2,891,250
2022	\$ 33,126,350	\$ 30,232,850	\$ 2,893,500	2032	\$ 26,965,500	\$ 24,072,500	\$ 2,893,000
2023	\$ 53,880,600	\$ 50,990,650	\$ 2,889,950	2033	\$ 26,966,250	\$ 24,072,250	\$ 2,894,000
2024	\$ 41,986,850	\$ 39,097,250	\$ 2,889,600	2034	\$ 26,961,500	\$ 24,067,500	\$ 2,894,000
2025	\$ 15,127,913	\$ 12,233,500	\$ 2,894,413	2035	\$ 26,958,750	\$ 24,066,000	\$ 2,892,750
2026	\$ 15,130,663	\$ 12,236,500	\$ 2,894,163	Total	\$ 431,646,098	\$ 380,672,961	\$ 50,973,137

Long-term fixed interest rates would have to increase by 155 basis points for this transaction to fall below the 4% threshold. Similar to the 2016 Series C and D bonds, staff intend to issue the 2017 refunding bonds as "Green Bonds". Green Bonds are marketed to environmentally responsible investment funds. While there is no required certification for Green Bonds, MWRA will be required to document that the funds were used to pay for projects that provided an environmental benefit. Given MWRA's mission its projects are green by their nature.

Under the terms of the last procurement approved by the Board in January 2016, Barclays Capital Inc. will serve as the lead underwriter for this transaction. Staff will continue to work with MWRA's financial advisor to determine the most appropriate size and structure for the transaction.

BUDGET/FISCAL IMPACT:

There are sufficient funds available in the FY17 and Proposed FY18 CEBs to pay the debt service costs associated with these borrowings. The potential refunding for savings component will reduce future debt service. The amount of the potential reduction will be determined based on market conditions and the ultimate pricing of the refunding transaction.



MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard
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Executive Director

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WASTEWATER POLICY & OVERSIGHT COMMITTEE MEETING

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

to be held on

Wednesday, March 15, 2017

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

Time: Immediately following AF&A Comm.

AGENDA

A. Approvals

1. Approval of Advisory Board Recommended Modifications to the Program Guidelines and Annual Update for the Infiltration/Inflow Local Financial Assistance Program
2. Delegation of Authority to Execute a Contract for Temporary Back-up Generators for the Deer Island Treatment Plant (materials to follow)

B. Contract Awards

1. Combustion Turbine Generator Maintenance – Deer Island Treatment Plant: O'Connor Corporation, Contract S549
2. Reading Extension Sewer and Metropolitan Sewer Rehabilitation (Sections 73/74/75/46): Green Mountain Pipeline Services, Contract 7164 (materials to follow)
3. Dorchester Interceptor Sewer (Sections 240/241/242) Rehabilitation Design, Construction Administration and Resident Engineering/Inspection Services: CDM Smith Inc., Contract 7512

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the
Wastewater Policy and Oversight Committee

February 15, 2017

A meeting of the Wastewater Policy and Oversight Committee was held on February 15, 2017 at the Authority headquarters in Charlestown. Chairman Flanagan presided. Present from the Board were Messrs. Blackmon, Foti, Pappastergion, Peña, Vitale, and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Mike Hornbrook, Dave Duest, Rick Adams, Carolyn Francisco Murphy, John Vetere, Ethan Wenger, Nava Navanandan, Dave Pottle, and Bonnie Hale. The meeting was called to order at 11:30 a.m.

Contract Awards

*Long-Term Energy Supply Alternatives Analysis, Deer Island Treatment Plant: Burns & McDonnell, Contract 6963

Staff gave a presentation on the scope of the contract and there was general discussion and question and answer, particularly about the large difference in the number of hours proposed by the two bidders and the Selection Committee rankings. The general consensus was to postpone consideration of the item (ref. agenda item B.1).

**Oxygen Generation Services, Deer Island Treatment Plant: Solutionwerks, Inc., Contract S562

The Committee recommended approval of the contract award (ref. agenda item A.2).

**Nut Island Headworks Odor Control and HVAC Improvements Inspections, Evaluations, Design, Construction Administration and Resident Engineering Services: Hazen & Sawyer, PC, Contract 7517

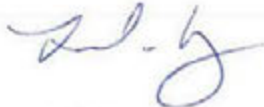
There was detailed discussion and question and answer on the large discrepancy between the Engineer's Estimate and the bids received. The item was referred to the Board pending receipt of additional information at the afternoon Board meeting (ref. agenda item B.3)

The meeting adjourned at 12:10 p.m.

* Postponed at February 15, 2017 Board of Directors meeting.

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

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: March 15, 2017
SUBJECT: Approval of Advisory Board Recommended Modifications to the Program Guidelines and Annual Update for the Infiltration/Inflow Local Financial Assistance Program

COMMITTEE: Wastewater Policy & Oversight

 INFORMATION
 X VOTE

Carolyn M. Fiore, Deputy Chief Operating Officer
Jon F. Szarek, Project Manager
Carl H. Leone, Senior Program Manager
Preparer/Title


Michael J. Hornbrook
Chief Operating Officer

The MWRA Advisory Board has recommended modifications to the Infiltration/Inflow Local Financial Assistance Program to include several new eligible tasks, such as flow monitoring and sewer inspection equipment, to assist communities in meeting their I/I reduction goals. Staff concur with these recommendations as described below. This staff summary also includes the annual update on the I/I Financial Assistance Program.

RECOMMENDATION:

To approve modifications to the Infiltration/Inflow Local Financial Assistance Program Guidelines to expand project funding eligibility substantially as detailed in the MWRA Advisory Board's summary provided as Attachment 1. Modifications to the Program Guidelines are recommended to be retroactively effective as of January 1, 2017.

DISCUSSION:

Recommendation to Expand Financial Assistance Project Funding Eligibility

At its meeting on January 19, 2017, the MWRA Advisory Board approved the list of five discussion items for expansion of eligible tasks under the Infiltration/Inflow (I/I) Local Financial Assistance Program (see Attachment 1). Recommended items 1 and 2 make costs for purchasing permanent flow monitoring and sewer inspection equipment eligible under the MWRA's community grant/loan program. Recommended items 3, 4, and 5 expand the scope of common sewer system planning tasks (building inspections, public outreach, database development, and geographic information system (GIS) mapping) to clearly identify as eligible work that often overlaps multiple public utilities (separate sewers, combined sewers, storm drains, underdrains, etc.). The recommended grant/loan Program Guideline modifications will allow communities more flexibility when planning local projects. Member communities are likely to increase the effectiveness of their investments and realize cost savings via holistic infrastructure planning.

Annual Update

MWRA's Infiltration/Inflow (I/I) Local Financial Assistance Program was initiated in May 1993 to provide funding to member sewer communities to perform I/I reduction and sewer system rehabilitation projects within their locally-owned collection systems. The program's goal is to assist member communities in improving local sewer system conditions to reduce I/I and ensure ongoing repair/replacement of the collection system. The financial assistance program is a critical component of MWRA's Regional I/I Reduction Plan.¹ Specifically, local sewer system rehabilitation projects are intended to at least offset ongoing collection system deterioration to prevent a net increase in regional I/I. In the long-term, system rehabilitation should result in lower I/I, which will allow for future increases in sanitary flows (residential, commercial, industrial, and institutional) without a net increase in total wastewater flow to the Deer Island Treatment Plant. The program fosters efficient operation and maintenance of local sewer systems.

A total of \$460.75 million in grant and loan funds have been allocated to member sewer communities based on their respective share of sewer charges. All 43 sewer customer communities are participating in the financial assistance program. Through February 2017, a total of \$322 million has been distributed to member communities to fund 524 local sewer rehabilitation projects over 24 years. The remaining \$139 million is approved for distribution through FY25. Attachment 2 provides a summary of funds allocated, distributed, and remaining for each member community. Attachment 3 provides more detail on community distributions by program phase including the most recent addition of Phases 9 and 10 funds at \$80 million each. All scheduled community loan repayments have been made, a total of \$154 million to date.

In FY15, the addition of Phases 9 and 10 (as recommended by the MWRA Advisory Board) increased the total program budget by \$160 million to \$460.75 million and extended the distribution of grants and loans through FY25. The grant/loan split was reconfigured for Phases 9 and 10 to 75% grant and 25% interest-free loan (previously 45% grant and 55% loan) and the loan repayment period was extended to 10 years (previously 5 years). Program funds are allocated among the 43 MWRA sewer communities based on respective share of wholesale sewer charges. Phase 9 funds began to be distributed in FY15. Phase 10 funds become available to each community in the fiscal year following distribution of 50% or more of that community's Phase 9 funds. A status update on community funding by Phase is provided in the table below.

Funding Phases	Year Initiated	Total Funding (\$ millions)	Funds Distributed (\$ millions)	Funds Remaining (\$ millions)	Number of Communities with Funds Remaining
1-5	FY93-FY05	\$ 180.75	\$ 180.75	\$ 0.00	0 of 43
6	FY07	\$ 40.00	\$ 38.36	\$ 1.64	3 of 43
7	FY10	\$ 40.00	\$ 36.14	\$ 3.86	5 of 43
8	FY13	\$ 40.00	\$ 28.92	\$ 11.08	13 of 43
9	FY15	\$ 80.00	\$ 28.18	\$ 51.82	24 of 43
10	FY15	\$ 80.00	\$ 9.85	\$ 70.15	37 of 43
TOTAL		\$ 460.75	\$ 322.20	\$ 138.55	

¹ As required by the National Pollutant Discharge Elimination System (NPDES) Permit for the Deer Island Plant, MWRA's Regional Infiltration/Inflow Reduction Plan was approved by MassDEP in November 2002. MWRA is required to report annually on the I/I Reduction Plan and present estimates of I/I. The Regional I/I Reduction Plan and Annual I/I Reduction Report are online at: <http://www.mwra.com/comsupport/communitysupportmain.html>.

Grant and loan funding is provided to local communities for eligible I/I reduction projects including planning, design, construction, and engineering services during construction. These projects generally take one to three years to complete. Seventy-six percent of the funds distributed to date have financed local construction projects. The table below details funds distributed by project phase for both completed and ongoing projects.

<u>PROJECT PHASE</u>	<u>COMPLETED PROJECTS (\$ millions)</u>	<u>ONGOING PROJECTS (\$ millions)</u>	<u>TOTAL (\$ millions)</u>
Planning/Study:	\$ 37.2	\$ 8.7	\$ 45.9 (14%)
Design:	11.9	3.2	15.1 (5%)
Construction:	181.6	62.1	243.7 (76%)
Eng. Services During Const.:	12.1	5.4	17.5 (5%)
TOTAL	\$ 242.8 (75%)	\$ 79.4 (25%)	\$ 322.2 (100%)

Program Results

Through February 2017, a total of 524 local I/I reduction and sewer system rehabilitation projects have been funded through the MWRA’s grant/loan program. Cumulative results for the program are summarized below.

Results for planning/inspection projects:

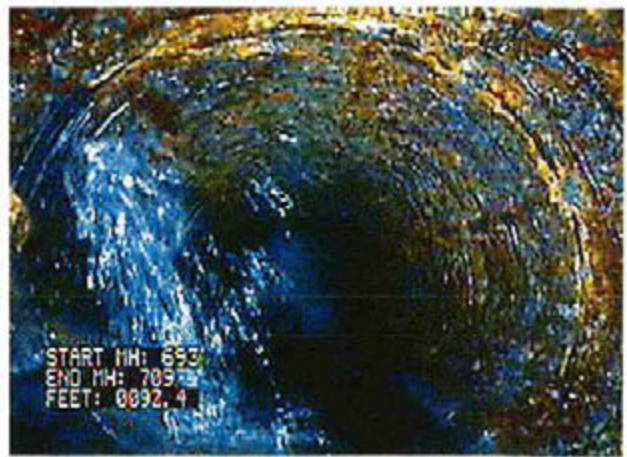
- 1,906 miles of sewer TV inspected
- 1,338 miles of sewer flow isolated
- 1,308 miles of sewer smoke tested
- 54,830 sewer manholes inspected
- 77,894 buildings inspected



Smoke Testing Confirms House Downspout is an Inflow Source Connected to the Sewer



Sewer TV Inspection



Infiltration Source Identified by Sewer TV Inspection

Results for projects targeting infiltration reduction:

- 57 miles sewer replaced
- 161 miles cured-in-place (CIP) pipe liner
- 147 miles sewer tested/chemically sealed
- 2,396 sewer spot repairs
- 11,771 service connection repairs
- 4.8 miles underdrains sealed



Sewer Replacement using Pipe Bursting



Installation of New PVC Sewer Pipe

Results for projects targeting inflow reduction:

- 1,020 catch basins disconnected
- 44 miles of new or replaced storm drains
- 15,980 manholes rehabilitated/sealed
- 2,908 manhole covers replaced or inflow seals installed
- 433 sump pumps redirected
- 5,209 downspouts/area drains disconnected



Sewer Manhole at Beach - Raised and Sealed

I/I and Stormwater Impacts on the Collection System

Wastewater discharged by member sewer communities to MWRA is influenced by seasonal and wet-weather conditions related to infiltration, inflow, and storm water in combined sewer systems. Infiltration/Inflow (I/I) is extraneous water that enters all wastewater collection systems through a variety of sources.

Infiltration is groundwater that enters the collection system through physical defects such as cracked pipes/manholes or deteriorated joints. Typically, many sewer pipes and sewer service laterals are below the surrounding groundwater table. Therefore, leakage into the sewer (infiltration) is a broad problem that is difficult and expensive to identify and reduce.



Infiltration in a Sanitary Sewer

Inflow is extraneous flow entering the collection system through point sources and may be directly related to storm water run-off from sources such as roof leaders, yard and area drains, basement sump pumps, manhole covers, cross connections from storm drains or catch basins, leaking tide gates, etc. Inflow causes a rapid increase in wastewater flow that occurs during and after storms. The volume of inflow entering a collection system typically depends on the magnitude and duration of a storm event, as well as related impacts such as snowmelt and storm tides.



Inflow into a Manhole

Storm Water in Combined Sewers is, by design, collected in the combined sewer system to be transported to a downstream treatment facility. Additional system capacity is available via combined sewer overflow (CSO) outfalls and storage facilities that are needed during extreme events.

Attachment 4 provides a graph of long-term regional flow data for the Deer Island Treatment Plant collection system and annual rainfall. The long-term average daily flow for the total system is about 355 mgd (last 28 years) and the average annual rainfall is 42.5 inches (Boston Logan Airport Data). Total system minimum dry-weather flows drop to 220 mgd; peak wet-weather flow during significant rainfall exceeds the 1,270 mgd plant capacity (more than 3.5 times the average flow), and significant additional system capacity is available at combined sewer overflow (CSO) outfalls and storage facilities. Few problems exist within local and regional sewer systems during dry weather or as a result of small and medium storm events. However, I/I and stormwater from combined sewers reduce pipeline capacity in the collection system that would otherwise be available to transport sanitary flow. The result, during extreme storm events that occur during periods of high groundwater, may be sewer system surcharging and sanitary sewer overflows (SSOs). I/I also results in the transport of groundwater and surface water out of the natural watershed.

Over the last five years (2012-2016), MWRA's average daily flow of 295 mgd has been well below the long-term average (60 mgd or 17% below average); while the five-year average rainfall has been 11% below average at 38 inches. During the recent drought, annual rainfall recorded at Boston-Logan has been only 35 inches (2015) and 33 inches (2016). As a result, wastewater flows to Deer Island have been historically low at about 290 mgd (2015 average daily flow) and 275 mgd (2016 average daily flow).

Attachment 5 shows the five-year running averages (flow and rainfall) as a means of smoothing the annual variability in the long-term data displayed in Attachment 4. The five-year running average daily flow has declined from approximately 390 mgd to approximately 300 mgd, a reduction of 90 mgd or 23% of wastewater flow tributary to the Deer Island Treatment Plant.

The estimated average daily flow reduction associated with completed local I/I reduction projects that have received MWRA financial assistance is about 88 million gallons per day (mgd). This flow reduction "ballpark" figure is based on the communities' (or their consultants') peak I/I reduction estimates, which have been prorated by MWRA staff to estimate an annual average I/I reduction. The estimated I/I reduction represents groundwater and stormwater that no longer enter the collection system at the point of repair. Regional wastewater flow reductions resulting from specific local I/I reduction projects are difficult to substantiate through end-of-the-collection-system meter data, due to factors noted below:

- Wastewater flows within the collection system vary dramatically due to changes in precipitation. For example, annual average daily flow for MWRA's system varies up to 100 mgd from year to year (from a low of less than 300 mgd to a high of more than 400 mgd). Small flow reductions for individual projects (typically much less than one mgd) are dwarfed by regional flow fluctuations;
- Sewer capacity gained by elimination of I/I in one subsystem may, in some cases, allow for other I/I to enter the collection system at a different location, resulting in less net flow reduction at the end of the collection system;
- MWRA's numerous pumping and interceptor upgrades, as well as combined sewer overflow and system optimization projects, result in an increase in the capture and treatment of wastewater flow and the reduction of raw sewage discharges. When reviewing end-of-the-collection system meter data, these increased flows to the Deer Island Treatment Plant offset upstream I/I reductions; and,
- In the MWRA service area, the increase in wastewater flow from an increase in sewered population is likely offset by the decline in per capita indoor water use. Over the last 20 years, sewered population in the service area has increased by about 270,000 people leading to an increase in sanitary sewage of about 17.5 mgd (based on 65 gpcd water use returned to the sewer system). During the same 20 year period, per capita indoor water use returned to the sewer system has decreased due to conservation measures such as installation of low-flow plumbing fixtures and appliances. Reduced indoor water use produces a decrease in sanitary sewage. A 20 mgd decrease in sanitary sewage would be produced by an across-the-region 10 gpcd reduction in water use from all of the approximately 2 million customers. The estimates noted above are generally offsetting.

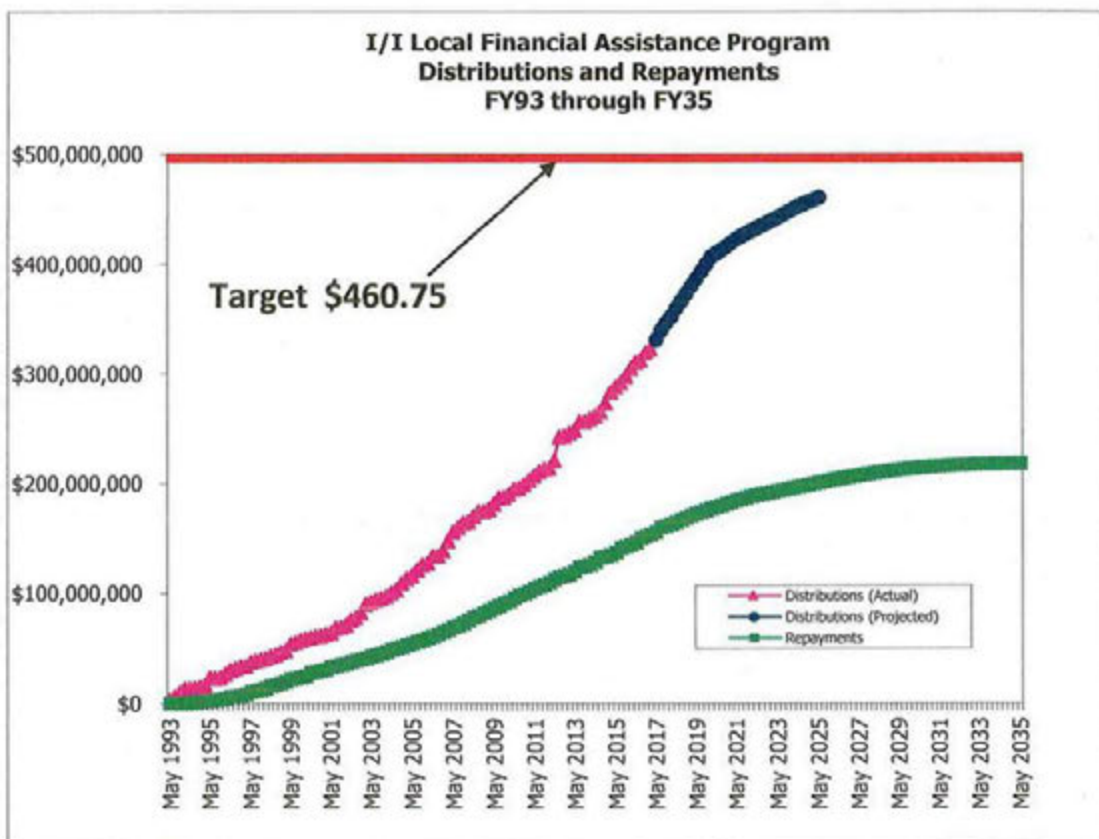
Taking these factors into account, long-term metering records will continue to be analyzed to monitor regional wastewater flow trends.

BUDGET/FISCAL IMPACT:

The FY17 CIP includes an overall budget of \$242.6 million for the grant portion of the I/I Local Financial Assistance Program. An additional \$218.2 million is budgeted for the loan portion of the program. However, the loan portion is offset by an equal amount of loan repayments over

time. Depending on the timing and level of community loan requests, annual loan distributions can fluctuate, sometimes causing over-spending or under-spending (versus budget) for any particular fiscal quarter or year.

For the total program, the budget target is \$460.75 million for grant and loan distributions. To date, \$322 million in grants and loans have been distributed and the program has a remaining balance of \$139 million in future community grants and loans through FY25. Community loan repayments to date are \$154 million, leaving a remaining potential of \$64 million in future repayments through FY35. As community loans are repaid, the funds are deposited into MWRA's construction fund. Community grants and loans are financed through MWRA 30-year bonds. The graph below presents grant and loan distributions and loan repayments (actual and projected) for all ten phases of the program – FY93 through FY35.



MBE/WBE PARTICIPATION:

MBE/WBE participation goals are included in the Financial Assistance Program agreements.

ATTACHMENTS:

- Attachment 1 – Advisory Board Summary of Recommended Eligible Funding Modifications
- Attachment 2 – Community Funding Summary
- Attachment 3 – Community Funding Summary by Program Phase
- Attachment 4 – Long-Term Regional Flow Data
- Attachment 5 – Long-Term Regional Flow Data Using 5-Year Running Average



Advocacy & Accountability

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Discussion Items for Potential Expansion of Eligible Tasks Under the I/I Local Financial Assistance Program

1. Permanent flow monitoring equipment

Costs for the purchase and/or installation of permanent flow monitoring equipment in sewer systems and associated computer hardware and software (*currently specifically excluded under ineligible item 2.8 (n)*).

2. Sewer inspection equipment

Costs for the purchase of sewer inspection equipment (*currently TV inspection equipment is specifically excluded under ineligible item 2.8 (o)*). Sewer inspection equipment may include but is not limited to: smoke testing, dyed water testing, closed-circuit television (CCTV) testing, sonar technologies, zoom camera technologies, air testing, vacuum testing, etc.

3. Building inspections, smoke testing, dye testing

Building inspections, smoke testing, and/or dye testing to identify and/or locate building or private utility connections to public utilities (sewer, storm drain, combined sewer/storm systems underdrains, etc.), including but not limited to: sewer lateral connection, downspout connection, storm water drain connection, area drain connection, sump pump connection, sewer/storm drain cross connections, etc.

4. Administrative tasks related to planning/development of procedures and public outreach

Planning, development of written procedures, development and distribution of public education outreach materials, assessment and priority ranking of sewer/storm catchment areas, engineering design, etc. for identification and elimination of stormwater (illicit) connections to the sewer system and/or sewer (illicit) connections to the storm system.

5. Database development and mapping of connections to public utilities

Data base development and mapping of connections to public utilities (sewer, storm drain, combined sewer/storm systems, underdrains, etc.), including global positioning system (GPS) locating of system components (manholes, catch basins, cleanouts, regulators, tide gates, outfalls, underdrain outlets, etc.), and geographic information system (GIS) mapping (or other mapping). Location and delineation of catchment areas for sewer and storm systems is included and considered integral to the mapping task. Data base information may include water system account data, sewer system account data, septic system account data, storm system account data, link to tie card information, link to assessor information, etc. Locating and mapping of sewer/storm systems will allow for the identification and investigation of potential direct or indirect connections.

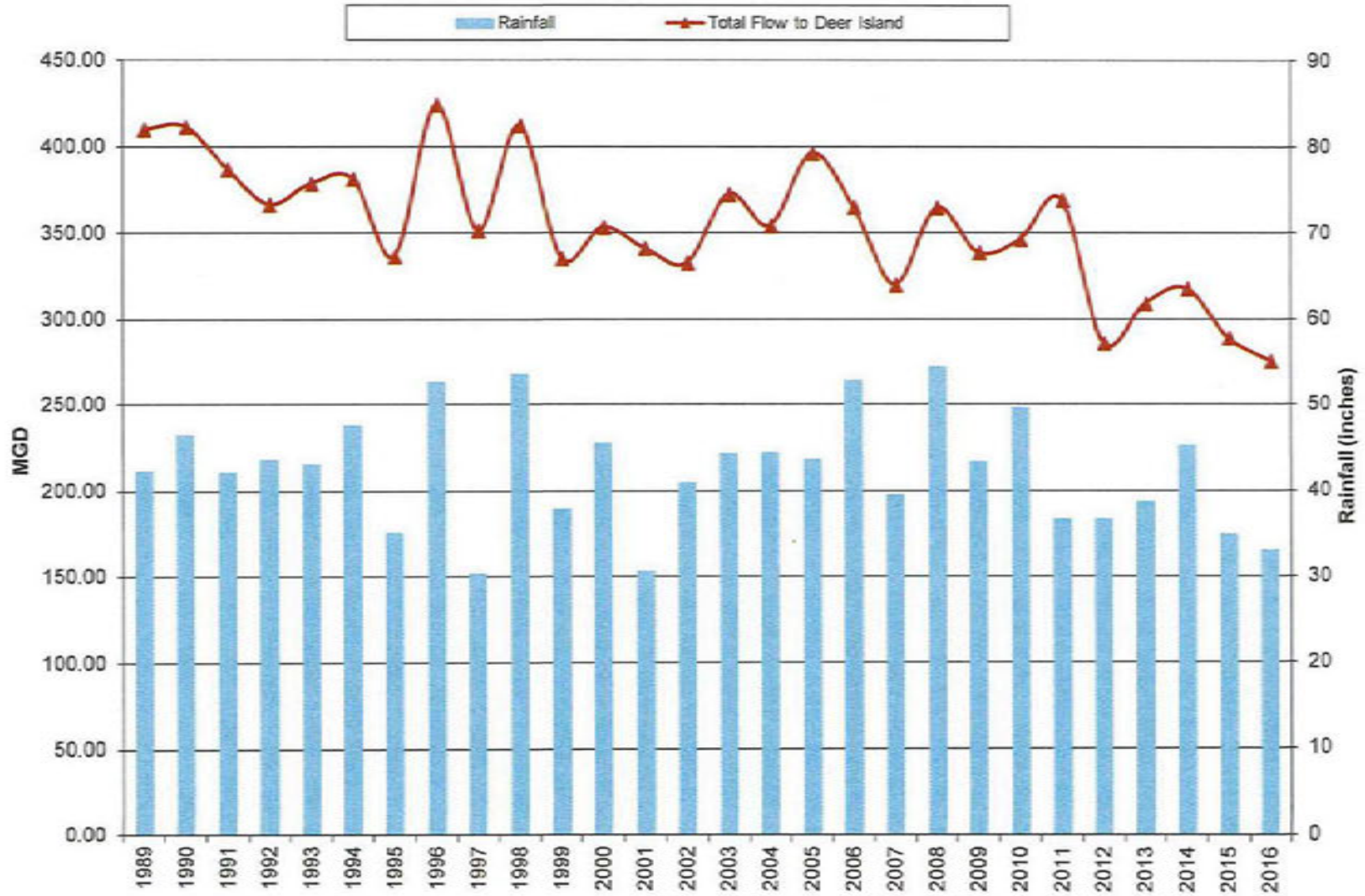
ATTACHMENT 2
MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
FUNDING SUMMARY AS OF FEBRUARY 2017

Community	Total Allocations (Phases 1 - 10)	Total Distributions (Phases 1 - 10)	Percent Distributed	Funds Remaining
Arlington	\$8,423,000	\$8,213,000	98%	\$210,000
Ashland	\$2,168,500	\$1,742,450	80%	\$426,050
Bedford	\$3,404,600	\$1,999,600	59%	\$1,405,000
Belmont	\$5,135,100	\$2,992,100	58%	\$2,143,000
Boston	\$132,171,200	\$83,711,976	63%	\$48,459,224
Braintree	\$8,359,000	\$6,575,800	79%	\$1,783,200
Brookline	\$13,165,200	\$7,666,200	58%	\$5,499,000
Burlington	\$5,102,800	\$5,102,800	100%	\$0
Cambridge	\$23,620,100	\$11,077,055	47%	\$12,543,045
Canton	\$3,965,900	\$2,675,900	67%	\$1,290,000
Chelsea	\$6,870,100	\$5,551,100	81%	\$1,319,000
Dedham	\$5,740,000	\$5,740,000	100%	\$0
Everett	\$8,071,500	\$6,650,500	82%	\$1,421,000
Framingham	\$12,125,000	\$7,255,910	60%	\$4,869,090
Hingham	\$1,632,500	\$1,632,500	100%	\$0
Holbrook	\$1,639,600	\$896,562	55%	\$743,038
Lexington	\$7,445,300	\$7,445,300	100%	\$0
Malden	\$12,283,900	\$4,593,900	37%	\$7,690,000
Medford	\$11,987,600	\$6,914,600	58%	\$5,073,000
Melrose	\$6,076,300	\$4,995,300	82%	\$1,081,000
Milton	\$5,564,500	\$3,736,500	67%	\$1,828,000
Natick	\$5,582,600	\$4,452,800	80%	\$1,129,800
Needham	\$6,257,600	\$2,892,150	46%	\$3,365,450
Newton	\$21,197,400	\$21,197,400	100%	\$0
Norwood	\$6,879,400	\$4,519,399	66%	\$2,360,001
Quincy	\$19,790,000	\$16,336,000	83%	\$3,454,000
Randolph	\$6,050,800	\$3,894,800	64%	\$2,156,000
Reading	\$4,629,100	\$3,785,100	82%	\$844,000
Revere	\$10,130,900	\$5,502,900	54%	\$4,628,000
Somerville	\$15,515,800	\$10,117,800	65%	\$5,398,000
Stoneham	\$4,919,900	\$4,919,900	100%	\$0
Stoughton	\$4,722,900	\$4,629,100	98%	\$93,800
Wakefield	\$5,966,900	\$4,659,800	78%	\$1,307,100
Walpole	\$3,680,000	\$3,042,000	83%	\$638,000
Waltham	\$13,732,400	\$11,377,400	83%	\$2,355,000
Watertown	\$6,285,800	\$3,661,800	58%	\$2,624,000
Wellesley	\$5,709,700	\$3,256,224	57%	\$2,453,476
Westwood	\$2,532,300	\$2,091,300	83%	\$441,000
Weymouth	\$11,480,900	\$7,785,900	68%	\$3,695,000
Wilmington	\$2,462,000	\$1,606,000	65%	\$856,000
Winchester	\$4,183,000	\$3,535,100	85%	\$647,900
Winthrop	\$3,393,400	\$2,807,400	83%	\$586,000
Woburn	\$10,695,500	\$8,962,500	84%	\$1,733,000
Totals	\$460,750,000	\$322,201,826	70%	\$138,548,174

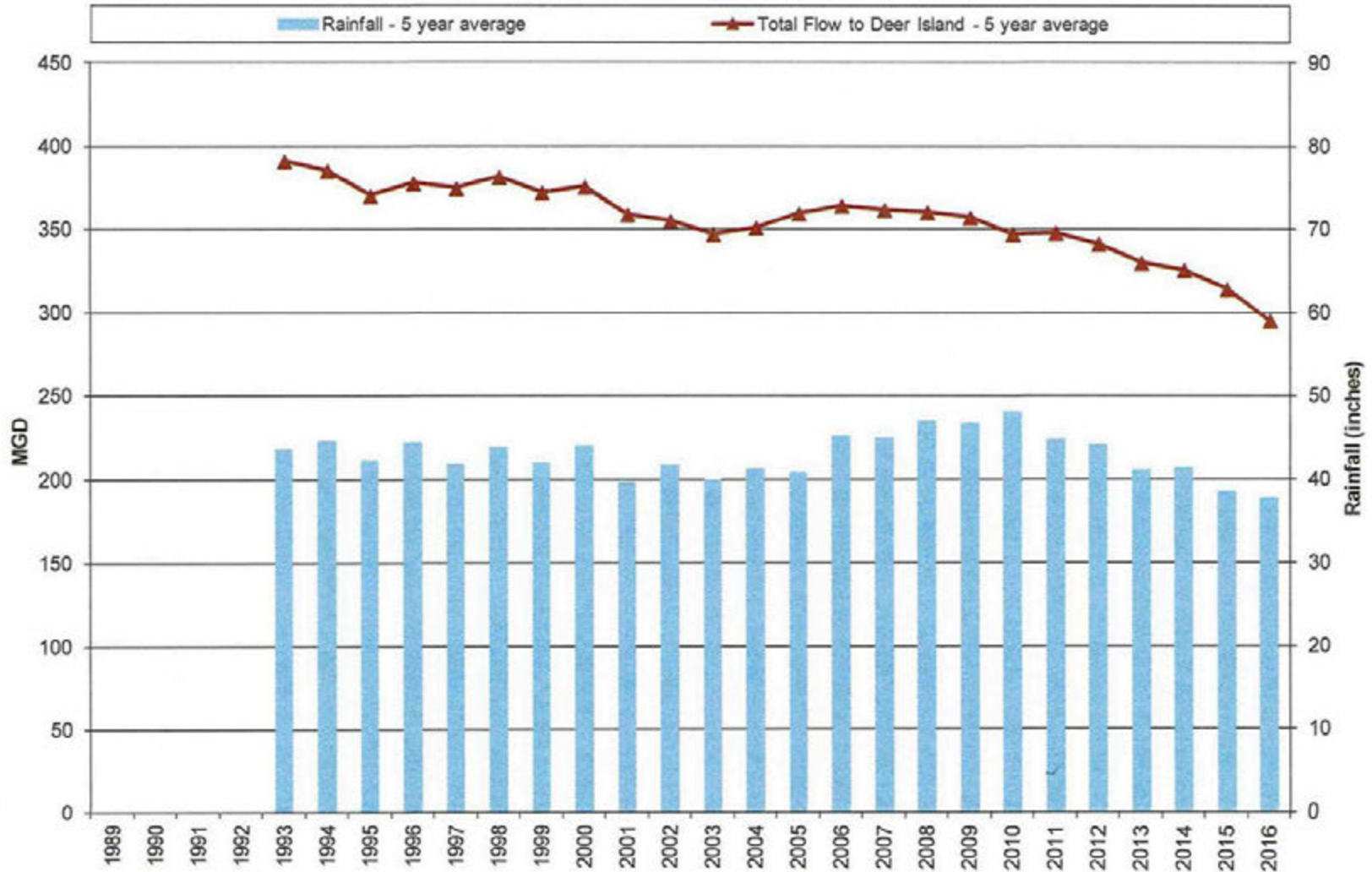
**ATTACHMENT 3
MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
FUNDING SUMMARY BY PROGRAM PHASE (AS OF FEBRUARY 2017)**

Community	Phase 10 Funds Distributed	Phase 10 Funds Remaining	Phase 9 Funds Distributed	Phase 9 Funds Remaining	Phases 6 - 8 Funds Distributed	Phases 6 - 8 Funds Remaining
Arlington	\$1,195,000	\$210,000	\$1,405,000	\$0	\$2,164,000	\$0
Ashland	\$0	\$420,000	\$413,950	\$6,050	\$594,000	\$0
Bedford	\$0	\$561,000	\$0	\$561,000	\$616,000	\$283,000
Belmont	\$0	\$848,000	\$0	\$848,000	\$884,000	\$447,000
Boston	\$0	\$23,293,000	\$0	\$23,293,000	\$32,093,776	\$1,873,224
Braintree	\$0	\$1,520,000	\$1,258,800	\$263,200	\$2,210,000	\$0
Brookline	\$0	\$2,280,000	\$0	\$2,280,000	\$2,554,000	\$939,000
Burlington	\$899,000	\$0	\$899,000	\$0	\$1,355,000	\$0
Cambridge	\$0	\$4,027,000	\$0	\$4,027,000	\$1,753,955	\$4,489,045
Canton	\$0	\$645,000	\$0	\$645,000	\$1,030,000	\$0
Chelsea	\$0	\$1,319,000	\$1,319,000	\$0	\$1,763,000	\$0
Dedham	\$913,000	\$0	\$913,000	\$0	\$1,533,000	\$0
Everett	\$0	\$1,421,000	\$1,421,000	\$0	\$2,088,000	\$0
Framingham	\$0	\$2,050,000	\$0	\$2,050,000	\$2,252,910	\$769,090
Hingham	\$300,000	\$0	\$300,000	\$0	\$443,000	\$0
Holbrook	\$0	\$290,000	\$0	\$290,000	\$255,982	\$163,038
Lexington	\$1,305,000	\$0	\$1,305,000	\$0	\$2,008,000	\$0
Malden	\$0	\$2,229,000	\$0	\$2,229,000	\$0	\$3,232,000
Medford	\$0	\$2,013,000	\$0	\$2,013,000	\$2,120,000	\$1,047,000
Melrose	\$0	\$1,081,000	\$1,081,000	\$0	\$1,613,000	\$0
Milton	\$0	\$914,000	\$0	\$914,000	\$1,457,000	\$0
Natick	\$0	\$969,000	\$808,200	\$160,800	\$1,374,000	\$0
Needham	\$0	\$994,000	\$0	\$994,000	\$261,550	\$1,377,450
Newton	\$3,668,000	\$0	\$3,668,000	\$0	\$5,596,000	\$0
Norwood	\$0	\$1,180,000	\$0	\$1,180,000	\$1,804,000	\$0
Quincy	\$0	\$3,454,000	\$3,454,000	\$0	\$5,217,000	\$0
Randolph	\$0	\$1,078,000	\$0	\$1,078,000	\$1,540,000	\$0
Reading	\$0	\$844,000	\$844,000	\$0	\$1,205,000	\$0
Revere	\$0	\$1,853,000	\$0	\$1,853,000	\$1,752,000	\$922,000
Somerville	\$0	\$2,699,000	\$0	\$2,699,000	\$3,962,000	\$0
Stoneham	\$814,000	\$0	\$814,000	\$0	\$1,248,000	\$0
Stoughton	\$704,200	\$93,800	\$798,000	\$0	\$1,274,000	\$0
Wakefield	\$0	\$1,017,000	\$726,900	\$290,100	\$1,576,000	\$0
Walpole	\$0	\$638,000	\$638,000	\$0	\$957,000	\$0
Waltham	\$0	\$2,355,000	\$2,355,000	\$0	\$3,630,000	\$0
Watertown	\$0	\$1,050,000	\$0	\$1,050,000	\$1,080,000	\$524,000
Wellesley	\$0	\$970,000	\$0	\$970,000	\$1,000,524	\$513,476
Westwood	\$0	\$441,000	\$441,000	\$0	\$677,000	\$0
Weymouth	\$0	\$1,995,000	\$295,000	\$1,700,000	\$2,961,000	\$0
Wilmington	\$0	\$428,000	\$0	\$428,000	\$638,000	\$0
Winchester	\$55,100	\$647,900	\$703,000	\$0	\$1,073,000	\$0
Winthrop	\$0	\$586,000	\$586,000	\$0	\$879,000	\$0
Woburn	\$0	\$1,733,000	\$1,733,000	\$0	\$2,927,000	\$0
Totals	\$9,853,300	\$70,146,700	\$28,177,850	\$51,822,150	\$103,420,677	\$16,579,323


ATTACHMENT 4
MWRA Long-Term Regional Flow Data
NOAA Annual Rainfall at Logan Airport



ATTACHMENT 5
MWRA Long-Term Regional Flow Data
5-year Running Averages
5 year running NOAA Rainfall Average at Logan Airport



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: March 15, 2017
SUBJECT: Delegation of Authority to Execute a Contract for Temporary Backup Generators for the Deer Island Treatment Facility

COMMITTEE: Wastewater Policy & Oversight

 INFORMATION
 X VOTE


Michele S. Gillen
Director of Administration

David Duest, Director, Deer Island
John P. Vetere, Deputy Chief Operating Officer
Preparer/Title


Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To authorize the Executive Director, on behalf the Authority, to execute an agreement for the rental, installation, operation and maintenance of temporary backup generators for the Deer Island Wastewater Treatment Facility, for a period and amount as determined by staff to be in MWRA's best interest. This delegation of authority is necessary to ensure continuous backup power at Deer Island, as required by federal and state permit, during dredging and cable protection work by others over and adjacent to the HEEC cross harbor submerged electric cable.

BACKGROUND:

Massport and the U.S. Army Corp of Engineers ("Army Corps") are moving forward with a dredging improvement project for Boston Harbor including the Reserve Channel. The goal of the project is to deepen the harbor to allow deep draft ships to enter Boston Harbor and Reserve Channel.

Deer Island's primary electric power source is a submerged marine cable (115 kVa) commencing at K Street in South Boston and located in the Reserve Channel and Boston Harbor. The submerged cable is owned and maintained by the Harbor Electric Energy Company (HEEC), a subsidiary of NSTAR. The cable was installed by HEEC in 1989-90 at depths, shallower in some locations, than depths required by its Army Corps permit.

According to the Army Corps, with the HEEC cable at its present non-permit compliant locations, the dredging work cannot be performed without endangering the cable. The Corps has demanded that the cable be protected to allow the Boston Harbor improvement dredging work to proceed. The U.S. Attorney's Office, on behalf of the Army Corps, brought suit against

MWRA and HEEC/NSTAR in federal court arising out of the improper location of the cross harbor cable.

HEEC/NSTAR is working towards installing protective mats above the cable and performing dredging within a two hundred foot corridor where the cable is located. To complete this work, the cross harbor cable will need to be de-energized to allow the contractor to work safely (when dredging within a defined distance of the cable and when the protective mats are placed over the cable).

The current best estimate of the time period when these activities will occur is July 1, 2017 to February 18, 2018 (8 months), with a potential of extending into July 1, 2018 and beyond depending upon dredging and mat installation progress. HEEC/NSTAR has indicated they are scheduling these activities to occur 24 hours per day, 7 days per week.

DISCUSSION:

Primary Deer Island Energy During Dredging

MWRA intends to meet its primary energy requirements needs during these dredging activities and when utility submerged cable power is unavailable through the use of MWRA's permanently installed backup generations, two 26-MW Combustion Turbine Generators ("CTGs"):

- 1 CTG unit is required at all times for normal plant flows (normal loads around 12 megawatts ("MW"), plant flow 360 million gallons per day); and
- 2 CTGs units are required during storm conditions (up to 46 MW max demand at 1.3 billion gallons per day).

Should a CTG unit fail due to a mechanical issue during high flows, MWRA would be unable to pump and treat all wastewater intended to go to the DITP, forcing sewage releases to Boston Harbor in violation of MWRA's NPDES permit. In addition, during high flow conditions when both existing CTGs are in operation Deer Island would have no backup power in violation of the NPDES.

Backup Power Deer Island Energy During Dredging

Deer Island is required by its federal and state permit (NPDES permit) to have adequate backup power to provide full treatment at all times. Given that MWRA's current backup CTGs will be providing primary power to Deer Island and that the cross harbor cable will not be available to provide electricity to Deer Island during dredging and armoring, Deer Island will need backup generators (two 25 MW generators) to be installed on-site by the project start date (July 1 or 3.5 months from today). The units are expected to be fully integrated with the existing CTGs so that MWRA's permit requirement for backup power will continue to be met, allowing for those portable generators to be fully in place and capable of responding to an emergency or when conditions otherwise warrant their use (e.g., failure of one of DITP's main CTG units, storm conditions, etc.).

During the most recent survey of the HEEC cable location by NStar, the cable was de-energized and MWRA powered Deer Island with one existing CTG and kept the second existing CTG as an emergency backup. During days of high flow, MWRA required the HEEC cable be re-energized, returning MWRA CTGs to backup status thereby effectively negating the need for temporary backup generators on Deer Island. MWRA proposed this operational procedure for the future dredging and mat protection work for the HEEC cable. NStar, now Eversource,

rejected this proposal, indicating that in their estimation they could not complete the required work within the necessary time frames unless they worked 24 hours per day, 7 days per week. Backup generators are required on Deer Island to accomplish this.

On February 22, 2017, NStar/Eversource verbally committed to being responsible for the procurement, installation, commissioning, operation and maintenance of the backup generators. On March 8, 2017, NSTAR/Eversource withdrew this commitment and instead stated in writing only that "HEEC agrees to collaborate with MWRA to seek a solution for backup generation to the Deer Island Treatment Plant". With the start of the HEEC/NSTAR work, dredging and cable mat protection work scheduled to begin as early as July 1, 2017, (August 1 for dredging, July 1 for additional tests pits in the main channel) and the potential long lead time necessary for mobilizing, installing and testing large backup portable generators on-site, staff commenced exploring means to ensure that Deer Island would have backup power.

The only vendor staff are currently aware of with portable generators in the range of 25 MW is PW Power Systems (PWPS), which is the original manufacturer of Deer Island's existing CTGs. Staff anticipate that, pursuant to its policies and procedures, MWRA will be leasing the portable generators from PWPS, which will also be installing and providing operation and maintenance of the temporary generators during HEEC/NSTAR/Eversource's operations. PWPS estimates a two month lead time to mobilize the generators on site, and another six weeks to install them. Installation includes electrical and plumbing work to connect the fuel, water and electrical lines. Once installed, the portable generators must be tested and commissioned.

The total time to mobilize, install, test and commission the portable generators is approximately 3.5 months, assuming no delays or other schedule impacts. This leaves insufficient time for a competitive procurement given that the portable generators must be operational by July 1, 2017. PWPS is uniquely familiar with MWRA's set up given its equipment has been installed on DITP since 1998. Their knowledge of our facility should speed up installation and commissioning of these backup units.

To meet the extremely tight timeframe associated with the dredging project staff requested an emergency waiver of the bidding and advertising requirements of G.L. c. 149 §§44A-J for the two 25 MW portable generators, including all work necessary to install and connect them to Deer Island's existing power infrastructure. DCAMM approved the waiver on March 10, 2017.

BUDGET/FISCAL IMPACTS:

Rental of the two units, once installed, is estimated to cost \$1 million per month for the two backup units. This cost includes rental, technical support, and maintenance of the units. The estimated total cost for emergency generators, assuming a July 1, 2017 to February 18, 2018 period (8 months x \$1 million rental fee/month + approximately \$5.067 million mobilization + approximately \$46,464 for 192 operational hours (estimated emergency and wet weather operation) is approximately \$13.2 million. Staff are obtaining updated and more detailed pricing from PWPS and will be negotiating the costs. Should the project be completed early or run longer, staff estimate a variance of approximately \$1 million per month. NSTAR/Eversource did mention there is a possibility the project may run longer into the summer of 2018 which would increase the rental costs another \$6 million estimated (through August 2018).

Based on information at the time the Proposed FY18 CEB budget was established, the HEEC dredging and cable protection work was estimated at 4 months from July 1st 2017 through end of October. Staff included an estimated cost of \$4.4 million in the Proposed FY18 CEB to cover the net cost of diesel used to run the CTG's offset by the savings in electricity while Deer Island is

off the grid, the estimated overtime, and the third party contractor maintenance costs for the 4 months. Based on the latest estimates from HEEC/NSTAR/Eversource the estimated time of completion of the work is 8 months (and potentially even longer). This would increase MWRA costs for operating its own CTGs by an additional \$4.4 million, for a total of \$8.8 million.

Below is a recap of the cost estimates for 8 month and 14 month respectively:


Estimated Cost (in millions)	8 Month	14 Month
Mobilization and Installation of 2 back-up CTGs	\$5.1	\$5.1
Rental Costs	\$8.0	\$14.0
MWRA Operating Costs	\$8.8	\$15.4
TOTAL	\$21.9	\$34.5

The total estimated costs for the emergency backup generators and MWRA’s operating costs of its existing CTGs for an 8 month period in FY18 is approximately \$22 million with the potential to be as high as \$26 million should the work continue into the summer of 2018. The proposed FY18 CEB contains \$4.4 million.

Staff are currently considering and evaluating the options for funding this significant cost increase by minimizing the impact in FY18 on the Community Assessments.

MWRA has cross-claimed against NSTAR and HEEC in the pending federal court enforcement suit brought by the United States on behalf of the Army Corps for all costs that MWRA has or will bear that arise out of the mis-positioned cable. The costs of backup generating units are precisely those types of costs which will be part of MWRA’s damages claims in the federal lawsuit.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: March 15, 2017
SUBJECT: Combustion Turbine Generator Maintenance, Deer Island Treatment Plant
O'Connor Corporation
Contract S549

COMMITTEE: Wastewater Policy & Oversight

Information

Vote


Michele S. Gillen

Director of Administration

David Duest, Director, Deer Island WWTP
Richard J. Adams, Manager, Engineering Services
Phillip Szottfried, Senior Program Manager, I & C
Preparer/Title


Michael J. Hornbrook

Chief Operating Officer

RECOMMENDATION:

That the Executive Director, on the behalf of the Authority, approve the award of Contract S549, Combustion Turbine Generator Maintenance, Deer Island Treatment Plant, to the lowest responsible and eligible bidder, O'Connor Corporation, and to execute said contract in the not to exceed amount of \$2,125,700, for a contract term of 1,096 calendar days.

DISCUSSION:

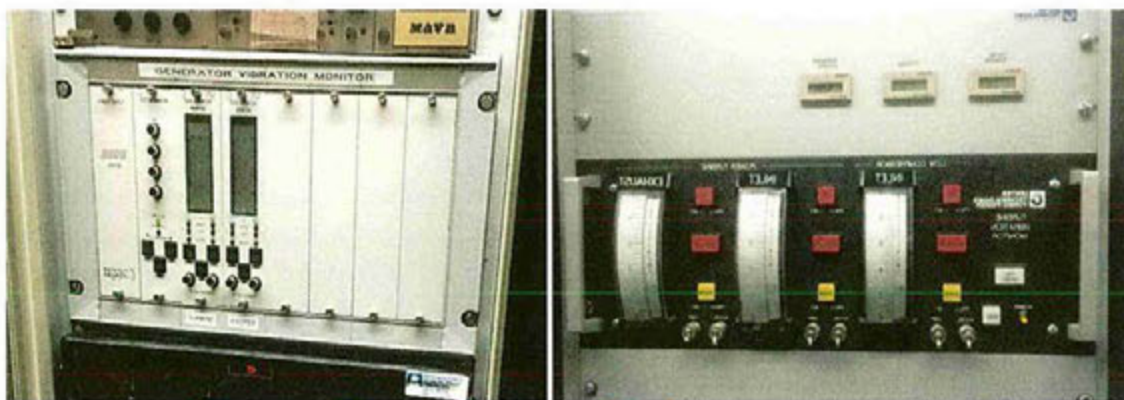
The Thermal/Power Plant on Deer Island contains two 26-megawatt CTGs that provide back-up power for the entire Deer Island Treatment Facility. Required inspections, along with preventive maintenance of the CTGs and associated equipment, are essential to ensuring the continued safe and reliable operation of these critical systems. The importance of the CTGs cannot be overstated. In the event of a sustained utility power failure, and during the upcoming dredging and Eversource cable protection work by others, the CTGs would be needed to keep the plant operational. Complete loss of power for an extended period of time would render the pump stations inoperable, which may lead to sewage back-ups across MWRA's service area. Deer Island is required by federal and state permits to have sufficient back-up power to operate the treatment plant at full operation. These CTGs meet this backup permit requirement.

Contract S549 will provide scheduled annual inspection and maintenance services, as well as emergency and non-emergency repair services, replacement parts, and factory authorized vendor services for the equipment associated with the combustion turbine generators (CTGs) located in the Thermal/Power Plant on Deer Island for a period of 1,096 calendar days. Included in this scope of work are the replacement of the vibration monitoring systems, and automatic voltage regulators and flame safety systems which will be performed under the supervision of PW Power

Systems, the Original Equipment Manufacturer. Contract S549 also includes new weatherhoods to be installed on the outside air intakes of the Thermal Power Plant. Additional labor support hours have been included to provide some CTG maintenance support based upon currently known information regarding the upcoming dredging and Eversource cable protection work by others.

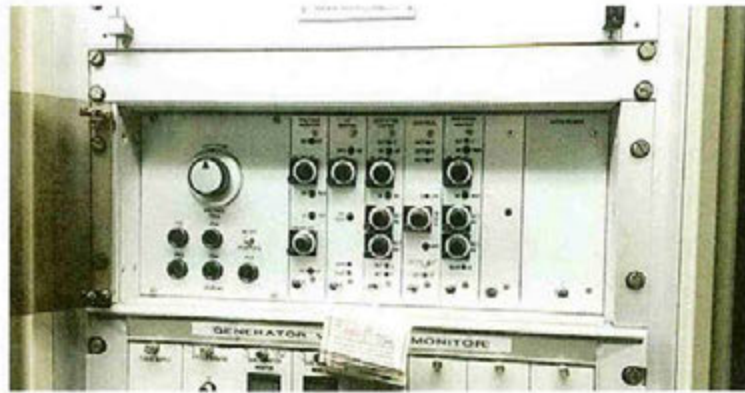
The scope of work under Contract S549 includes three annual maintenance services for both CTGs to be performed independent of each other, so that one unit will always be in service and available. Staff will also schedule these services during a period when no significant wet-weather events are anticipated. In addition to the annual maintenance services, this Contract includes upgrades to the vibration monitoring systems, automatic voltage regulators and flame safety systems. Each of the systems is part of the original CTG controls and have functioned beyond their useful life. The three systems have critical connections such that the CTGs will not function if there is any type of failure:

1. Vibration Monitoring System (VMS) – The VMS protects the engine and generator from excessive vibration which could be detrimental to the equipment. The existing system consists of Bently Nevada and Vibrametrix equipment. This system is no longer supported and must be replaced.



Vibration Monitor Equipment Replacement

2. Automatic Voltage Regulator (AVR) – The AVR regulates the output voltage of the generator to match that of the local utility when the CTG is being synchronized, running in parallel and most importantly running independent with the electric grid. The existing AVR is obsolete and parts are no longer manufactured or supported.



AVR Replacement

3. Flame Safety System (FSS) – The FSS protects the engine, generator and local control house in the event of a fire. It sends a signal to the controller to cut the fuel flow and shut down the engine. The existing Fire Protection System has also been discontinued and replacement parts are no longer available.

New weatherhoods will replace the existing louvers on the outside of the Thermal Power Plant. The existing louvers are flush with the building and during some cold weather storm events do not protect the CTG inlet filters from freezing or moisture issues. Overhang weatherhoods have been installed at other harsh weather locations which has lessened the frequency of these issues.

In addition to the scope of work identified above, the total contract bid price includes several allowance items and unit price items that will be drawn down on an as-needed basis. The allowance items include \$198,000 for replacement parts, \$125,000 for authorized factory representative services, \$10,000 for fire department services, and a combined total of \$196,750 in unit price bid items for emergency and non-emergency repair services as needed. Staff accounted for additional costs in the unit price items, based upon Eversource's original construction schedule, associated with the Eversource cable matting work scheduled to commence in the summer of 2017. These estimated allowances and quantities of unit price bid items were developed based upon reasonable assumptions and previous contract usage, but do not represent a firm commitment of cost or guarantee of payment to the vendor. MWRA will only pay for items and services provided.

This procurement is the eighth maintenance contract for the CTG units and is consistent with the plant's long-term maintenance staffing plans. The work associated with the maintenance of the combustion turbines is highly technical and not typical tasks plant personnel see every day. As such, it is critical that each component be properly maintained and inspected. Extensive training is required for the functions and purpose of the mechanical and instrumentation equipment. Deer Island staff do not have the appropriate training, or the testing/calibration equipment to properly perform the maintenance and/or troubleshooting tasks associated with the CTGs. The bidders, including O'Connor Corporation, have the skilled personnel and experience with similar equipment. Therefore, it is imperative that the maintenance and repair for the CTGs be performed under this contract by trained professionals.

Procurement Process

Contract S549 was advertised in the Boston Herald, Banner Publications, El Mundo, COMMBUYS, and the Central Register and bid in accordance Chapter 149 of Massachusetts General Laws. Bids were opened on February 23, 2017. Three bids were received. The apparent low bidder, Energy Resources Group, Inc. (ERG), was interviewed on February 27, 2017. Based on information provided by ERG during the interview, ERG's bid was rejected because it was not for the complete work as specified. The remaining two bidders were also interviewed (O'Connor was interviewed at the Deer Island Treatment Plant and IPC Lydon was interviewed by telephone) to confirm that they understood the scope of the specifications and that their bid prices were for the complete work as specified. Staff were satisfied with their responses. The bid results are as follows:

<u>Bidders</u>	<u>Bid Price</u>
Energy Resources Group, Inc	\$1,817,984.00*
<i>Engineer's Estimate</i>	<i>\$2,048,404.00**</i>
O'Connor Corporation	\$2,125,700.00
IPC Lydon, LLC	\$2,805,506.00

**ERG's bid was rejected because the bid price was not for the complete work as specified.*

*** The original Engineer's Estimate was revised prior to the bid opening to reflect changes to the scope of work and allowances by the Authority during the bid phase.*

O'Connor Corporation has previously performed the maintenance of the CTGs, including under the current Contract S524, and the previous Contract S501. MWRA staff were very satisfied with O'Connor's performance on both of these maintenance contracts. O'Connor is very familiar with the Deer Island facility and MWRA's procedures for access, and has successfully performed the scope of work required in this contract. O'Connor's references were checked and found to be favorable.

O'Connor Corporation's bid is 3.6% higher than the Engineer's Estimate. Staff determined that O'Connor's price was higher than the Engineer's Estimate primarily due to higher hourly rate and higher overhead costs associated with the VMS, AVR and FSS upgrades. During its telephone interview IPC Lydon (which is the current maintenance contractor for the Thermal/Power Plant boilers but has not been the CTG maintenance contractor) noted that its bid was higher than the Engineer's Estimate due to a combination of factors such as unfamiliarity with the CTG maintenance work, some uncertainty of the skill set required to perform the specified upgrade work and a lack of familiarity with the supplier providing the VMS, AVR and FSS system.

Staff reviewed O'Connor's bid and determined that it is reasonable and complete, and it meets all the requirements of the specifications, including the payment of prevailing wages. Staff determined that O'Connor possess the skill, ability, and integrity necessary to perform the work under this contract and is qualified to do so. Therefore, staff recommend the award of this

contract to O'Connor Corporation as the lowest responsible and eligible bidder.

BUDGET/FISCAL IMPACT:

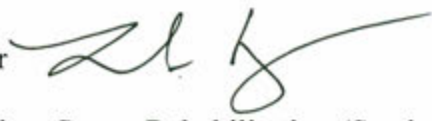
Funding of \$1,300,000 is included in Deer Island's FY18 Current Expense Budget for the first year of this contract. Appropriate funding will be included in subsequent Proposed CEB requests for the remaining term of the contract.

MBE/WBE PARTICIPATION:

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

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 15, 2017
SUBJECT: Reading Extension Sewer and Metropolitan Sewer Rehabilitation (Sections 73/74/75/46)
Green Mountain Pipeline Services, Inc.
Contract 7164



COMMITTEE: Wastewater Policy & Oversight

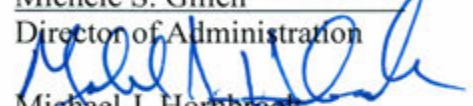
 INFORMATION

 X VOTE

John P. Vetere, Deputy Chief Operating Officer
A. Navanandan, P.E., Chief Engineer
Patrick E. Smith, P.E., Program Manager
Preparer/Title



Michele S. Gillen
Director of Administration



Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the award of Contract 7164, Reading Extension Sewer and Metropolitan Sewer Rehabilitation (Sections 73/74/75/46), to the lowest responsible and eligible bidder, Green Mountain Pipeline Services, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$2,048,945, with a contract term of 487 calendar days from the Notice to Proceed, conditioned upon DEP authorization to award and waiver of SRF DBE/WBE participation requirements.

BACKGROUND:

MWRA's Reading Extension Sewer and Metropolitan Sewer are a part of MWRA's Northern Collection System serving the communities of Wakefield, Stoneham, and Woburn. The 12,240-linear foot, 98-year old Reading Extension Sewer (Sections 73, 74, and 75) consists of 15, 18 and 20-inch vitrified clay (VC) pipe with 90% of the pipeline located in the Town of Stoneham. An adjacent MWRA sewer, the 24- and 36-inch North Metropolitan



Construction of a section of the Reading Extension Sewer (circa. 1919) along Prospect Street near the Stoneham/Wakefield town line.

Relief Sewer, which staff consider to be in good condition, parallels the Reading Extension Sewer for most of its alignment and will be used for flow diversion and bypass pumping, minimizing temporary overland piping.

A second sewer, a portion of the Metropolitan Sewer included in this project is a 2,280-linear foot vitrified clay pipe segment (the upstream end of Section 46) constructed in the late 1800s. Recent inspections of this sewer segment, which is 15-inches in diameter and runs parallel to a portion of the Reading Extension Sewer, revealed both structural and non-structural deficiencies.

Internal television inspections of the Reading Extension Sewer in 2013 and 2015, performed by MWRA staff (shown right), revealed that many segments of the pipeline had cracked, were broken, or had partially deformed segments. In addition, numerous areas of heavy root intrusion and light-to-heavy infiltration also exist. Manholes along the Reading Extension Sewer are mostly of brick construction with infiltration/inflow and deteriorating mortar issues. The Metropolitan Sewer Section 46 was also inspected and deteriorating conditions were similarly noted.



Reading Extension Sewer – Section 73

DISCUSSION:

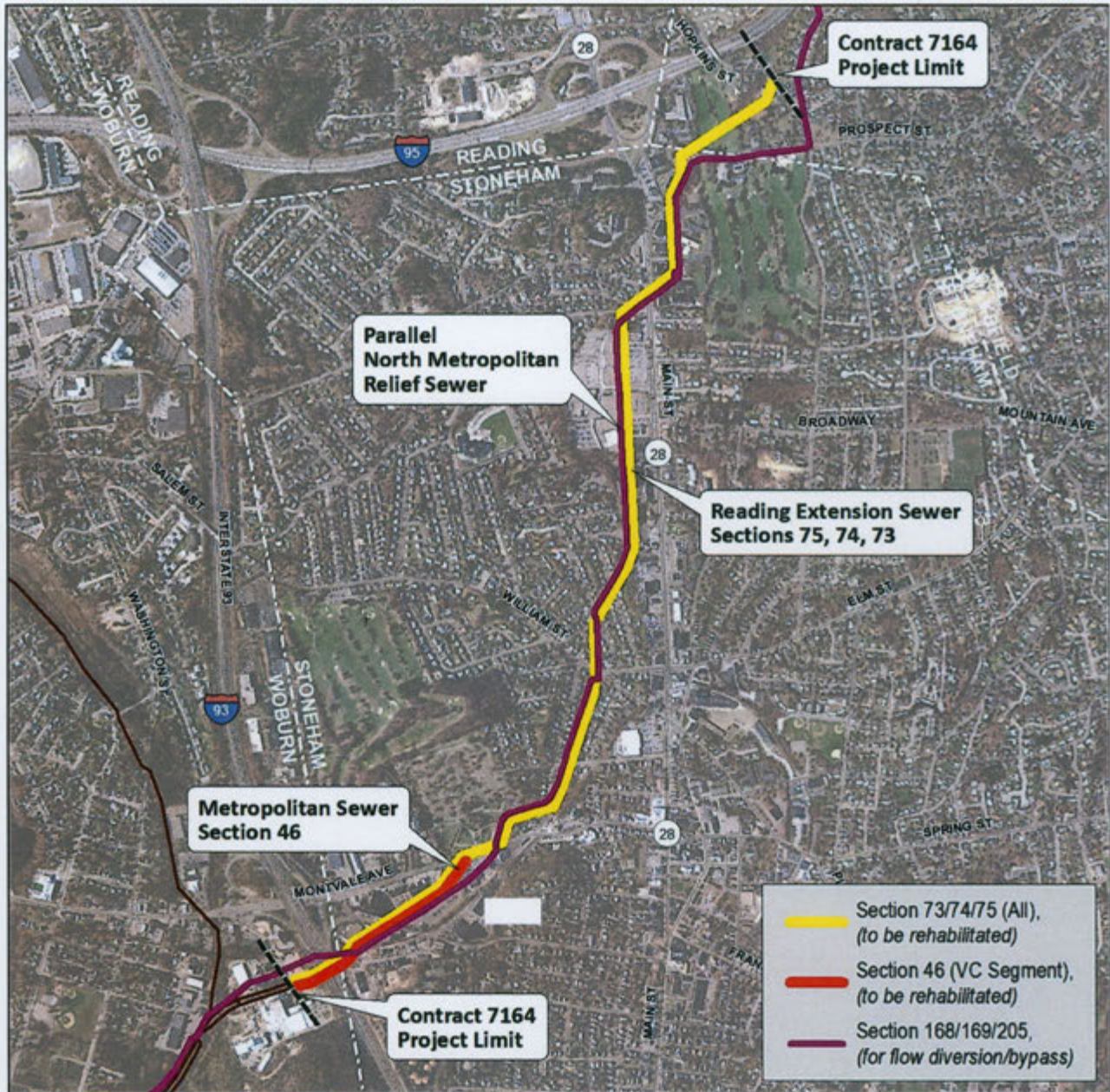
On July 15, 2015, the Board approved the award of Contract 7163 to Arcadis U.S., Inc to provide design, construction administration and resident engineering/inspection services for the rehabilitation of the Reading Extension Sewer (Sections 73, 74 and 75) and Section 46 of the Metropolitan Sewer. The scope of services included one construction contract, MWRA Contract 7164. Investigation design services identified a continuous 1,410-foot segment of Reading Extension Sewer (Section 74) in very good condition, and with Authority approval, recommended it not be included in the 12,240-foot rehabilitation of the Reading Extension Sewer. The project limits for construction Contract 7164 are outlined in Figure 1.



Reading Extension Sewer – Section 75

FIGURE 1

MWRA CONTRACT 7164 PROJECT LOCATION/LIMITS AND ADJACENT SEWERS



MWRA Construction Contract 7164 includes: pipeline trenchless technology rehabilitation by Cured-in-Place Pipe (CIPP) structural liner of 13,100-linear foot of 15, 18 and 20-inch VC Pipe for the Reading Extension Sewer (10,820-linear feet) and Metropolitan Sewer (2,280-linear feet); spot repairs to prepare existing pipe for CIPP lining; rehabilitation/lining of 62 associated manholes/structures; bypass pumping and flow diversion; participation in assisting MWRA with coordination of other agencies and projects (e.g. MWRA Northern Intermediate High water

project in Stoneham), community officials and property owners; and associated site and restoration work.

Procurement Process

Contract 7164 was advertised in the Boston Herald, El Mundo, Banner Publications, Central Register and COMMBUYS, and bid in accordance with Massachusetts General Laws, Chapter 30. Bids were received and opened on February 23, 2017 with the following results:

<u>Contractor</u>	<u>Bid Amount</u>
Green Mountain Pipeline Services, Inc	\$2,048,945
Insituform Technologies, LLC	\$2,154,000
Layne Inliner, LLC	\$2,891,160
<i>Engineer's Estimate</i>	<i>\$4,240,000</i>

Green Mountain Pipeline Services' bid is the lowest at \$2,048,945, which is \$2,191,055, (52%) below the Engineer's Estimate; however the bid is only \$105,055 (5.1%) below the second lowest bid, and \$842,205 (30%) below the third lowest bid. The average of the bids is \$2,364,702 and within 15.4% of the low bid. It is staff's determination that the Engineer's Estimate was too conservative for the reasons outlined below.

The major differences between the Engineer's Estimate and the low bid are: inherent cost savings in overhead being a lining company with the ability to bid as a general contractor; the Contractor's higher assumed rate of productivity resulting in lower cost; and familiarity with the Authority on past projects allowing a more aggressive bid by Green Mountain Pipeline Services. Staff noted that the calculated unit price from Green Mountain Pipeline Services bid for the cured-in-place pipe lining items are comparable at the lower end of recent bids provided on other projects in the greater Boston area. The close range of bids by the three lining company bidders is believed to be the correct level of effort to successfully complete this project.

MWRA staff and Arcadis have reviewed Green Mountain Pipeline Services' bid in detail and discussed the major bid items with the company. Based on the bid review and subsequent discussions with Green Mountain Pipeline Services, staff are satisfied that Green Mountain Pipeline Services understands the full scope of work and can perform the work for the bid price, which includes the payment of prevailing wages and all police services required in its lump sum bid. Green Mountain Pipeline Services understands and is committed to meet the contract qualifications and D/MBE and D/WBE requirements. Green Mountain Pipeline Services affirmatively stated that it bid competitively and aggressively, based on its staff's familiarity with previous MWRA projects. Green Mountain Pipeline Services is a pipeline and full service general contracting company that has completed many projects in New England. It has been in business for over 60 years in the pipeline rehabilitation and lining market.

Green Mountain Pipeline Services indicated that its skill, experience and efficiency in this type of work will result in a more aggressive installation rate, which includes longer lining reaches up to 1,000-linear feet per setup, a rate that it has regularly achieved on other projects. The Engineer's Estimate conservatively estimated pipeline rehabilitation reaches and corresponding

lining set-ups, with a typical set-up of approximately 500 to 600 feet which is achievable by all cured-in-place pipe materials and curing methods and able to be executed by most contractors.

The Engineer's Estimate also conservatively assumed lining setups at most pipeline direction changes at manholes, which Green Mountain Pipeline Services' indicated it can line through greater changes in direction than the Engineer estimated. Longer reaches minimize the number of lining set-ups, lowering equipment time and direct labor costs; reduces bypass pumping time; results in less traffic maintenance; and creates other associated efficiencies. The extended installation reaches will reduce the Engineer's Estimate from 31 setups to near 20 setups. Staff are of the opinion that the estimated rate of production is achievable based on Green Mountain Pipeline Services past completed projects and experience. These are the primary reasons the Engineer's Estimate was significantly higher than the Contractor's bid price.

References were checked and found to be favorable. Green Mountain Pipeline Services has successfully completed several past MWRA projects since 2006 as an on-call pipeline maintenance repair contractor, sub-contractor and general contractor on rehabilitation projects of similar pipe size to the Reading Extension Sewer and Metropolitan Sewer Rehabilitation project. Past MWRA projects include: cured-in-place pipe lining in Reading; manhole rehabilitation project in multiple towns/cities including Arlington, Cambridge and Medford; and a service contract with MWRA Wastewater Operations for manholes and pipeline rehabilitation. All MWRA references cited satisfactory to very good in all categories with excellent evaluation scores for on-site supervisory personnel. Outside references noted very good to excellent evaluations on projects of similar length and size to MWRA's Contract 7164 in Danvers, Wakefield, Arlington and Shrewsbury, and also noted very good to excellent on-site field personnel.

Staff are of the opinion that Green Mountain Pipeline Services possesses the skill, ability, and integrity necessary to perform the work under this contract and is qualified to do so. Staff recommend the award of this contract to Green Mountain Pipeline Services, Inc. as the lowest responsible and eligible bidder, conditioned upon DEP authorization to award and waiver of SRF DBE/WBE participation requirements.


BUDGET/FISCAL IMPACT:

The FY17 CIP includes a budget of \$4,266,542 for Contract 7164. The contract award amount is \$2,048,945. It should be noted that Contract 7164 will receive funding through the DEP State Revolving Fund.

MBE/WBE PARTICIPATION:

The D/MBE and D/WBE participation requirements for this contract were established at 3.4% and 3.8%, respectively. Green Mountain Pipeline Services submitted a Schedule of Participation indicating a participation as an D/MBE of 15% by GVC Construction (a certified D/M/WBE firm). Green Mountain Pipeline Services also submitted a Request for Waiver to DEP for waiver of the D/WBE participation requirements. The Authority is awaiting DEP's action on the request and approval for award.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: March 15, 2017
SUBJECT: Dorchester Interceptor Sewer (Sections 240/241/242) Rehabilitation
Design, Construction Administration and Resident Engineering/Inspection
Services
CDM Smith Inc.
Contract 7512

COMMITTEE: Wastewater Policy & Oversight

Milan A. Horbaczewski, P.E., Program Manager
A. Navanandan, P.E., Chief Engineer
John P. Vetere, Deputy Chief Operating Officer
Preparer/Title

____ INFORMATION

X VOTE


Michele S. Gillen

Director of Administration


Michael J. Hornbrook

Chief Operating Officer

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to award Contract 7512, Dorchester Interceptor Sewer (Sections 240/241/242) Rehabilitation Design, Construction Administration and Resident Engineering/Inspection Services to CDM Smith Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the amount of \$1,496,354, for a contract term of 54 months from the Notice to Proceed.

BACKGROUND:

The MWRA Dorchester Interceptor Sewer is approximately 6,500-linear feet (as depicted in Figure 1), and was constructed in 1895-1896 of brick. Section 242 is 42-inch by 28-inch egg shaped; Section 241 is 48-inch by 36-inch elliptical shaped; and Section 240 is 48-inch by 36-inch elliptical shaped with approximately 1,000-linear feet replaced with concrete pipe. Recent internal inspections have revealed many structural and non-structural deficiencies in the 120 year old sewer.

The MWRA Dorchester Interceptor conveys flows from MWRA's Neponset Valley Sewer, as well as directly connected service areas in Boston and Milton, and discharges its flows to the BWSC owned and operated "BWSC Dorchester Interceptor" that carries flows to MWRA's Columbus Park Connection and Headworks.

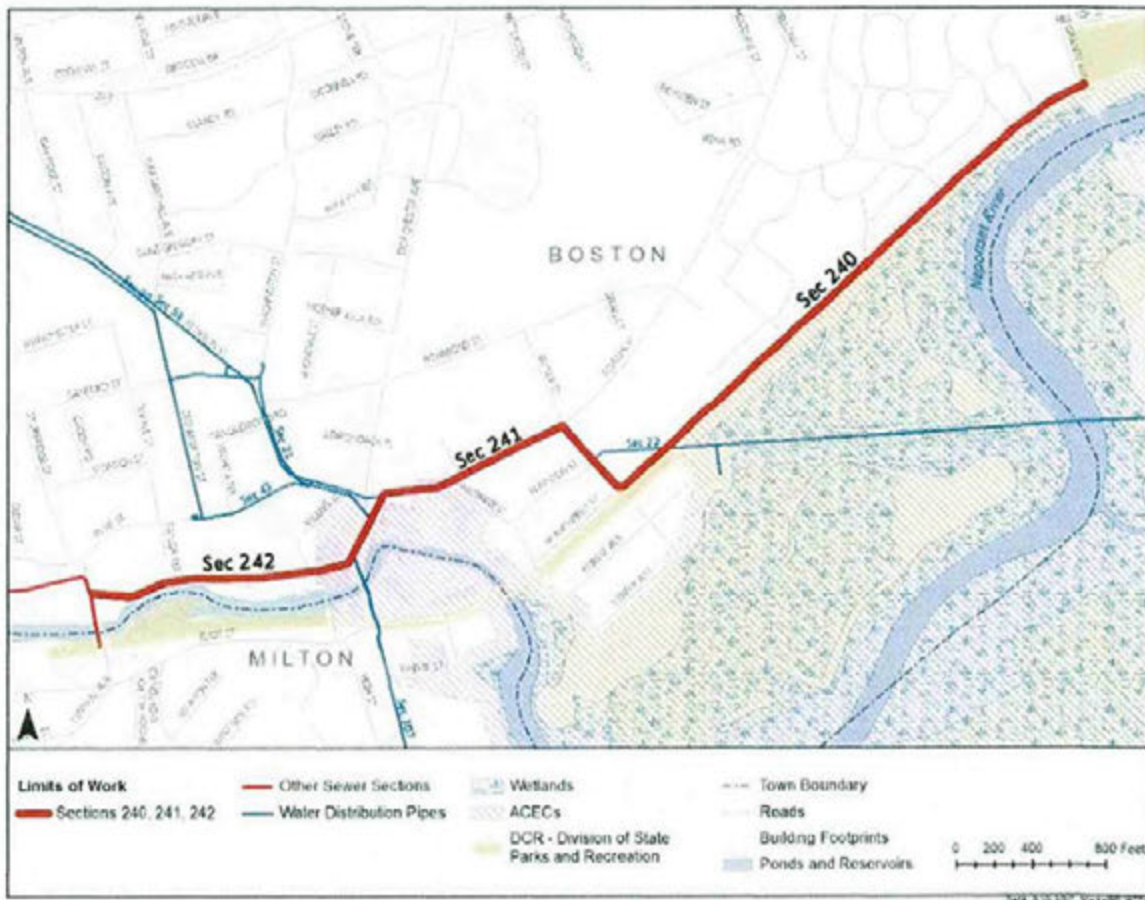


Figure 1: Dorchester Interceptor Sewer (Sections 240/241/242) Location Map

Internal inspections of the MWRA Dorchester Interceptor were performed by the MWRA. The inspection revealed that several segments of the MWRA Dorchester Interceptor had progressed from cracked to broken pipe since previous inspections. In addition to the cracked, broken and deformed pipe segments, numerous areas of heavy root intrusion and light to heavy infiltration also exist (see representative sewer section depicted in Figure 2). Manholes along the MWRA Dorchester Interceptor are mostly of brick construction with infiltration/inflow and deteriorating mortar issues. The MWRA Dorchester Interceptor is subject to high groundwater, and its rehabilitation will decrease the amount of infiltration from it into the BWSC Dorchester Interceptor.



Figure 2: Representative DIS Sewer Section

DISCUSSION:

Contract 7512 will include design, construction administration, and resident engineering/inspection services for the inspection, evaluation and rehabilitation of approximately 6,500-linear feet of the Dorchester Interceptor Sewer, and associated manholes.

The Consultant shall provide and perform all professional engineering services, including civil, environmental, permitting and all supporting services required to perform the work of this contract. Under this project, the Consultant shall review the previous assessments and project documentation; perform a pipeline/manhole condition assessment; evaluate rehabilitation alternatives; obtain all required permits; determine construction mitigation measures for residents, businesses, pedestrians, traffic, and Cedar Grove Cemetery; investigate bypass alternatives; and produce construction contract documents.

Design and construction bidding services are estimated to take 24 months from Notice to Proceed. Construction is estimated to take 18 months plus a 12-month warranty period.

Procurement Process

On December 30, 2016, MWRA issued a one-step Request for Qualifications Statements/Proposals (RFQ/P).

The RFQ/P included the following evaluation criteria: Cost - 25 points; Capacity/Qualifications and Key Personnel - 20 points; Experience/Past Performance on Similar Non-Authority Projects - 20 points; Past Performance on Authority Projects - 15 points; Technical Approach/Organization and Management Approach - 15 points; and MBE/WBE participation - 5 points.

On February 3, 2017, MWRA received proposals from four firms: Bryant Associates, Inc. (Bryant); CDM Smith Inc. (CDM Smith); Kleinfelder Northeast, Inc. (Kleinfelder); and Stantec Consulting Services Inc. (Stantec).

The proposal costs are presented below:

PROPOSER	PROPOSED CONTRACT COST	LEVEL OF EFFORT (LOE)
Kleinfelder	\$1,195,835.00	9,947 hours
Bryant Associates	\$1,248,328.07	11,713 hours
<i>Engineer's Estimate</i>	<i>\$1,248,900.00</i>	<i>9,990 hours</i>
Stantec	\$1,492,374.32	12,908 hours
CDM Smith	\$1,496,354.00	11,312 hours

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

PROPOSER	TOTAL POINTS	*ORDER OF PREFERENCE/ TOTAL SCORE	FINAL RANKING
CDM Smith	388	9	1
Kleinfelder	390	10	2
Bryant Associates	365	14	3
Stantec	334	17	4

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

CDM Smith's cost proposal is 19.8% higher than MWRA's Engineer's Estimate. The proposal, however, offers a greater level of effort (LOE) of 13.2% more hours than the Engineer's Estimate. The average of the four proposer's hours is 11,470, slightly higher than CDM Smith's 11,312 hours. More specifically, CDM Smith's LOE proposed for Task 2 (Design) offers 27.6% more hours than in the Engineer's Estimate. CDM Smith's technical approach was extremely detailed and identified issues and supported their proposed level of effort. CDM Smith's level of effort is deemed appropriate when compared to the other proposers' LOE, the quality/experience of the staff proposed and identification of critical design and construction issues.

CDM Smith's proposal presented very strong qualifications, experience, past performance, technical approach and capacity. CDM Smith was ranked first overall by three Selection Committee members. CDM Smith received the highest points in three individual selection criteria (the highest of any proposer). The CDM Smith team will be led by a Project Manager with significant and highly relevant, recent experience conducting preliminary design services for the rehabilitation of the Boston Water and Sewer Commission Dorchester Interceptor that evaluated the use of cured-in-place linings to rehabilitate an existing 60-inch diameter brick sewer. The project also included the preliminary design of several alternatives for diverting the flow during the rehabilitation including temporary bypass systems. CDM Smith's Project Manager has also managed the design efforts for other similar projects, including rehabilitation of irregularly shaped sewers, for BWSC and also for MWRA-owned sewers crossing through a site being developed by Winchester Hospital. The Project Engineer designated in the proposal also has significant relevant project experience. The qualifications of CDM Smith's technical staff are very high and their experience is very applicable to this project. Previous experience with CDM Smith has been excellent. Internal and external references were found to be favorable and all respondents indicated they would rehire the firm. CDM Smith's technical approach demonstrated thorough understanding of the project and its critical design and construction issues, and appropriately identified several key project issues and discussed solutions.

Kleinfelder presented good qualifications, experience, past performance, technical approach and capacity but the Selection Committee deemed Kleinfelder's proposal not as strong in any of these criteria as CDM Smith's. Kleinfelder was ranked first by two Selection Committee members but only received the highest points in one of the individual selection criteria. Kleinfelder's level of effort proposed was significantly less than the other three proposers. Kleinfelder's proposed 9,947 hours was low as compared to the average of the four proposers of 11,470 hours. The higher level of effort for the other three proposers is believed to be the correct level of effort to successfully complete this project.

Bryant Associates' proposed Project Manager and Project Engineer have relevant experience, but the Committee had concerns that the firm has less demonstrated experience as a prime and has worked only as a subconsultant on Authority projects.

Stantec's technical approach was generic and should have included more discussion on project challenges and solutions. Internal references for several current MWRA projects were only fair

and the Committee felt that capacity was an issue with Stantec.

Based on final rankings, the Selection Committee recommends the award of this contract to CDM Smith, in an amount not to exceed \$1,496,354. In accordance with MWRA's procurement procedures, staff entered into discussions with CDM Smith to confirm costs, level of effort and project management. Based on those discussions, staff are of the opinion that CDM Smith's proposal provides the best value to MWRA for this project.

BUDGET/FISCAL IMPACT:

The FY17 CIP includes a budget of \$1,000,000.00 for Contract 7512. The contract award amount is \$1,496,354.00 or \$496,354.00 over budget. This amount will be covered within the five-year CIP spending cap.

MBE/WBE PARTICIPATION:

The minimum MBE and WBE participation requirements for this project were established at 7.18% and 5.77% respectively. CDM Smith has committed to 16.00% MBE and 5.96% WBE participation.



MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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WATER POLICY AND OVERSIGHT COMMITTEE MEETING

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

to be held on

Wednesday, March 15, 2017

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

Time: Immediately following Wastewater Comm.

AGENDA

A. Information

1. Status of Water Supply Dams
2. Local Water System Assistance Program and Lead Loan Program Annual Update

B. Contract Awards

1. Western Operations Maintenance Facility – Marlborough: E. A. Colangeli Construction Company, Inc., Contract 6650B (materials to follow)

C. Contract Amendments/Change Orders

1. Wachusett Aqueduct Pumping Station: BHD/BEC JV 2015, A Joint Venture: Contract 7157, Change Order 9

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the
Water Policy and Oversight Committee

February 15, 2017

A meeting of the Water Policy and Oversight Committee was held on February 15, 2017 at the Authority headquarters in Charlestown. Chairman Blackmon presided. Present from the Board were Messrs. Flanagan, Foti, Pappastergion, Peña, Vitale and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Mike Hornbrook, Steve Estes-Smargiassi, Fred Brandon, Nava Navanandan, Maureen McAvoy, Dave Pottle, and Bonnie Hale. The meeting was called to order at 12:10 p.m.

Information

Update on Lead and Copper Local and National Activities

Staff provided a brief update.

Approvals

*Redundancy for the Metropolitan Tunnel System

Staff gave a presentation on the recommended alternative of constructing northern and southern deep rock tunnels to provide redundancy, noting that the Advisory Board had voted to approve that option, and that after a meeting with UCANE, its representatives also expressed their support. The Committee recommended approval of the preferred alternative (ref. agenda item B.1).

Contract Awards

*Slide Gate Installation, Quabbin Aqueduct at Shaft 12: Arcadis, U.S., Inc., Contract 7509

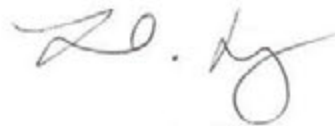
Staff gave a presentation on the project, and there was general discussion. The Committee recommended approval of the contract award (ref. agenda item C.1).

The meeting adjourned at 12:35 p.m.

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

STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 15, 2017
SUBJECT: Status of Water System Dams



COMMITTEE: Water Policy & Oversight

X INFORMATION
VOTE

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


Michael J. Hornbrook
Chief Operating Officer

In light of the recent Oroville, California dam spillways emergency, this update provides condition information for all MWRA water system dams, provides an overview on dam safety regulatory compliance, and a summary of spending on completed improvements. Ongoing dam evaluations and future maintenance efforts are described.

RECOMMENDATION:

For information only.

DISCUSSION:

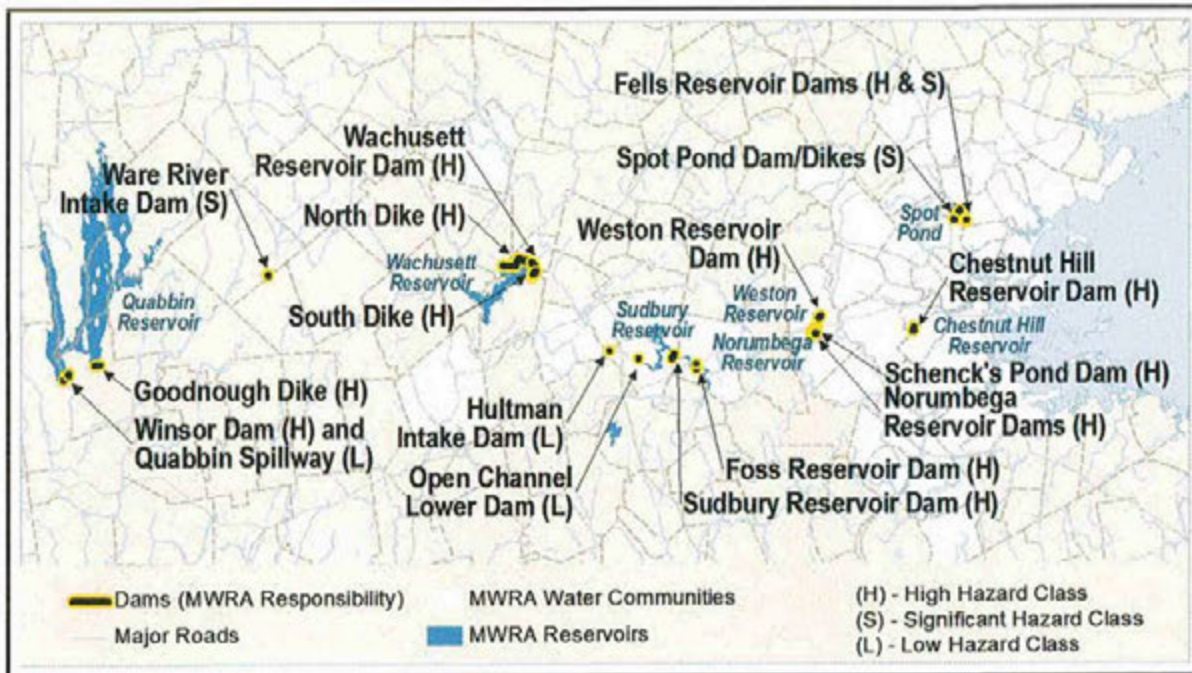
All MWRA water supply dams are well maintained, regularly inspected, and undergoing engineering evaluations in compliance with the Commonwealth of Massachusetts Office of Dam Safety Regulations. MWRA has invested significantly in dam rehabilitation and maintenance resulting in notably improved conditions.

There are 27 water supply dams and dikes across the MWRA water system (Figure 1). These dams are technically owned by the Commonwealth of Massachusetts with the Department of Conservation and Recreation-Division of Water Supply Protection (DCR-DWSP) and MWRA sharing routine maintenance and inspection activities. Since the 2004 Memorandum of Understanding with the DCR, MWRA has responsibility for capital and major maintenance for the reservoir dams and has taken the lead in assuring regulatory compliance. MWRA also has responsibility for the emergency reservoir dams as they were part of the water transmission system.

Some reservoirs are impounded by one dam and others are impounded by several dams and dikes (Table 1). Of these structures, 17 are classified as *High Hazard*¹, 7 are classified as *Significant Hazard*, and 3 are classified as *Low Hazard*.

¹ - Hazard class is a regulatory definition that refers to potential life and/or property damage that could result from dam failure. Design, maintenance and inspection parameters are based on the class of the dam.

Figure 1



Regulatory Compliance

All MWRA water system dams comply with the Massachusetts Office of Dam Safety Regulations (302 CMR 10:00) for management, operation and maintenance, inspection, and development and exercising of Emergency Action Plans (EAPs).

Phase I dam safety inspections are required biennially for High Hazard dams; every 5 years for Significant Hazard dams, and every 10 years for Low Hazard dams. MWRA has met these requirements and performed the required inspections under contract by qualified dam safety engineers.

EAPs are required to be completed for each High and Significant Hazard class dam and must follow the Federal FEMA-64 guidance. These plans include various responsibilities of dam owners and operators, dam break assessments, notification flow charts, and emergency actions by different parties. The EAPs also include downstream flood inundation zone mapping with details on water elevation and time-of-travel of the flood wave. MWRA is currently updating its existing EAPs for its western dams (Quabbin, Wachusett, Sudbury, Norumbega, and Weston).

Dams of the MWRA Water System

The majority of MWRA source and emergency reservoir dams are earthen embankment dams. There are also five masonry gravity dams, one of which is the large Wachusett Dam (Table 1).

These dams range in age from 147 years old (Chestnut Hill Reservoir Dam) to about 80 years old (Weston and Norumbega dams). The lifespan of a dam is strongly dependent on the level of maintenance performed and its structural safety. MWRA seeks to extend their life through good dam safety practices and attention.

Table 1

Dam Name and Location		Year Completed	Construction/Type	Storage (MG)
Quabbin Reservoir	Winsor Dam, Belchertown	1939	Earthen Embankment	412,000
	Goodnough Dike, Ware	1938	Earthen Embankment	
	Quabbin Spillway	1938	Masonry - Gravity	
Ware River	Lonergan Intake Dam, Barre	1931	Masonry - Arch	Run of River
Wachusett Reservoir	Wachusett Reservoir Dam, Clinton	1905	Masonry - Gravity	65,000
	North Dike, Clinton	1905	Earthen Embankment	
	South Dike, Clinton	1905	Earthen Embankment	
Wachusett Aqueduct	Open Channel Lower Dam, Southborough	1880s	Masonry - Gravity & Earthen Embankment	8
Sudbury Reservoir	Sudbury Dam, Southborough	1898	Earthen Embankment	7,200
Foss Reservoir	Foss Reservoir Dam, Framingham	1890s	Earthen Embankment	1,500
Norumbega Reservoir	Dams 1, 2, 3, 4 and East Dike, Weston	1940s	Earthen Embankment	163
Schenck's Pond	Schenck's Pond Dam, Weston	1940s	Earthen Embankment	43
Weston Reservoir	Weston Reservoir Dam, Weston	1903	Earthen Embankment	360
Spot Pond	Dams 1, 4 and 5, Stoneham	1899	Earthen Embankment	2,500
Fells Reservoir	Dams 2, 3, 6, 7 and 8, Stoneham	1898	Earthen Embankment	63
Chestnut Hill Reservoir	Chestnut Hill Dam, Boston	1870	Earthen Embankment	413
Wachusett Aqueduct	Hultman Intake Dam, Marlborough	1940s	Masonry - Gravity	8

Major Investments in Dams

Periodic dam safety inspections since 2005 had identified a number of necessary improvements and needed analyses for these dams. Early in the dam safety compliance program development, staff created a prioritization of needs, with a plan and timeline for repairs, evaluations, and upgrades. To date, MWRA has invested over \$20 million in capital upgrades and major maintenance projects, required studies and assessments, and routine regulatory compliance work. This work includes dam safety engineering studies to understand Hydraulics and Hydrology Analyses for extreme precipitation events² and spillway adequacy, major spillway improvements such as the upgrade of Wachusett Dam's spillway and Winsor Dam's toe drain system, earthen dam maintenance such as major tree removal at many dams, major masonry improvements to spillways and structures, and installation of seepage weirs.

Dams' Conditions and Safety

By making improvements to MWRA dams and keeping current with regulatory requirements, the condition of these dams has improved, all dams are in compliance, and have been certified by the Massachusetts Office of Dam Safety to have adequate spillway capacity to meet the regulatory Spillway Design Floods (or SDF).³ Where spillways do not exist at reservoirs (such as at the Fells and Weston distribution reservoirs), they have adequate freeboard (capacity) to

² Recent updates to regional climate and precipitation studies have shown that weather patterns are changing resulting in more frequent and intense wet weather events.

³ Existing dams must meet a SDF of 1/2 the Probable maximum Flood (1/2 PMF) which is based on regional extreme precipitation events.

store this design flood. At Weston Dam, MWRA completed a parapet wall (or wave wall) to prevent this stored design flood from eroding the dam crest (Figure 3).



Figure 3. Weston Dam parapet wall

In some cases, dam spillway systems exceed the minimum regulatory SDF requirement, such as at the two largest reservoirs in the MWRA system, Wachusett and Quabbin.

At Wachusett Reservoir, the spillway can provide for the full PMF.⁴ To achieve this, improvements were made from 2008 – 2009 that included lowering the existing spillway by 2 feet and installation of a 100 foot long by 5 foot high stainless steel automated Crest Gate (Figure 4). This system provides MWRA with greater operational flexibility to control reservoir elevations, such as lowering the reservoir in advance of a hurricane or major storms. This project also included creation of an auxiliary spillway carved in bedrock and lined with stone gabion armoring to pass the design flood (Figure 5). A riprap berm was created on the spillway side of the dam to protect from overtopping erosion.



Figure 4. Wachusett Spillway Crest Gate

⁴ The regulatory requirement for existing dams is to design for the ½ PMF (28 inches of rain in 72 hours).

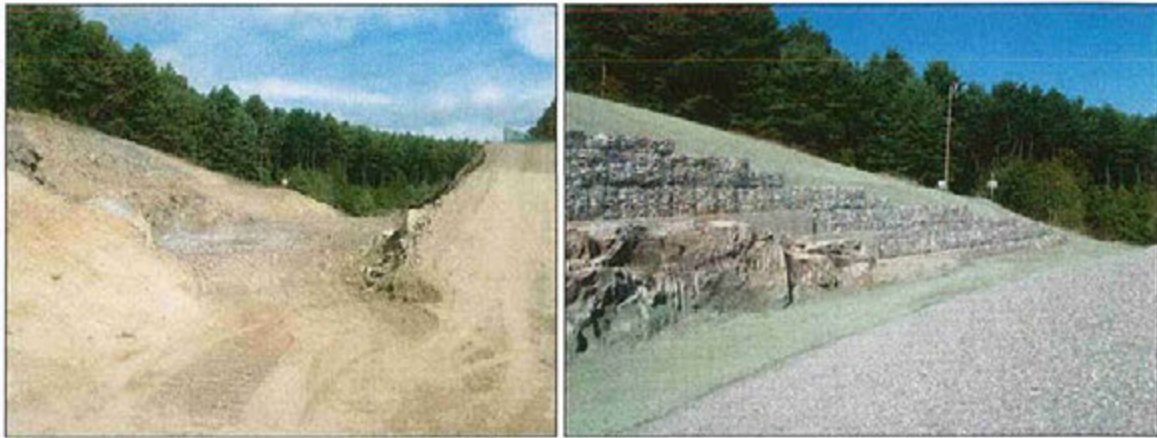


Figure 5. Construction of Auxiliary Spillway (L) and after completion (R)

At Quabbin Reservoir, the Winsor Dam internal toe drainage system and piezometers were upgraded in 2007. The masonry Quabbin Spillway (technically a gravity dam itself) was structurally improved through injection grouting and repointing on its upstream and downstream faces and crest in 2010 (Figure 6).



Figure 6. Quabbin spillway repairs (before L) and after (R)

The existing spillway discharge channel (Figure 7) is cut from bedrock and capable of withstanding substantial discharges from the regulatory design flood without engaging the Auxiliary Spillway, which is 1,500 feet away from the dam. A 2012 Hydraulics and Hydrologic study of the system showed that the Quabbin Spillway can also accommodate the full PMF (twice the regulatory level) with the Auxiliary Spillway having a discharge of only 0.7 ft of water over its crest.

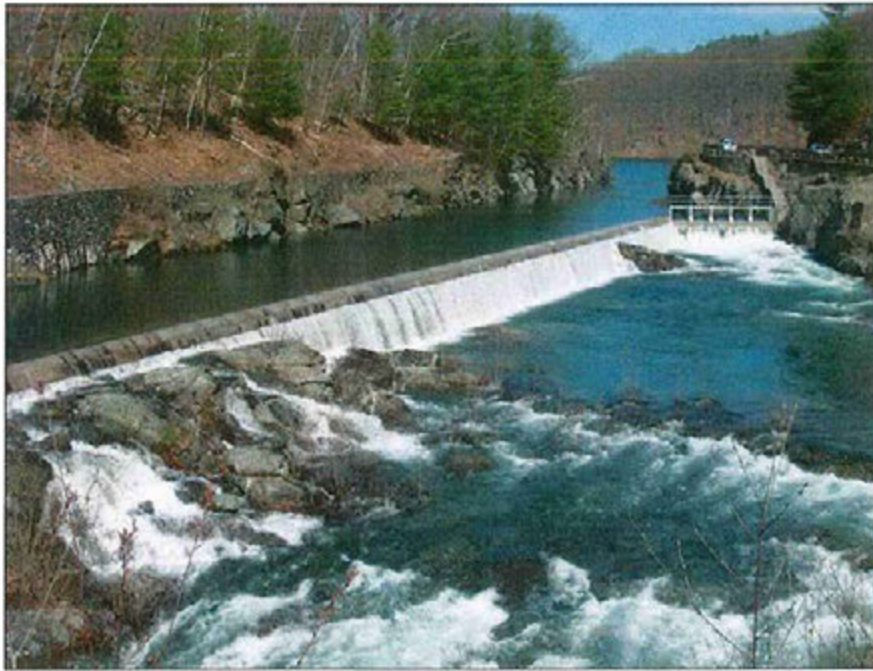


Figure 7. Quabbin Spillway

Planned Dam Improvements Underway

MWRA continues to address other identified dam improvement and repair needs which are either in progress now or in planning for the near future. These include:

- Structural stabilization of the decommissioned Gatehouse #1 at Chestnut Hill Reservoir (which is part of the dam);
- Reconnection of a 150 foot long by 5 foot high gap in the Wachusett North Dike created in the mid 1960s to accommodate the Leominster raw water pump station;
- Installation of dam monitoring instrumentation such as piezometers to assess internal pore pressure and slope stability conditions (Wachusett, Sudbury, Weston, Foss, Chestnut Hill, Norumbega, Schenck's Pond, and Fells);
- Partial armoring of a part of the earthen Foss Reservoir dam and enhancement of the turf conditions to protect it against overtopping erosion from wave run-up during the design flood;
- Spillway masonry re-pointing at Sudbury Reservoir; and
- Seismic safety factor evaluations for Norumbega, Foss and Wachusett dikes.

As dams continue to age, constant maintenance work will be necessary for shorter lifespan components directly exposed to weathering and climate such as soils and turf on earthen dams, and concrete and masonry components. Mechanical components such as gates and valves must also be inspected and maintained more frequently to ensure their long-term operability.

Additionally, MWRA has invested in developing and now updating Emergency Action Plans (EAPs) for all High and Significant Hazard Class dams to address recent changes in Federal dam safety guidelines. These EAPs updates will also have improved inundation zone mapping to identify critical facilities and transportation nodes to assist downstream emergency managers for evacuation plans.

Looking to the future, MWRA must remain vigilant to changing climate conditions that will likely result in longer drought periods but interspersed with extreme wet weather events.

BUDGET/FISCAL IMPACT:

The approved current expense budget contains funding for dam safety compliance contracts for regulatory needs, evaluations, designs of dam improvements, and maintenance. To date, MWRA has spent over \$20 million in capital upgrades, major maintenance projects, required studies and assessments, and routine regulatory compliance work. FY 2017 Capital Improvement Program Budget contains \$2.5 million for future dam projects. Staff continue to develop budgets as studies and designs go forward on future projects. The Waterworks Master Plan identifies Dam Safety and spillway upgrades and needs forecasts for the future.


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: March 15, 2017
SUBJECT: Local Water System Assistance Program and Lead Loan Program Annual Update

COMMITTEE: Water Policy & Oversight

Carolyn M. Fiore, Deputy Chief Operating Officer
Stephen Estes-Smargiassi, Dir. Of Planning and Sustainability
Carl H. Leone, Senior Program Manager
Preparer/Title

X INFORMATION
VOTE


Michael J. Hombrook
Chief Operating Officer

RECOMMENDATION:

For information only. Thirty-eight of the 45 eligible member water communities¹ have participated in MWRA's \$432 million Local Water System Assistance Program. Through March 2017, \$336 million in 10-year interest-free loans have been distributed to member communities to finance 379 projects that will help maintain high water quality in local distribution systems. Community loans are repaid to MWRA over a ten-year period. All scheduled community loan repayments have been made, more than \$214 million to date.

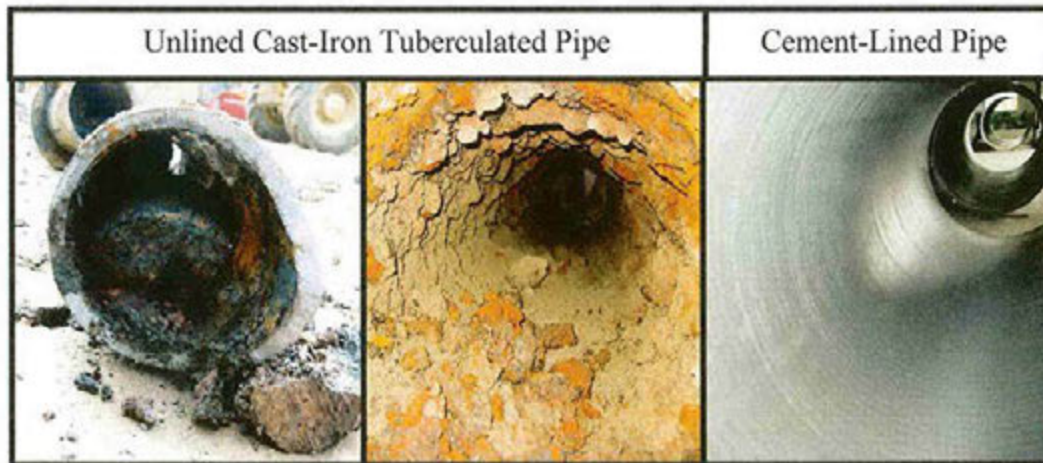
In March 2016, the Board approved an enhancement to the Local Water System Assistance Program to provide up to an additional \$100 million in 10-year interest-free loans to communities solely for efforts to fully replace lead service lines. Under MWRA's Lead Service Line Replacement Loan Program (also known as the Lead Loan Program – LLP) each community can develop its own program, tailored to its local circumstances. Through March 2017, MWRA has distributed a total of \$2.0 million in LLP funds to two communities: Quincy - \$1.5 million and Winchester - \$0.5 million. Two additional LLP distributions to Newton for \$4.0 million and Somerville for \$1.2 million are planned for May 2017.

BACKGROUND:

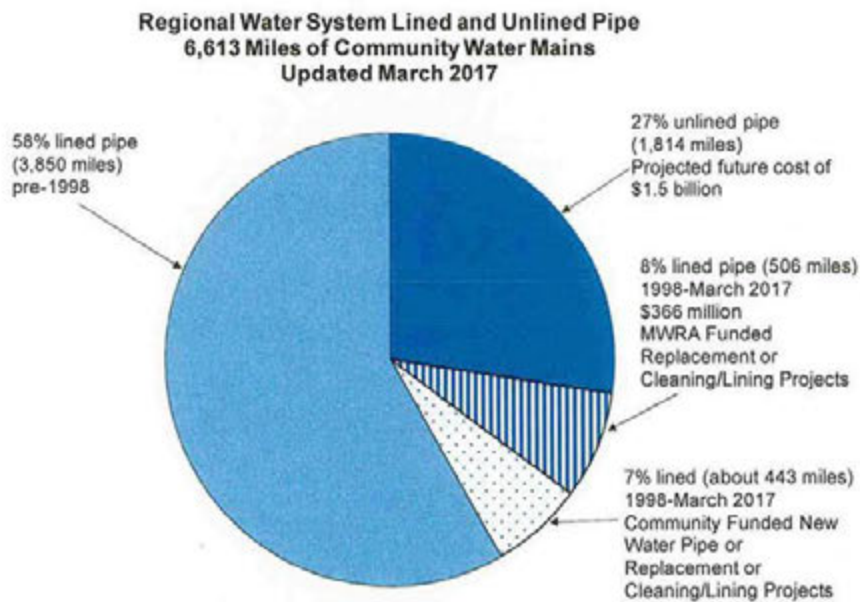
MWRA's goal in providing financial assistance to member communities is to improve local water systems to help maintain high water quality as it passes from MWRA's facilities through local pipelines to customers' taps. Continued improvement of local water systems was a critical element of MWRA's Integrated Water Supply Improvement Program, which focused on cost-effective investment in water quality upgrades. Older water mains, particularly those constructed of unlined cast-iron pipe, need to be replaced or cleaned and lined to prevent tuberculation (rust build-up), loss of disinfectant residual, and potential bacteria growth. Similarly, replacement of lead service lines reduces the risk that lead can leach into the water consumed in those homes.

¹ MWRA has a total of 50 water communities (with Dedham/Westwood Water District counted as one). Under MWRA's Local Water System Assistance Program, 45 are allocated loan funds. The five ineligible water communities have special case considerations: Cambridge receives water on an emergency-only basis; Lynn receives water only for the GE plant; and Clinton, Leominster, and Worcester (also emergency only) receive untreated water from the Wachusett Reservoir. The three Chicopee Valley Aqueduct (CVA) communities (Chicopee, South Hadley FD#1, and Wilbraham) are allocated funds under the Phase 2 Loan Program, but were not originally allocated loan funds under the Phase 1 – Local Pipeline Assistance Program, as that program was initiated as part of the treatment decision for the John J. Carroll Water Treatment Plant.

The Phase 1 - Local Pipeline Assistance Program (LPAP) began in FY01 and was completed at the end of FY13. It provided \$222 million in 10-year interest-free loans to water system communities for water main replacement, cleaning and lining projects, and lead service line replacements. The Phase 2 - Local Water System Assistance Program (LWSAP) commenced in FY11 and is approved through FY20. The Phase 2 expansion of the water loan program added \$210 million in interest-free loans for member water communities (including a \$10 million allocation for the three Chicopee Valley Aqueduct communities – Chicopee, South Hadley FD#1, and Wilbraham). Through March 2017, a total of \$96 million remains to be distributed and seven communities have been distributed their entire funding allocation (see Attachment 1 - Allocation and Fund Utilization by Community).



Prior to 1998, 3,850 miles (58%) of the 6,613-mile regional distribution system was lined water pipe. Since 1998, MWRA's community financial assistance programs (including the \$30 million pilot program in 1998/99) have invested \$366 million in local water distribution systems and resulted in the replacement or cleaning and lining of 506 miles of water mains. Additional community-only funded rehabilitation or new pipeline projects have added 443 miles of lined water mains. Approximately 1,814 miles (27%) of locally-owned distribution systems remain unlined, representing a regional need of about \$1.5 billion for future water main rehabilitation.



DISCUSSION:

Local Water System Assistance Program loan funds are allocated to member water communities based on a combination of their percent share of unlined pipe and wholesale water charge. MWRA's partially supplied communities receive pro-rated shares based on their percentage use of MWRA water. Under the ongoing Phase 2 LWSAP (FY11-FY20), \$114 million has been distributed to 36 member communities to fund local water system projects. The majority of financial assistance loans (94%) under Phase 2 LWSAP have continued to fund replacement/rehabilitation of unlined water mains, lead service line replacements, water tank rehabilitation, and other water quality projects. In addition, some communities have undertaken system efficiency projects (Tier Two Projects) such as water meter replacements, automated meter reading systems, and booster pump station rehabilitation. Through March 2017, a total of \$96 million remains to be distributed and seven communities have been distributed their entire funding allocation (see Attachment 1 - Allocation and Fund Utilization by Community). Attachment 2 provides individual statistics for the total miles of lined and unlined water main in each member water community.

Update on Lead Service Line Replacement Loan Program

In March 2016, the Board approved an enhancement to the Local Water System Assistance Program to provide up to \$100 million in 10-year interest-free loans to communities solely for efforts to fully replace lead service lines. Through March 2017, MWRA has distributed a total of \$2.0 million in LLP funds to two communities and two additional LLP distributions totaling \$5.2 million are planned for May 2017. Details on these four projects are noted in the bullets below:

- Quincy received a \$1.5 million loan in December 2016 to fund the first phase of its program targeting the removal of 141 identified public/private lead services. Quincy will pay all costs for replacement of both the public/private portions of the services. The City has already obtained signed right-of-entry forms from over 90% of property owners. Construction will begin in spring 2017. The program's second phase will address any additional lead service identified and potential lead goosenecks.
- Winchester received a \$0.5 million loan in March 2017 to fund the first phase of its program targeting the removal of 240 identified public/private lead services and 668 lead goosenecks (public portion only). Winchester will pay all costs for replacement of lead pipe on the public portion of services and the first \$1,200 in costs on the private portion of services for homeowners who sign consent forms. First phase design is ongoing and construction will begin in spring 2017. The program's second phase will continue lead service and gooseneck replacements based on the results of phase one.
- A \$4.0 million loan to Newton is planned for May 2017. Newton is currently completing design plans for the replacement of 636 public/private lead services. The City is in development of its plan to help finance homeowners costs for water service replacement on the private portion. Construction is planned to begin spring 2017.



- A \$1.2 million loan to Somerville is planned for May 2017. Somerville is developing a phased program to eliminate approximately 1,874 public/private lead services. The initial MWRA loan targets the removal of the first 200 lead services. Somerville will pay all costs for replacement of lead pipe in the public portion of services and the first \$2,000 in costs on the private portion of services for homeowners who sign consent forms. Future phases will be based on the results of phase one.

MWRA staff continue to work with communities to develop their lead service line replacement programs, and interest has continued to increase. Based on staff contacts, six other MWRA communities seem likely to participate and start a replacement program in the near future: Malden, Marlborough, Medford, Needham, Revere, and Winthrop. Staff anticipate that applications under the Lead Loan Program are likely to begin with smaller distributions and ramp up as communities develop their individual phased programs, enhance existing inventories/records, and engage individual customers via outreach and education. Community decision making to identify the most appropriate community contribution for the private portion lead service line replacement is a key aspect of local implementation. Future EPA requirements may stimulate lead service line removal work over the next few years.

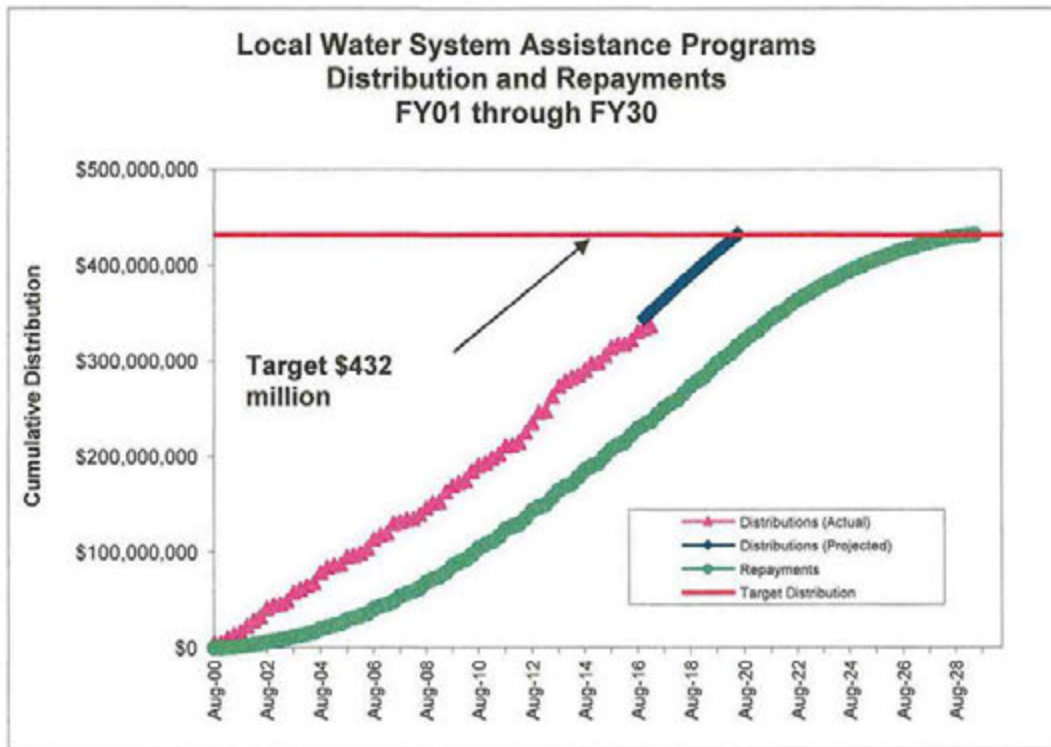
MWRA staff have been participating in a national Lead Service Line Replacement Collaborative with representatives from about two dozen public health, environmental, water supply and other groups. While the various groups typically do not share common agendas, they all agreed to work together on efforts to accelerate the replacement of lead service lines. The Collaborative completed its first product - an extensive web site designed to provide information to individuals and communities on lead service lines - in January 2017. USA Today ran a national story on the launch of the web site, see: <http://www.lslr-collaborative.org/>. The link to the Collaborative's website is included on MWRA's Lead Loan Program web site.

BUDGET/FISCAL IMPACT:

The FY17 CIP includes an overall net budget of zero dollars for water system financial assistance because community loans are offset by repayments over time. However, depending on the timing and level of community loan requests, annual loan distributions can fluctuate, sometimes causing over-spending or under-spending (versus budget) for any particular year.

The program budget target is \$432 million for both loan distributions and repayments. To date, \$336 million in loans have been distributed and the program has a remaining balance of \$96 million in future community loans (through FY20). Community loan repayments to date are \$214 million, leaving a remaining potential of \$218 million in future repayments (through FY30). As community loans are repaid, the funds are deposited into MWRA's construction fund. The FY17 CEB budget includes \$4.1 million for the cost of the interest as a separate line item under Debt Service.

The graph below presents loan funding distributions (actual and projected) and corresponding repayments for the program - FY01 through FY30.



Proposed New Funding for Phase 3 - Local Water System Assistance Program

The FY18 proposed CIP includes a staff recommendation for an additional \$210 million to fund Phase 3 - Local Water System Assistance Program. The staff recommendation is in response to the Advisory Board's comments on the FY17 CIP noting the need for additional community funding for local water projects. The proposed FY18 CIP is currently being reviewed by the Advisory Board and will be presented to the Board for consideration in June 2017.

MBE/WBE PARTICIPATION:

MBE/WBE goals for community projects are established in the Program Guidelines.

ATTACHMENTS:

- Attachment 1 – Phase 2 - LWSAP Allocation and Fund Utilization by Community
- Attachment 2 – Lined and Unlined Pipe by Community

ATTACHMENT 1
MWRA LOCAL WATER SYSTEM ASSISTANCE PROGRAM
ALLOCATION AND FUND UTILIZATION BY COMMUNITY
THROUGH MARCH 2017

Community	Community Total Allocation	Community Annual Allocation	Allocation To Date (Year 7)	Funds Distributed Thru Mar 17	Percent Distributed (Year 7)	Total Remaining Funds	Funds Currently Available
Arlington	\$6,225,000	\$622,500	\$4,357,500	\$2,200,000	50%	\$4,025,000	\$2,157,500
Bedford *	\$2,418,000	\$500,000	\$2,418,000	\$2,418,000	100%	\$0	\$0
Belmont	\$3,477,000	\$500,000	\$3,477,000	\$3,000,000	86%	\$477,000	\$477,000
Boston	\$38,754,000	\$3,875,400	\$27,127,800	\$27,127,800	100%	\$11,626,200	\$0
Brookline	\$3,426,000	\$500,000	\$3,426,000		0%	\$3,426,000	\$3,426,000
Canton *	\$3,216,000	\$500,000	\$3,216,000	\$2,000,000	62%	\$1,216,000	\$1,216,000
Chelsea	\$3,814,000	\$500,000	\$3,500,000	\$3,011,200	86%	\$802,800	\$488,800
Dedham/Westwood *	\$503,000	\$503,000	\$503,000	\$503,000	100%	\$0	\$0
Everett	\$4,672,000	\$500,000	\$3,500,000	\$3,500,000	100%	\$1,172,000	\$0
Framingham	\$7,357,000	\$735,700	\$5,149,900	\$5,149,900	100%	\$2,207,100	\$0
Lexington	\$3,024,000	\$500,000	\$3,024,000	\$1,145,015	38%	\$1,878,985	\$1,878,985
Lynnfield Water Dist.	\$1,396,000	\$500,000	\$1,396,000	\$650,000	47%	\$746,000	\$746,000
Malden	\$7,272,000	\$727,200	\$5,090,400	\$1,774,000	35%	\$5,498,000	\$3,316,400
Marblehead	\$4,237,000	\$500,000	\$3,500,000		0%	\$4,237,000	\$3,500,000
Marlborough *	\$1,917,000	\$500,000	\$1,917,000	\$1,283,800	67%	\$633,200	\$633,200
Medford	\$6,959,000	\$695,900	\$4,871,300		0%	\$6,959,000	\$4,871,300
Melrose	\$3,988,000	\$500,000	\$3,500,000	\$2,440,000	70%	\$1,548,000	\$1,060,000
Milton	\$4,123,000	\$500,000	\$3,500,000	\$2,000,000	57%	\$2,123,000	\$1,500,000
Nahant	\$1,490,000	\$500,000	\$1,490,000	\$1,142,100	77%	\$347,900	\$347,900
Needham *	\$794,000	\$500,000	\$794,000		0%	\$794,000	\$794,000
Newton	\$13,602,000	\$1,360,200	\$9,521,400	\$8,161,200	86%	\$5,440,800	\$1,360,200
Northborough *	\$1,048,000	\$500,000	\$1,048,000		0%	\$1,048,000	\$1,048,000
Norwood	\$4,395,000	\$500,000	\$3,500,000	\$3,500,000	100%	\$895,000	\$0
Peabody *	\$1,089,000	\$500,000	\$1,089,000	\$1,089,000	100%	\$0	\$0
Quincy	\$10,505,000	\$1,050,500	\$7,353,500	\$7,353,500	100%	\$3,151,500	\$0
Reading	\$4,146,000	N/A **	\$4,146,000	\$4,146,000	100%	\$0	\$0
Revere	\$5,034,000	\$503,400	\$3,523,800	\$1,850,000	53%	\$3,184,000	\$1,673,800
Saugus	\$6,621,000	\$662,100	\$4,634,700	\$3,529,844	76%	\$3,091,156	\$1,104,856
Somerville	\$7,419,000	\$741,900	\$5,193,300	\$3,355,234	65%	\$4,063,766	\$1,838,066
Southborough	\$1,512,000	\$500,000	\$1,512,000		0%	\$1,512,000	\$1,512,000
Stoneham	\$2,339,000	\$500,000	\$2,339,000	\$2,339,000	100%	\$0	\$0
Stoughton*	\$2,506,000	\$500,000	\$2,506,000	\$2,506,000	100%	\$0	\$0
Swampscott	\$3,755,000	\$500,000	\$3,500,000	\$2,849,468	81%	\$905,532	\$650,532
Wakefield *	\$2,325,000	\$500,000	\$2,325,000	\$1,776,250	76%	\$548,750	\$548,750
Waltham	\$10,293,000	\$1,029,300	\$7,205,100	\$1,798,370	25%	\$8,494,630	\$5,406,730
Watertown	\$2,978,000	\$500,000	\$2,978,000	\$2,500,000	84%	\$478,000	\$478,000
Wellesley *	\$2,350,000	\$500,000	\$2,350,000	\$241,569	10%	\$2,108,431	\$2,108,431
Weston	\$1,625,000	\$500,000	\$1,625,000	\$1,005,000	62%	\$620,000	\$620,000
Wilmington *	\$611,000	\$500,000	\$611,000		0%	\$611,000	\$611,000
Winchester *	\$882,000	\$500,000	\$882,000	\$600,000	68%	\$282,000	\$282,000
Winthrop	\$3,312,000	N/A **	\$3,312,000	\$3,312,000	100%	\$0	\$0
Woburn *	\$2,591,000	\$500,000	\$2,591,000	\$1,000,000	39%	\$1,591,000	\$1,591,000
Chicopee	\$7,153,000	\$715,300	\$5,007,100	\$2,085,000	42%	\$5,068,000	\$2,922,100
South Hadley F.D. I	\$1,538,000	\$500,000	\$1,538,000		0%	\$1,538,000	\$1,538,000
Wilbraham	\$1,309,000	\$500,000	\$1,309,000		0%	\$1,309,000	\$1,309,000
TOTAL	\$210,000,000			\$114,342,250		\$95,657,750	\$53,015,550

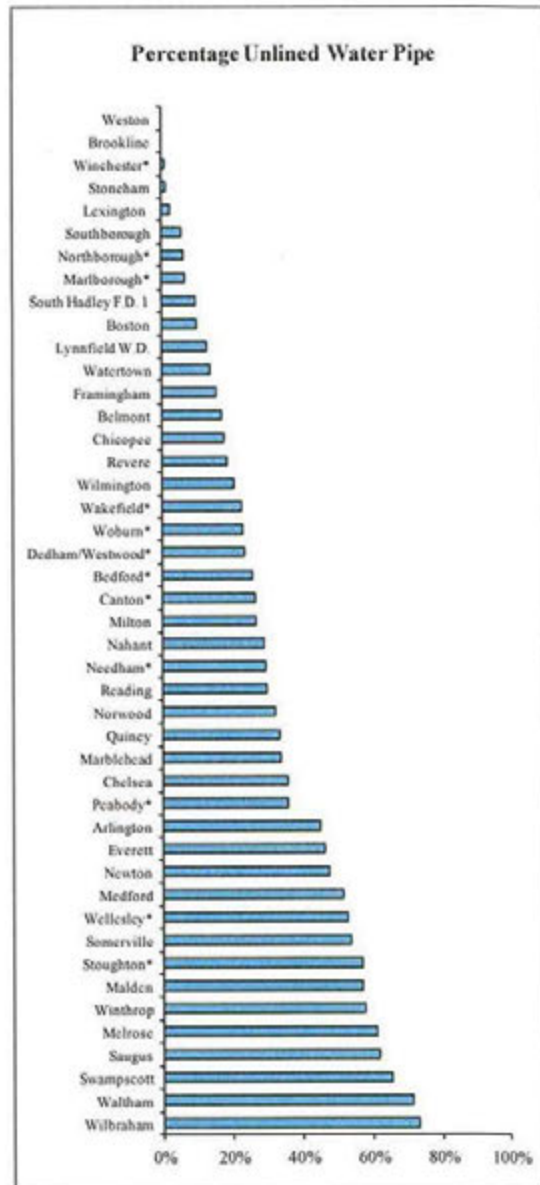
* Partially Served Communities

** Exempt by Board Approval

ATTACHMENT 2
MWRA LOCAL WATER SYSTEM ASSISTANCE PROGRAM
LINED AND UNLINED PIPE BY COMMUNITY
THROUGH MARCH 2017

Community	Total Miles of Pipe	Miles of Lined Pipe	Miles of Unlined Pipe	Percent Unlined
Arlington	132	73	59	45%
Bedford*	85	63	22	26%
Belmont	93	77	16	17%
Boston	1011	910	101	10%
Brookline	140	140	0	0%
Canton*	128	94	34	27%
Chelsea	59	38	21	36%
Chicopee	269	221	48	18%
Dedham/Westwood*	203	155	48	24%
Everett	68	37	31	46%
Frammingham	276	233	43	16%
Lexington	165	161	4	2%
Lynnfield W.D.	29	25	4	13%
Malden	121	52	69	57%
Marblehead	97	64	33	34%
Marlborough*	180	168	12	7%
Medford	144	70	74	51%
Melrose	82	32	50	61%
Milton	138	101	37	27%
Nahant	23	16	7	29%
Needham*	135	95	40	30%
Newton	319	167	152	48%
Northborough*	65	61	4	6%
Norwood	119	80	39	32%
Peabody*	208	133	75	36%
Quincy	240	159	81	34%
Reading	114	80	34	30%
Revere	107	87	20	19%
Saugus	125	48	77	62%
Somerville	125	58	67	54%
South Hadley F.D. 1	83	75	8	10%
Southborough	87	82	5	6%
Stoneham	80	79	1	1%
Stoughton*	151	65	86	57%
Swampscott	58	20	38	65%
Wakefield*	114	88	26	23%
Waltham	150	43	107	71%
Watertown	82	71	11	14%
Wellesley*	150	71	79	53%
Weston	111	111	0	0%
Wilbraham	74	20	54	73%
Wilmington	126	100	26	21%
Winchester*	112	111	1	1%
Winthrop	45	19	26	58%
Woburn*	190	146	44	23%
TOTAL	6,613	4,799	1,814	27%

* Partially Served Communities



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director *F. Laskey*
DATE: March 15, 2017
SUBJECT: Western Operations Marlborough Maintenance Facility
E. A. Colangeli Construction Co., Inc.
Contract 6650B

COMMITTEE: Water Policy & Oversight

John P. Vetere, Deputy Chief Operating Officer
A. Navanandan, P.E., Chief Engineer
Nitin Choksi, Sr. Program Manager
Preparer/Title

 INFORMATION

 X VOTE

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

RECOMMENDATION:

To approve the award of Contract 6650B, Western Operations Marlborough Maintenance Facility, to the lowest responsible and eligible bidder, E.A. Colangeli Construction Co., Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$3,367,000 for a contract term of 365 calendar days from the Notice to Proceed.

DISCUSSION:

MWRA's former Interim Corrosion Control Facility (ICCF, shown on the right) is a one-story, 7,900-square-foot structure that was built in 1994. This facility is located near the John J. Carroll Water Treatment Plant in Marlborough (Attachment 1), and is not currently being used for water treatment and can now be converted to support other MWRA Operations and Maintenance functions. This contract will modify this building space to include electrical, plumbing, mechanical and SCADA trade shops, outside covered storage and manager's office.



Interim Corrosion Control Facility

The scope of this construction contract includes demolition of process equipment, replacement and/or upgrade of building systems such as electrical, HVAC, fire protection, plumbing, roof, floors, and doors to accommodate new functions as well as to comply with current building code.

Procurement Process

Contract 6650B was advertised in Central Register as well as Boston Herald and MetroWest Daily news papers and bid in accordance with Massachusetts General Laws, Chapter 149. Bids were received and opened on February 23, 2017 from nine contractors as follows:

<u>Bidders</u>	<u>Bid Amount</u>
E. A. Colangeli Const. Co., Inc.	\$3,367,000
Barlettta Heavy Division, Inc.	\$3,380,000
Stutman Contracting Inc.	\$3,414,031
J.J. Cardosi Inc.	\$3,479,000
R. H. White Const. Co., Inc.	\$3,498,927
<i>Engineer's Estimate</i>	<i>\$3,608,000</i>
Paul J. Rogan Co., Inc.	\$3,620,724
WES Constuction Corp.	\$3,762,000
New England Builders & Contractors, Inc.	\$3,775,000
Construction Dynamics, Inc.	\$3,987,000

It should be noted that in May 2014, MWRA bid this work as part of a larger contract (MWRA 6650) that included work at the Southborough Water Quality Laboratory, and work at the Cosgrove Facilities in Clinton. However, a single bid was received that was approximately 60% higher than the Engineer's Estimate, so a decision was made to divide the construction work into three separate contracts (one for each construction site), with additional modifications. The first Contract 6650A, Southborough Water Quality Laboratory Upgrades was awarded in June 2015 and construction was completed in November 2016. This contract, 6650B is the second of the three contracts to be awarded.

E. A. Colangeli Construction Co., Inc's bid is 6.7% below the Engineer's Estimate, and the two lowest bids are within 0.38% of each other and the spread amongst all five low bids is 4%. Staff are satisfied that the relatively close grouping of the bid prices reflect a clear and concise specification, understood by all bidders and is an indication of the reasonableness of the pricing.

Staff reviewed E. A. Colangeli Const. Co., Inc's bid and conducted further discussions with the Contractor. Following those discussions, staff are of the opinion that the Contractor fully understands the scope of work and that the bid contains all elements of the work. References were checked and found to be favorable. E. A. Colangeli Construction Co., Inc. has demonstrated its ability to successfully complete comparable projects.

After reviewing the bid and interviewing the Contractor, staff have concluded that E. A. Colangeli Construction Co., Inc., of Malden, possesses the skill, ability, and integrity necessary to perform the work under this contract and is qualified to do so. Staff have further determined that the bid price is reasonable, complete, and includes payment of prevailing wage rates, as required. Therefore, staff recommend that Contract 6650B be awarded to E. A. Colangeli Construction Co., Inc. as the lowest responsible and eligible bidder.

BUDGET/FISCAL IMPACT:

The FY17 CIP includes \$6,524,553 for Contract 6650, Modifications to Existing Waterworks Facilities (the original three-location contract). Of this amount, there are sufficient funds for Contract, 6650B, Western Operations Marlborough Maintenance Facility, which is the second phase of the three phases of Contract 6650.

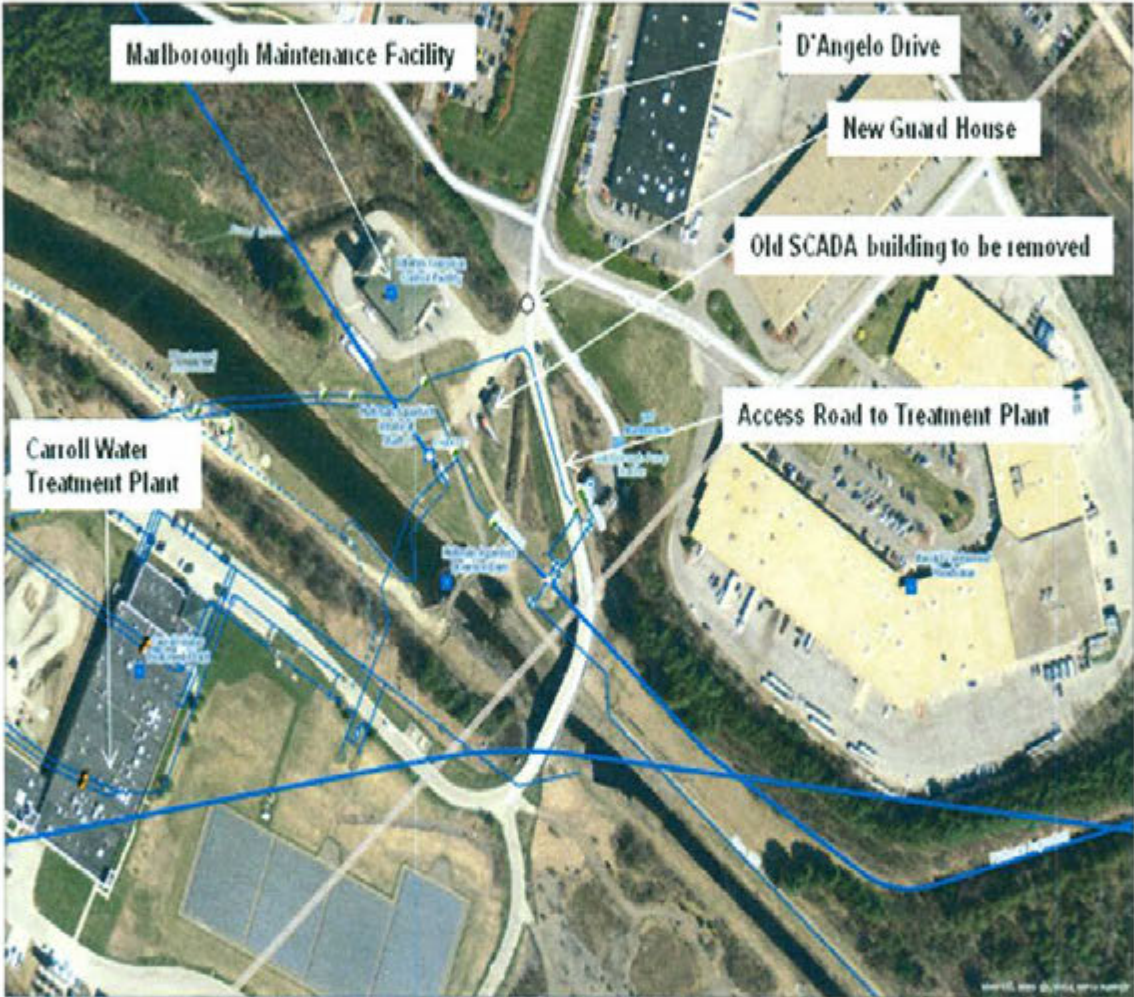
MBE/WBE PARTICIPATION:

The MBE and WBE participation requirements for this contract have been established at 7.24% and 3.6%, respectively.

ATTACHMENT:

Map of Contract 6650B Western Operations Marlborough Maintenance Facility

Figure 1 – Map of Contract 6650B Western Operations Marlborough Maintenance Facility



STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 15, 2017
SUBJECT: Wachusett Aqueduct Pumping Station
BHD/BEC JV 2015, A Joint Venture
Contract 7157, Change Order 9



COMMITTEE: Water Policy and Oversight

INFORMATION
 VOTE

Vincent Spada, Construction Coordinator
Corinne M. Barrett, Director, Construction
Preparer/Title


Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Change Order 9 to Contract 7157, Wachusett Aqueduct Pumping Station, with BHD/BEC JV 2015, A Joint Venture, for a lump sum amount of \$100,079.80, increasing the contract amount from \$46,315,487.04 to \$46,415,566.84, with no increase in contract term.

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

DISCUSSION:

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

Once completed, this new pumping station will allow the Wachusett Aqueduct to provide redundancy for the Cosgrove Tunnel. Completion of the Hultman Aqueduct Rehabilitation and

interconnections project provided redundancy for the MetroWest Water Supply Tunnel. Together, these projects will provide water transmission redundancy from the Wachusett Reservoir to the metropolitan tunnel system.

This Change Order

Change Order 9 consists of the following item:

Furnish and Install Membrane Waterproofing and Protection Board
On the Exterior Foundation Walls of the Butterfly Valve Vault

\$77,785.17

The Contract work includes furnishing and installing membrane waterproofing and protection board on the exterior foundation walls of the dry side of the pump station, however the contract omitted the location of the Butterfly Valve Vault. The design intent was for the Butterfly Valve vault interior to be dry, therefore, the exterior walls require membrane waterproofing. The Designer omitted the waterproofing of the Vault from the contract documents.



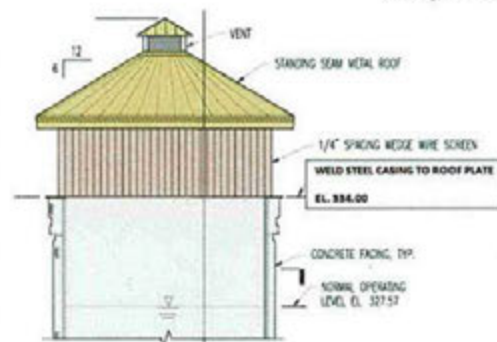
Waterproof membrane/protection board at South wall of the Butterfly Valve Vault

The approved PCO for this item has been identified by MWRA staff as an omission. MWRA staff, the Consultant, and the Contractor have agreed to a lump sum amount of \$77,785.17 for this additional work with no increase in contract term. The Contractor proceeded with this work at its own risk in order to proceed with the remainder of the contract work.

Attach the Surge Tank Structural Steel Column to the Steel
Plate at the Top of the Tank by Field Welding

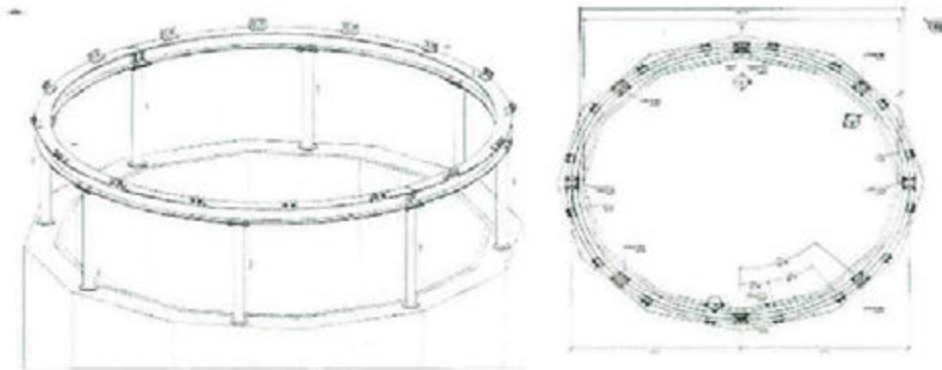
\$12,011.00

The contract drawings show the roof support column base plates “resting” on the top plate of the surge tank without attaching to it. The contract documents do not indicate how the roof support column base plates attach to the steel rim plate on top of the surge tank. The roof support columns must be attached to secure the roof support structure to prevent horizontal and vertical uplift movement of the roof. The Contractor



Surge Tank Welding

was directed to weld the roof support columns to the surge tank top rim plate at eight separate locations. The Designer omitted the detail requiring a continuous field weld. The welding must be done when the roof support structure is placed on top of the surge tank, about 50 feet above the ground elevation.



The approved PCO for this item has been identified by MWRA staff as an omission. MWRA staff, the Consultant, and the Contractor have agreed to a lump sum amount of \$12,011 for this additional work with no increase in contract term. This work has not commenced.

Furnish and Install Pressure Treated Wood Boards to Frame Guardhouse Window Openings

\$10,283.63

The contract documents omitted the wood frames from sixteen guardhouse window openings. However, the wood frames are required to support and secure the guardhouse windows. This change is to furnish and install the 2 by 4 by 16-foot pressure treated wood boards at sixteen window frames.

The approved PCO for this item has been identified by MWRA staff as an omission. MWRA staff, the Consultant, and the Contractor have agreed to a lump sum amount of \$10,283.63 for this additional work with no increase in contract term. The Contractor proceeded with this work at its own risk in order to proceed with the remainder of the contract work.



Guardhouse Progress Photo

CONTRACT SUMMARY:

	<u>Amount</u>	<u>Time</u>	<u>Dated</u>
Original Contract:	\$47,011,000.00	1,260 Days	03/01/16
Change Orders:			
Change Order 1*	(\$1,500,000.00)	(180) Days	07/25/16
Change Order 2*	\$14,766.00	0 Days	10/26/16

Change Order 3*	\$24,822.00	0 Days	11/16/16
Change Order 4*	\$199,629.92	0 Days	12/12/16
Change Order 5	\$328,039.00	0 Days	12/23/16
Change Order 6*	\$23,202.00	0 Days	01/18/17
Change Order 7*	\$24,533.12	0 Days	02/06/17
Change Order 8*	\$189,495.00	0 Days	Pending
Change Order 9*	<u>\$100,079.80</u>	<u>0 Days</u>	Pending
Total of Change Orders:	(\$595,433.16)	(180) Days	
Adjusted Contract:	\$46,415,566.84	1,080 Days	

*Approved under delegated authority

If Change Order 9 is approved, the cumulative total value of all change orders to this contract will be (\$595,433.16) or (1.3%) of the original contract amount. Work on this contract is 32% complete.

BUDGET/FISCAL IMPACT:

The FY17 CIP includes a budget of \$45,511,000 for Contract 7157. Including this change order for a lump sum amount of \$100,079.80, the adjusted sub phase total will be \$46,415,566.84 or \$904,566.84 over budget. This amount will be covered within the five year spending cap.

MBE/WBE PARTICIPATION:

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



MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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

PERSONNEL & COMPENSATION COMMITTEE MEETING

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, March 15, 2017

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

Time: Immediately following Water Comm.

AGENDA

A. Approvals

1. PCR Amendments – March 2017

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the
Personnel and Compensation Committee

February 15, 2017

A meeting of the Personnel and Compensation Committee was held on February 15, 2017 at the Authority headquarters in Charlestown. Member Foti presided. Present from the Board were Messrs. Blackmon, Flanagan, Pappastergion, Peña, Vitale and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Patterson Riley, Michele Gillen, Karen Gay-Valente, and Bonnie Hale. The meeting was called to order at 12:35 p.m.

Approvals

***Approval of the Affirmative Action Plan**

Committee members praised the continued excellent work of the Affirmative Action & Compliance Unit, and there was some question and answer. The Committee recommended approval of the 2017 Plan (ref. agenda item A.1).

The Committee recommended approval of the remaining three agenda items:

***PCR Amendments – February 2017**

(ref. agenda item A.2).

***Appointment of Project Manager, Process Monitoring, Deer Island Treatment Plant**

Appointment of Mr. Nicholas Zechello (ref. agenda item A.3).

***Appointment of Business Systems Analyst III, MIS**

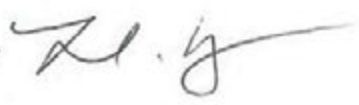
Appointment of Ms. Janice Costa (ref. agenda item A.4).

The meeting adjourned at 12:40 p.m.


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

STAFF SUMMARY

TO: Board of Director
FROM: Frederick A Laskey, Executive Director
DATE: March 15, 2017
SUBJECT: March PCR Amendments



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

 INFORMATION
 X VOTE

Michele S. Gillen
Director, Administration

RECOMMENDATION:

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

DISCUSSION:

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

March PCR Amendments

There are four PCR amendments, two related to changes in the Administration Division two related to changes in the Operations Divisions.

The amendments are:

1. Title and grade change to a vacant position in the Procurement Department, Administration Division, Assistant Contracts Manager, Unit 6, Grade 12, to Deputy Contracts Manager, Unit 6, Grade 13, to align title with current needs in the department.
2. Title, grade and location change to a filled position in the Ops Engineering Department, Operations Division, Technical Assistant, Unit 9, Grade 20 to Project Engineer, Unit 9, Grade 21, due to a union settlement.

3. Title and grade change to a vacant position in the Procurement Department, Administration Division, Document Coordinator, Unit 1, Grade 17, to Document Specialist, Unit 1, Grade 19, to align title with current needs in the department.
4. Grade change to a filled position in the Policy & Admin Department, Operations Division, Facilities Coordinator, Unit 1, Grade 20 to Grade 22, due to a union settlement.

The first two amendments require approval by the Personnel and Compensation Committee. The third and fourth amendments require Board approval after review by the Personnel and Compensation Committee.

BUDGET/FISCAL IMPACT:

The annualized budget impact of these PCR amendments is between a savings of \$16,034 and a cost of \$41,931 depending on the individuals selected for the vacant positions upon the completion of the hiring processes. Staff will ensure that any cost increase associated with these PCR amendments will not result in spending over the approved FY17 Wages and Salary budget.

ATTACHMENTS:

New/Old Job Descriptions

**MASSACHUSETTS WATER RESOURCES AUTHORITY
POSITION CONTROL REGISTER AMENDMENTS
FISCAL YEAR 2017**

PCR AMENDMENTS REQUIRING PERSONNEL & COMPENSATION COMMITTEE APPROVAL - March 15, 2017

Number	PCR #	V/F	Type	Current Title	UN	GR	Amended Title	UN	GR	Salary	New Salary	\$ Impact	For Amendment	
P11	Administration Procurement 8810044	V	T,G	Assistant Contracts Manager	6	12	Deputy Contracts Manager	6	13	\$107,851	\$84,524 - \$125,598	-\$23,327 - \$17,747	To address current staffing needs in the Procurement Department, Administration Department	
P12	Operations Operations Engineering 5811009	F	T,G,L	Technical Assistant	9	20	Project Engineer	9	21	\$80,766	\$84,846 - \$84,846	\$4,080 - \$4,080	Union Settlement	
PERSONNEL & COMP COMMITTEE TOTAL =					2		SUBTOTAL:					-\$19,247 - \$21,827		

PCR AMENDMENTS REQUIRING BOARD APPROVAL - March 2017

Number	Current PCR #	V/F	Type	Current Title	UN	GR	Amended Title	UN	GR	Current/Budget Salary	Estimated New Salary	Estimated Annual \$ Impact	Reason For Amendment	
B25	Administration Procurement 8810043	V	T,G	Document Coordinator	1	17	Document Specialist	1	19	\$63,863	\$53,999 - \$70,889	-\$9,864 - \$7,026	To address current staffing needs in the Procurement Department, Administration Department	
B26	Operations Policy & Admin 5910025	F	G	Facilities Coordinator	1	20	N/A	1	22	\$74,302	\$87,379 - \$87,380	\$13,077 - \$13,078	Union Settlement	
BOARD TOTAL =					2		SUBTOTAL:					\$3,213 - \$20,104		
GRAND TOTAL =					4		TOTAL ESTIMATED COSTS:					-\$16,034 - \$41,931		

MWRA
POSITION DESCRIPTION

OLD

POSITION: Assistant Contract Manager

PCR#:

DIVISION: Administration

DEPARTMENT: Procurement

BASIC PURPOSE:

Manages all aspects of construction, professional services and other non-professional services contracts from the initial request for services through closeout. Assists in establishing and implementing policies and procedures related to the drafting, bidding, negotiating and awarding of contracts. Drafts, negotiates and reviews RFQs, RFPs specifications, amendments and change orders.

SUPERVISION RECEIVED:

Works under the general supervision of the Deputy Contract Manager.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Contributes to the development and implementation of Authority-wide policies and procedures for all elements of the contract function.
- Reviews contract processes and documents for format and substance as well as compliance with Authority standards and applicable laws, especially MGL Chapters 149 and 30.
- Provides guidance to the Law Division, senior authority staff and outside consultants on contract matters as required; represents Authority before Commonwealth Department of Labor and Industries as appropriate.
- Reviews, drafts and helps negotiate contract terms and conditions; prepares and updates

standard forms and other contract provisions.

- Assists the Division in negotiating and preparing contracts, drafts and processes amendments and resolves contract disputes.
- Contributes to the development and implementation of policies and systems for maintenance of contract processes, contract logs, advertising, bidding and contract awards in compliance with Authority standards and applicable law.
- Reviews construction and non-professional services bids, contract amendments, change orders, final payment and closeout.
- Reviews bids and consultant proposals, emphasizing compensation analysis; presents cost control recommendations to Selection Committee.
- Serves as voting member on Selection Committee
- Serves on Consultant Activity Review (CAR) Committee.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A four- (4) year college program in business administration or a related field. Experience in a governmental agency required; and
- (B) Understanding of contract administration as acquired through four (4) to seven (7) years contract management experience; or
- (C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Knowledge of and experience with MGL Chapters 149 and 30 or with design and other professional service contracts preferred.
- (B) Excellent written and oral communication skills are required.

SPECIAL REQUIREMENTS:

A valid Massachusetts Certified Public Purchasing Official (MCPPO) designation preferred.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

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

WORK ENVIRONMENT:

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

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

July 2009

MWRA
POSITION DESCRIPTION

NEW

POSITION: Deputy Contracts Manager

PCR#:

DIVISION: Administration

DEPARTMENT: Procurement

BASIC PURPOSE:

Manages all aspects of construction and professional and non-professional service contracts from initial submission of contract documents through contract closeout.

SUPERVISION RECEIVED:

Works under the general supervision of the Director, Procurement.

SUPERVISION EXERCISED:

Exercises close supervision of assigned Assistant Contracts Manager(s).

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Under the direction of the Director, Procurement, develops and implements Authority-wide policies and procedures for all elements of the contract function, including creation, review and/or evaluation of RFQs, RFPs, proposals, bids and contracts as well as the negotiation of contracts and terms and the review of contract amendments, change orders, contract close-out and final payment.
- Reviews bids, contract processes and documents for format and substance as well as compliance with Authority standards and applicable law, especially MGL Chapters 149 and 30; directs assigned Assistant Contracts Manager(s) in performance of these same functions.
- Oversees and administers advertising programs and systems to open bids and award and execute contracts in compliance with Authority standards and Commonwealth law; works with administrative staff on these issues.
- Assists the Director, Procurement in the defense of contract claims and the dispute resolution process; participates in and directs Assistant Contract Manager(s) in similar activities as appropriate.

- Advises Law Division and Senior Authority staff on contract matters as required; represents Authority before Commonwealth Attorney General's Office; directs Assistant Contracts Manager(s) in performance of these functions.
- Directs Assistant Contracts Manager(s) in the review and evaluation of consultant proposals, emphasizing compensation analysis and cost control.
 - Participates with administrative staff in the establishment and maintenance of a contract database that tracks progress through the advertising, bidding and award stages as well as through the life of the contract.
 - Reviews, drafts and helps negotiate contract terms and conditions; oversees the preparation and updating of standard forms and other contract provisions; supervises Assistant Contracts Manager(s) and directs and assists Authority staff in performance of these functions.
 - Reviews contract amendments and change orders; participates in contract close-out and final payment stages; directs Assistant Contracts Managers in performance of these same functions.
 - Participates in Consultant/Contractor Selection Committees as required.
 - Participates with technical personnel in presentations to the Board.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A four (4) year college program in business administration or a related field; and
- (B) A masters degree in a related field or a degree in law is strongly preferred; or
- (C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Understanding of contract administration as acquired through six (6) to eight (8) years contract management experience, of which at least two (2) years should be in a supervisory capacity.
- (B) Knowledge of and experience with MGL Chapters 149 and 30 and with design and other

professional and nonprofessional service contracts required; governmental contract experience preferred.

(C) Excellent written and oral communication skills are required.

SPECIAL REQUIREMENTS:

A valid Massachusetts Class D Operators License.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

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

WORK ENVIRONMENT:

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

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

April 2016



MWRA
POSITION DESCRIPTION

POSITION: Document Coordinator

PCR#:

DIVISION: Support Services

DEPARTMENT: Procurement

BASIC PURPOSE:

Performs daily operation of Document Distribution Office, including distributing all construction, professional services and purchasing bidding materials and receiving of all bids. Receives, controls and returns all document deposits.

SUPERVISION RECEIVED:

Works under the general supervision of the Contract Coordinator Manager.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Distributes all RFPs/RFQ to public. Maintains database of potential vendors and ensures distribution of addenda to all impacted parties.
- Receives, check and maintains log of companies receiving plans and specifications.
- Maintain bidders lists and returns bid security documents to bidders.
- Receives and date-stamps courier-delivered packages, i.e. bids, proposals, etc.
- Oversees general condition of the contract area.
- Develops and maintains a filing system for bid documents ensuring that all appropriate documentation is included.

- Types, files and provides other clerical support to the Contract Office staff as needed.
- Greets visitors, determines their needs and refers callers to the appropriate individuals.
- Answers phones and refers calls to appropriate personnel.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) Knowledge of business procedures as normally attained through a two (2) year program in business administration or related field; and
- (B) Understanding of contracts and contracting procedures as acquired through two (2) to four years contract administration experience; or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Demonstrated skills in Microsoft Word, Excel, Access, and Outlook are required.
- (B) Demonstrated written and oral communication skills required.
- (C) Skill in the operation of the listed tools and equipment.

SPECIAL REQUIREMENTS:

Must have successfully completed the MIS and professional development-related ACP requirements for this position. . If no qualified ACP certified applicant applies for the position, the selected candidate will have 6 months to complete the ACP program.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

The employee must regularly lift and/or move up to 30 pounds. Specific vision abilities required by this job include close vision, and the ability to adjust focus.

WORK ENVIRONMENT:

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

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

July 2002

MWRA
POSITION DESCRIPTION

NEW

POSITION: Document Specialist

PCR#:

DIVISION: Administration

DEPARTMENT: Procurement

BASIC PURPOSE:

Responds to MWRA Supplier Administration and MWRA Document Distribution hotline calls and emails. Provides administrative support and assistance to the Director and performs daily operation of Document Distribution Office, including distributing all construction, non-professional, professional services, and purchasing bidding materials and receipt of all bids/proposals. Receives controls and returns all document deposits.

SUPERVISION RECEIVED:

Works under the general supervision of the Director of Procurement.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Answers MWRA Supplier Portal Hotline calls regarding Lawson Sourcing Events, Purchase Orders and Contracts and refers to appropriate staff.
- Responds to MWRA Supplier Administration and MWRA Document Distribution emails regarding MWRA Supplier Portal, Sourcing, Purchasing and Contract Administration questions. Directs vendor to appropriate response as it applies to Portal use and Events. Routes to appropriate Buyer and/or ACM/DCM for response, as needed.
- Maintains bid master database for Construction, Non-Professional, and Professional Services bids. Distributes and posts weekly bid calendars.

- Distributes all Professional Services RFQ/RFP's to public. Maintains database of potential vendors and ensures distribution of addenda to all impacted parties.
- Distributes M.G.L Chapter 149 Construction diskettes. Maintains database of planholder's lists per project and ensures distribution of addenda.
- Maintains contact and bidder lists and returns bid security documents to bidders.
- Acts as liaison between Procurement and Accounts Payable for new vendor creation and address changes.
- Receives and date-stamps courier-delivered packages, i.e. bids, proposals, etc.
- Maintains a filing system for bid documents ensuring that all appropriate documentation is included.
- Types, files and provides other administrative support to the contract staff as needed.
- Greets visitors, determines their needs and refers callers to the appropriate individuals.
- Creates Purchasing and Administrative Services requisitions as necessary.
- Creates and inputs National Institute of Government Purchasing (NIGP) numbers for use in Lawson Sourcing, Purchasing and Contract modules and Maximo databases.
- Develops and maintains department database management, spreadsheets and departmental files as necessary.
- Provides backup to Administrator, Administration & Finance for database maintenance, contract preparation and distribution, posting to COMM-buys, advertising, etc.
- Provides back up to CNY front desk and mailroom, as needed.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Knowledge of business procedures as normally attained through a two (2) year program

Page 2 of 4

Document Specialist - New

in business administration or related field; and

- (B) Understanding of contracts and contracting procedures as acquired through two (2) to four (4) years contract administration experience; or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Demonstrated skills in Microsoft Word, Excel, Access, and Outlook are required.
- (B) Demonstrated written and oral communication skills required.
- (C) Skill in the operation of the listed tools and equipment.

SPECIAL REQUIREMENTS:

Must have successfully completed the MIS and professional development-related ACP requirements for this position. . If no qualified ACP certified applicant applies for the position, the selected candidate will have 6 months to complete the ACP program.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

The employee must regularly lift and/or move up to 30 pounds. Specific vision abilities required by this job include close vision, and the ability to adjust focus.

WORK ENVIRONMENT:

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

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

January 2017

MWRA
POSITION DESCRIPTION

OLD

POSITION: Technical Assistant

PCR#:

DIVISION: Operations

DEPARTMENT: Ops Engineering

BASIC PURPOSE:

Provides technical and administrative assistance to Department Director in the conduct and implementation of water supply and distribution projects.

SUPERVISION RECEIVED:

Works under the general supervision of the Manager, Ops Engineering.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Assists the Department Director in day-to-day activities.
- Provides departmental overview of the computer programs used internally with emphasis on activities of the Water Operations Control Center (WOCC).
- Coordinates with maintenance supervisors to ensure timely processing of useful data and preparation of reports, including computer summaries of on-going section maintenance.
- Attends meetings with the Department Director, drafts minutes of meetings and follows up to see that actions are taken as agreed.
- Assists in the preparation of reports, technical presentations, answers to inquiries, and letters for the Department Director.

- Assists in the preparation of and monitors the current and capital budgets for the Department.
- Undertakes special investigations or studies of an administrative or technical nature as directed by the Department Director.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A four (4) year college program in engineering, science, or related field; and
- (B) Knowledge of the principles and practices of administration and management of projects acquired by one (1) to three (3) years experience; or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Demonstrated understanding of computer software application, including MSWord, Excel and Access.
- (B) Demonstrated written, organizational and interpersonal skills.
- (C) Skill in the operation of the listed tools and equipment.

SPECIAL REQUIREMENTS:

A valid Massachusetts Class D Motor Vehicle Operators License.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

The employee must frequently lift and/or move up to 10 pounds, occasionally lift/or move up to 25 pounds. Specific vision abilities required by this job include close vision, distance vision, depth perception and the ability to adjust focus.

WORK ENVIRONMENT:

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

While performing the duties of this job, the employee regularly work in an office environment. The employee occasionally exposed to outdoor weather conditions. The employee is occasionally exposed to fumes and airborne particles.

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

August, 1999

NEW

**MWRA
POSITION DESCRIPTION**

POSITION: Project Engineer

PCR#:

DIVISION: Operations

DEPARTMENT: Ops Engineering

BASIC PURPOSE:

Assists, under supervision of senior staff, in the development and management of water and sewer projects from planning through construction award, performs engineering analyses and prepares engineering documents and project reports.

SUPERVISION RECEIVED:

Works under the general supervision of the Senior Staff in the Ops Engineering Department.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Participates in the management of all phases of consultant selection and supervision of professional engineering contracts, including the development of scope of services, plans and specifications, cost estimates, work schedules, technical review of consultant work, negotiations, and preparation of contract award recommendations.
- Assists in the oversight of consultant contracts, including monitoring project progress, review and approval process for invoices, contracts, and amendments and providing such information for department monthly reports and CIP and CEB reports.
- Performs engineering in the development of work plans, feasibility studies, conceptual design reports, construction contract documents, and other engineering documents for water and wastewater systems and facilities.

- Assists in the review of consultant submittals for quality work, conformance with engineering practices and Authority policies, conformance with applicable regulatory and bidding law requirements and conformance with Quality Assurance/Quality Control (QA/QC) procedures.
- Assists in project coordination with other MWRA departments, communities, public interest groups and government agencies. May attend public meetings with regulatory agencies.
- Assists with the preparation of project-related permits and approvals and participates in the process to obtain their approval.

SECONDARY DUTIES:

- Performs special tasks, project and other related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A four (4) year college degree in civil, sanitary or environmental engineering is required. An additional four (4) years experience in water or wastewater facilities planning, design or construction may be considered as a substitute for the four (4) year degree if the candidate otherwise meets all position requirements; and
- (B) A minimum of four (4) years experience in water and/or wastewater facilities planning, design or construction is required; or
- (C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Familiarity with federal, state and regional environmental regulations related to the planning, design and construction of wastewater or related systems and facilities preferred.
- (B) Familiarity with computer software packages such as MSWord and Excel.
- (C) Demonstrated abilities to work as part of a project team and to develop and maintain productive working relationships with external parties.
- (D) Excellent interpersonal, written and oral communication skills.

SPECIAL REQUIREMENTS:

Registration as an Engineer-in-Training is preferred.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

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

WORK ENVIRONMENT:

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

While performing the duties of this job, the employee regularly works in an office environment. The employee occasionally works near moving mechanical parts and is occasionally exposed to outdoor weather conditions. The employee is occasionally exposed to fumes or airborne particles and toxic or caustic chemicals.

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

November, 2000



MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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Fax: (617) 788-4899
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Chair: M. Beaton
Vice-Chair: J. Carroll
Secretary: A. Pappastergion
Board Members:
A. Blackmon
K. Cotter
P. Flanagan
J. Foti
B. Peña
H. Vitale
J. Walsh
J. Wolowicz

BOARD OF DIRECTORS' MEETING

to be held on

Wednesday, March 15, 2017

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

Time: 1:00 p.m.

AGENDA

- I. **APPROVAL OF MINUTES**
- II. **REPORT OF THE CHAIR**
- III. **REPORT OF THE EXECUTIVE DIRECTOR**
- IV. **BOARD ACTIONS**
 - A. **Approvals**
 1. Amendments to Investment Policy (ref. AF&A B.1)
 2. Approval of the Seventy-fifth Supplemental Resolution (ref. AF&A B.2)
 3. Approval of Advisory Board Recommended Modifications to the Program Guidelines and Annual Update for the Infiltration/Inflow Local Financial Assistance Program (ref. WW A.1)
 4. Delegation of Authority to Execute a Contract for Temporary Back-up Generators for the Deer Island Treatment Plant (ref. WW A.2) (materials to follow)
 5. PCR Amendments – March 2017 (ref. P&C A.1)

B. Contract Awards

1. Combustion Turbine Generator Maintenance – Deer Island Treatment Plant: O'Connor Corporation, Contract S549 (ref. WW B.1)
2. Reading Extension Sewer and Metropolitan Sewer Rehabilitation (Sections 73/74/75/46): Green Mountain Pipeline Services, Contract 7164 (ref. WW B.2) (materials to follow)
3. Dorchester Interceptor Sewer (Sections 240/241/242) Rehabilitation Design, Construction Administration and Resident Engineering/ Inspection Services: CDM Smith Inc., Contract 7512 (ref. WW B.3)
4. Western Operations Maintenance Facility – Marlborough: E. A. Colangeli Construction Company, Inc., Contract 6650B (ref. W B.1) (materials to follow)

C. Contract Amendments/Change Orders

1. Wachusett Aqueduct Pumping Station: BHD/BEC JV 2015, A Joint Venture: Contract 7157, Change Order 9 (ref. W C.1)

V. CORRESPONDENCE TO THE BOARD

VI. OTHER BUSINESS

VII. EXECUTIVE SESSION

A. Litigation

1. Retention of Outside Counsel

VIII. ADJOURNMENT

MASSACHUSETTS WATER RESOURCES AUTHORITY

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

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

APPROVAL OF MINUTES

Upon a motion duly made and seconded, it was

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

REPORT OF THE EXECUTIVE DIRECTOR**Presentation of 2016 Extraordinary Service Awards**

Mr. Laskey reported that the MWRA Employee Recognition Program had been reinstated, and thanked the members of the Employee Recognition Committee that reviewed nominations for the Extraordinary Service Awards. The following recipients that went above and beyond their routine responsibilities in service to the MWRA were chosen as winners: (1) The School Lead Testing Program team (represented by Shonesia Davis, Chemist I, Cara Seaman, Mike Delaney, and Stephen Estes-Smargiassi for the entire

team) for quickly developing and implementing a program that processed over 25,000 tests on samples from 290 schools in 35 communities; and (2) Robert Ellis, John Flaherty, and Bill Harris for their quick thinking and heroic actions to help their colleagues escape without serious injury from the Nut Island Headworks Facility after an explosion triggered a serious fire and heavy smoke in the lower level of the facility. (Additional details and a list of contributing employees are on file with the records of the meeting.)

APPROVALS

Transmittal of the FY18 Proposed Current Expense Budget to the MWRA Advisory Board

Upon a motion duly made and seconded, it was

Voted to approve transmittal of the FY18 Proposed Current Expense Budget to the MWRA Advisory Board for its 60 day review and comment period.

Appointment of Proxy for Fore River Railroad Corporation

Upon a motion duly made and seconded, it was

Voted that the MWRA Board of Directors, as holder of all voting rights of all the issued and outstanding shares of stock of the Fore River Railroad Corporation, appoint Kathy Soni, with the power of substitution, to vote as proxy at the next annual meeting and any special meeting of the stockholders for the Fore River Railroad Corporation in accordance with the form of proxy presented and filed with the records of this meeting. In addition, the MWRA Board of Directors directs the proxy to elect the following board members: Thomas J. Durkin, Godfrey O. Ezeigwe, Michele S. Gillen, Lisa R. Grollman, Michael J. Hornbrook, Frederick A. Laskey, Brian Peña, Steven A. Remsberg, John P. Vetere, and John J. Walsh.

Redundancy for the Metropolitan Tunnel System

Upon a motion duly made and seconded, it was

Voted to approve the MWRA staff-preferred alternative of construction of northern and southern deep rock tunnels from the Hultman Aqueduct and MetroWest Water Supply Tunnel to the Weston Aqueduct Supply Main 3 and to the Southern Spine water mains for the purpose of providing redundancy for the Metropolitan Tunnel System (City Tunnel, City Tunnel Extension and Dorchester Tunnel) and to direct staff to proceed with preliminary design, geotechnical investigations and Massachusetts Environmental Policy Act (MEPA) review of the project.

Approval of the Affirmative Action Plan

Upon a motion duly made and seconded, it was

Voted to approve the Massachusetts Water Resources Authority's Affirmative Action Plan effective for a one-year period from January 1, 2017 through December 31, 2017.

PCR Amendments – February 2017

Upon a motion duly made and seconded, it was

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

Appointment of Project Manager, Process Monitoring, Deer Island Treatment Plant

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. Nicholas Zechello to the position of Project Manager, Process Monitoring (Unit 9, Grade 25), at an annual salary of \$89,433.09, to be effective on the date designated by the Executive Director.

Appointment of Business Systems Analyst III, MIS

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Ms. Janice Costa to the position of Business Systems Analyst III (Unit 6, Grade 12), MIS Department, at an annual salary of \$107,851.37, to be effective on the date designated by the Executive Director.

CONTRACT AWARDS

Long-Term Energy Supply Alternatives Analysis, Deer Island Treatment Plant: Burns & McDonnell, Contract 6963

Consideration of this item was postponed.

Oxygen Generation Services, Deer Island Treatment Plant: Solutionwerks, Inc., Contract S562

Upon a motion duly made and seconded, it was

Voted to approve the award of Contract S562, Oxygen Generation Facility Services, Deer Island Treatment Plant, to the lowest eligible and responsible bidder, Solutionwerks, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$1,929,750, for a term of 1,095 calendar days from the Notice to Proceed.

Nut Island Headworks Odor Control and HVAC Improvements Inspections, Evaluations, Design, Construction Administration and Resident Engineering Services: Hazen & Sawyer, PC, Contract 7517

There was general discussion of questions raised at the Wastewater Policy and Oversight Committee regarding the wide difference between the Engineer's Estimate and the proposals received. A staff memo providing additional details was passed out and is on file with the records of the meeting.

Upon a motion duly made and seconded, it was

Voted to approve the recommendation of the Consultant Selection

Committee to select Hazen and Sawyer, P.C. to provide consulting services to the Authority for Nut Island Headworks Odor Control and HVAC Improvements and to authorize the Executive Director, on behalf of the Authority, to execute Contract 7517 in an amount not to exceed \$5,736,900.77, for a term of 57 months from the Notice to Proceed.

Shaft 12 Isolation Gate Design, Engineering Services During Construction and Resident Engineering Services: Arcadis, U.S., Inc., Contract 7509

Upon a motion duly made and seconded, it was

Voted to approve the recommendation of the Consultant Selection

Committee to select Arcadis U.S., Inc. to provide Design, Engineering Services During Construction and Resident Engineering Services for the Shaft 12 Isolation Gate and to authorize the Executive Director, on behalf of the Authority, to execute Contract 7509 in an amount not to exceed \$1,706,312, for a term of 40 months from the Notice To Proceed.

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		
Flanagan		
Foti		
Pappastergion		
Peña		
Vitale		
Walsh		
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, further, 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 solely for the consideration of adjournment.

EXECUTIVE SESSION

The meeting returned to open session at 2:05 p.m. and adjourned.

DRAFT