



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

to be held on

Wednesday, October 17, 2018

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

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

Time: 10:00 a.m.

AGENDA

A. Information

1. Delegated Authority Report – September 2018
2. FY2016-FY2020 Strategic Business Plan: Annual Update for FY2018
3. FY19 Financial Update and Summary as of September 2018

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the

Administration, Finance and Audit Committee

September 19, 2018

A meeting of the Administration, Finance and Audit Committee was held on September 19, 2018 at the Authority headquarters in Charlestown. Committee Chair Vitale presided. Present from the Board were Ms. Wolowicz and Messrs. Carroll, Cotter, Foti, Pappastergion, Peña and Walsh. Mr. Flanagan was absent. Among those present from the Authority staff were Frederick Laskey, Steven Remsberg, David Coppes, Carolyn Fiore, Thomas Durkin, Michele Gillen, Bethany Card, Stephen Cullen, Emily Dallman, David Duest, Stephen Estes-Smargiassi, Carolyn Francisco Murphy, Matthew Horan, Andrea Murphy, Patterson Riley, Kathy Soni, and Kristin MacDougall. The meeting was called to order at 10:29 a.m.

Information

Review and Update of MWRA's Policies and Procedures

Staff presented a list of MWRA Policies and Procedures and current review status. There was general discussion and questions and answers. (Mr. Cotter temporarily left the meeting during discussion.) Committee Chair Wolowicz recommended the formation of a subcommittee to review MWRA Salary Continuation Policy that includes Mr. Vitale, Mr. Foti, Mr. Laskey and staff. Mr. Vitale requested an update on the Pay Equity Law.

FY2018 Fourth Quarter Orange Notebook

Staff made a presentation about the Fourth Quarter FY2018 Orange Notebook. There was general discussion and questions and answers.

Delegated Authority Report for July and August 2018

* Committee recommendation approved by the Board on September 19, 2018

Staff presented the Delegated Authority Report for July and August 2018. There was general discussion and brief questions and answers. (Messrs. Carroll and Pappastergion temporarily left the meeting during discussion.)

Fiscal Year 2018 Capital Improvement Program Spending Report

Staff presented a report recapping the FY 2018 Capital Improvement Program, with highlights of MWRA's major capital program accomplishments during FY 2018 and explaining spending variances. There was brief discussion and questions and answers. (Messrs. Carroll and Pappastergion returned to the meeting during discussion.)

Fiscal Year 2018 Year-End Financial Results

Staff presented the financial results and variance highlights for Fiscal Year 2018, based on the audited fiscal year-end financial close. There was brief discussion and questions and answers. (Mr. Peña left the meeting and returned during discussion.)

Approvals

* Bond Defeasance of Future Debt Service

Staff recommended the execution of an approximately \$14.0 million defeasance to reduce future year rate increases. There was brief discussion and questions and answers.

The Committee recommended approval (ref. AF&A B.1.)

Contract Amendments/Change Orders

* Dental Insurance: Delta Dental of Massachusetts, Contract A613, Amendment 1

Staff recommended approval of Amendment 1 to Contract A613 with Delta Dental Massachusetts as presented and filed with the records of the meeting.

The Committee recommended approval (ref. AF&A C.1.)

The meeting adjourned at 11:31 a.m.

* Committee recommendation approved by the Board on September 19, 2018

STAFF SUMMARY


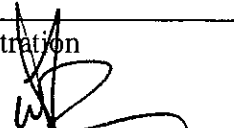
TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: October 17, 2018
SUBJECT: Delegated Authority Report – September 2018



COMMITTEE: Administration, Finance & Audit

INFORMATION
 VOTE

Linda D'Addario, Admin. Systems Coordinator
Barbara Aylward, Administrator A & F
Preparer/Title


Michele S. Gillen
Director, Administration

Douglas J. Rice
Director of Procurement

RECOMMENDATION:

For information only. Attached is a listing of actions taken by the Executive Director under delegated authority for the period September 1 – 30, 2018.

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 February 21, 2018, 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.

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.

Amendments:

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

Amendments to the Position Control Register:

Amendments which result only in a change in cost center.

BUDGET/FISCAL IMPACT:

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

CONSTRUCTION/PROFESSIONAL SERVICES DELEGATED AUTHORITY ITEMS SEPTEMBER 1 - 31, 2018

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMEND/CO	COMPANY	FINANCIAL IMPACT
C-1.	09/06/18	NORTHERN INTERMEDIATE HIGH SECTION 110 AND 112 - STONEHAM AND WAKEFIELD INSTALL FIVE HANDICAP RAMPS WITH SLOPED CONCRETE PANELS TO SATISFY ADA REQUIREMENTS.	7478	12	ALBANESE D&S, INC.	\$55,000.00
C-2.	09/12/18	CHELSEA CREEK HEADWORKS UPGRADE FURNISH AND INSTALL CONDUIT AND WIRE FOR THE LOCAL CONTROL STATIONS ON THE GRIT AND SCREENINGS COLLECTION EQUIPMENT AND THE MEZZANINE LEVEL; FURNISH AND INSTALL BRONZE GATE VALVES AND STAINLESS STEEL BALL VALVES ON THE COMPRESSED AIR SYSTEM IN LIEU OF THE SPECIFIED; FURNISH AND INSTALL AN INTERIM CONTROL PANEL, INTERCONNECTING CONDUIT AND WIRE, RELOCATE THE NEW COMMUNICATION PANEL AND FURNISH AND INSTALL A 1.5-TON SPLIT AIR CONDITIONING SYSTEM; FURNISH AND INSTALL FOUR SUBMERSIBLE PUMP SEAL FAILURE MODULE PANELS, INTERCONNECTING CONDUITS AND WIRE.	7161	17	BHD/BEC 2015, A JOINT VENTURE	\$109,065.00
C-3.	09/27/18	SECTION 14 WATER PIPELINE RELOCATION - MALDEN FINAL BALANCING CHANGE ORDER TO DECREASE THE FOLLOWING BID ITEMS TO REFLECT ACTUAL QUANTITIES USED: POLICE DETAIL SERVICES, AND PRICE ADJUSTMENTS.	6957	9	ALBANESE BROTHERS, INC.	(\$98,305.24)
C-4.	09/27/18	MISCELLANEOUS FENCING INSTALLATIONS AND REPAIRS AWARD OF A CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR MISCELLANEOUS FENCING INSTALLATIONS AND REPAIRS FOR A TERM OF 730 CALENDAR DAYS.	6760Y	AWARD	R.A.D. CORP.	\$525,380.00

PURCHASING DELEGATED AUTHORITY ITEMS SEPTEMBER 1 - 30, 2018

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-1.	09/06/18	PURCHASE OF SIX EMERSON AMS TREX FIELD COMMUNICATORS AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR SIX EMERSON AMS TREX FIELD COMMUNICATORS TO MEASURE WATER FLOW AND PRESSURE THROUGHOUT MWRA'S WATER AND WASTEWATER SYSTEMS FOR THE SCADA UNIT.	WRA-4550Q		POND TECHNICAL SALES	\$31,352.04
P-2	09/06/18	MAINTENANCE AND SUPPORT FOR LABORATORY INFORMATION MANAGEMENT SYSTEM AWARD OF A SOLE-SOURCE PURCHASE ORDER FOR LABORATORY INFORMATION MANAGEMENT SYSTEM MAINTENANCE AND SUPPORT.			LABWARE, INC.	\$64,830.50
P-3	09/06/18	MAINTENANCE AND SUPPORT FOR PRETREATMENT INFORMATION MANAGEMENT SYSTEM AWARD OF A SOLE-SOURCE PURCHASE ORDER FOR MAINTENANCE AND SUPPORT OF PRETREATMENT INFORMATION MANAGEMENT SYSTEM FOR THE PERIOD OF NOVEMBER 2, 2018 THROUGH OCTOBER 31, 2019.			INFLECTION POINT SOLUTIONS, LLC	\$115,000.00
P-4	09/06/18	SUPPLY AND DELIVERY OF AQUA AMMONIA AWARD OF A ONE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY AND DELIVERY OF AQUA AMMONIA TO THE JOHN J. CARROLL WATER TREATMENT PLANT.	WRA-4555		UNIVAR USA, INC.	\$179,256.00
P-5	09/06/18	BIODIESEL FUEL AWARD OF AN ELEVEN-MONTH CONTRACT FOR BIODIESEL FUEL FOR THE CHELSEA FACILITY UNDER STATE CONTRACT ENE40CAT2. MWRA WILL ONLY PAY FOR PRODUCT DELIVERED AND RECEIVED.			DIESEL DIRECT, INC.	\$200,000.00
P-6	09/06/18	SUPPLY AND DELIVERY OF HYDROFLUOROSILICIC ACID AWARD OF A ONE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY AND DELIVERY OF HYDROFLUOROSILICIC ACID TO THE JOHN J. CARROLL WATER TREATMENT PLANT.	WRA-4556		PENCCO, INC.	\$302,521.10
P-7	09/10/18	PURCHASE OF FOUR BUTTERFLY VALVES WITH MODULATING ACTUATORS AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR FOUR BUTTERFLY VALVES WITH MODULATING ACTUATORS FOR THE DEER ISLAND TREATMENT PLANT.	WRA-4547Q		PIPING SPECIALISTS, INC.	\$25,835.04
P-8	09/10/18	AIR EMISSIONS COMPLIANCE TESTING AWARD OF A THREE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR AIR EMISSIONS COMPLIANCE TESTING AT THE DEER ISLAND TREATMENT PLANT AND THE SLUDGE PROCESSING FACILITY TO SATISFY THE DEP AIR EMISSIONS PERMIT.	WRA-4553		GAMMIE AIR MONITORING, LLC.	\$83,950.00
P-9	09/14/18	PURCHASE OF ONE ROTORK PAKSCAN MASTER STATION AWARD OF A SOLE-SOURCE PURCHASE ORDER FOR ONE ROTORK PAKSCAN MASTER STATION FOR THE BRAINTREE-WEYMOUTH INTERMEDIATE PUMP STATION TO CONTROL AND MONITOR THE 52 ROTORK ACTUATORS.			ATLANTIC FLUID TECHNOLOGY, INC.	\$27,422.60
P-10	09/14/18	WALK BEHIND SAW AND WATER PUMP AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR ONE WALK BEHIND SAW AND WATER PUMP.	WRA-4545Q		IBUY STORES, INC.	\$30,147.00
P-11	09/14/18	PURCHASE OF ONE VENTRAC 3400 ARTICULATING TRACTOR AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR ONE VENTRAC 3400 ARTICULATING TRACTOR.	WRA-4526Q		MTE TURF EQUIPMENT SOLUTIONS, INC.	\$38,679.00
P-12	09/14/18	PURCHASE OF ONE 36-INCH VERTICAL DOUBLE DISC VALVE AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR ONE 36-INCH VERTICAL DOUBLE DISC VALVE FOR SPARE PARTS.	WRA-4558		BILLERICA WINWATER WORKS CO.	\$58,124.00
P-13	09/26/18	ANALYSIS OF ORGANICS IN BIOSOLIDS SAMPLES AWARD OF A TWO-YEAR PURCHASE ORDER CONTRACT TO THE LOWEST RESPONSIVE BIDDER FOR THE ANALYSIS OF ORGANICS IN BIOSOLIDS SAMPLES FOR THE DEPARTMENT OF LABORATORY SERVICES.	WRA-4570Q		KATAHDIN ANALYTICAL SERVICES, INC.	\$27,000.00
P-14	09/26/18	MAINTENANCE AND SUPPORT OF PORTIA INVESTMENT AND CASH MANAGEMENT SOFTWARE AWARD OF A SOLE-SOURCE PURCHASE ORDER FOR THE ANNUAL MAINTENANCE AND SUPPORT OF THE PORTIA INVESTMENT AND CASH MANAGEMENT SOFTWARE.			SS&C TECHNOLOGIES, INC.	\$53,879.08
P-15	09/26/18	PURCHASE OF FLOOD PROTECTION AWARD OF A SOLE-SOURCE PURCHASE ORDER FOR FLOOD PROTECTION STOP PLANK BARRIERS FOR THE BRAINTREE-WEYMOUTH, HOUGH'S NECK, QUINCY, AND SQUANTUM PUMP STATIONS.			P.S. DOORS	\$67,500.00

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: October 17, 2018
SUBJECT: FY16-FY20 Strategic Business Plan: Annual Update for FY18



COMMITTEE: Administration, Finance, and Audit

INFORMATION
 VOTE

Carolyn M. Fiore, Deputy Chief Operating Officer
Denise Breitenicher, Program Manager, Energy and
Environmental Management
Preparer/Title



David W. Coppes, P.E
Chief Operating Officer

The current five-year business plan, covering FY16 through FY20, was presented to the Board in March 2015. The plan describes MWRA's mission, identifies values, and outlines five key strategic priorities and eighteen goals, as well as specific initiatives associated with these goals, which provides a framework for MWRA's business initiatives over the next five years. The Plan complements, rather than supplants, other MWRA planning tools including the Water and Wastewater Master Plans, the Capital Improvement Program, and the annual Current Expense Budget, among others. This staff summary provides a review of FY18 accomplishments toward meeting the priorities and goals of the Business Plan.

RECOMMENDATION:

For information only.

DISCUSSION:

The FY16-FY20 MWRA Business Plan is a strategic blueprint that articulates the mission statement, values, and goals of the agency, as well as specific initiatives associated with these goals to be achieved or evaluated over the five-year period. The Plan was developed as a tool to guide staff in prioritizing projects and programs within the broader framework of MWRA goals and mandates, and to evaluate system-wide performance.

Five strategic themes integral to MWRA's mission form the basis of the Plan:

- I. Drinking Water Quality and System Performance
- II. Wastewater Management and System Performance
- III. Infrastructure Management and Resilience
- IV. Financial and Management
- V. Environmental Sustainability

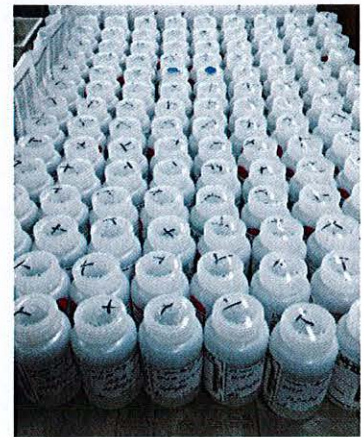
MWRA identified a series of goals to help it achieve its stated priorities, as well as core and special initiatives that describe the specific projects and direction MWRA intends to undertake over the five years. Core Initiatives address the activities that MWRA must do to meet its performance goals, regulatory requirements, and financial commitments. Special Initiatives address activities, projects, and emerging issues that staff will be assessing or undertaking in order to improve MWRA's performance of its core responsibilities. Existing reporting mechanisms, such as the Orange and Yellow Notebooks, continue to be used to track monthly and quarterly performance.

The annual update allows and encourages staff to assess MWRA's progress broadly toward achievement of its goals, as well as assess progress made on individual projects within Core Initiatives, and on Special Initiatives. It also provides an opportunity for managers to review projects at a high level and decide whether the priority status of the project has changed (*i.e.* more or less important) since the development of the current Business Plan, and whether the level of resources devoted to the project should remain the same or be increased or reduced.

The attached document presents all the goals by priority areas with the associated initiatives. There is a graphic that shows progress made in FY18, and an associated list of highlights for each initiative. Some of the highlights for FY18, listed by strategic theme are:

Drinking Water Quality and System Performance

- Met all regulatory requirements for safe drinking water and received the 2018 Public Water System Award for Consistent Performance and Achievement from the Massachusetts Department of Environmental Protection, after three years of receiving awards for Outstanding Performance.
- Expanded both Reservoir and Contaminant Warning systems at selected MWRA facilities and critical monitoring locations.
- Continued the School Sampling Program that provides assistance to MWRA member communities with analysis of drinking water from schools for lead that began in FY16. Over the first three years of this program, the Deer Island Lab analyzed 35,000 samples from 37 member communities. In FY18, MWRA began a pilot program to provide lead testing in childcare facilities.



Wastewater Management and System Performance

- Received the Platinum award for Deer Island Treatment Plant from NACWA for 11 consecutive years without a NPDES violation.
- Received the NACWA Silver Award for the Clinton Wastewater Treatment Plant for less than five permit violations in a calendar year (only one violation in 2018).

- Completed construction on the Clinton phosphorus removal facility in March 2018. Operations staff are optimizing the facility in preparation for NPDES permit required compliance in April 2019.
- Issued a Notice to Proceed with the contract for the 3-year Combined Sewer Overflow (CSO) Post-Construction Monitoring and Performance Assessment in November 2017.



Infrastructure Management, Resilience, and Redundancy

- Hired a new Director of Tunnel Redundancy to lead the construction of two new water supply tunnels to provide redundancy for the Metropolitan Tunnel system (City Tunnel, City Tunnel Extension and Dorchester Tunnel).
- Continued construction on the Wachusett Aqueduct Pump Station, which began in FY16. The project is 92% complete, with substantial completion expected by December 2018.
- Installed a new network security monitoring system along with other security recommendations from Idaho National Labs/Department of Homeland Security.
- Completed major facility rehabilitation and equipment upgrade at Chelsea Creek Screen House.
- Continued construction on various sections of the Northern Intermediate High including sections of Stoneham Section 110, and Southern Extra High including the sections of the Dedham North and South Section 111, to improve redundancy.
- Began work on the next phase of the Information Security Plan (ISP) that will apply cyber security standards and controls tailored to each Information Technology System.



Financial and Management

- Maintained MWRA's strong credit ratings Aa1, AA+, AA+ from Moody's, Standard & Poor's and Fitch respectively. These high credit ratings enable MWRA to borrow at advantageous interest rates, minimizing future debt service expense. In May 2018, MWRA issued \$21.9M in refunding bonds for a net present value savings of \$3.8M.
- Deployed over 1,200 updates to existing hardware and software throughout the year to ensure currency and mitigate vulnerabilities.
- Launched Local Jobs Network, a web-based recruiting site where all levels of jobs are posted.
- Launched Portia, an investment tracking software.

Environmental Sustainability

- Continued to reduce MWRA's Green House Gas emissions through the implementation of energy efficiency projects, purchasing of hybrid vehicles and in FY18 two electric vehicles, and incorporating energy efficiency into facility rehabilitation projects.
- Continued to incorporate energy efficiency components into facility rehabilitation projects or as stand-alone projects including LED lighting, occupancy sensors, an energy management system, and VFDs on odor control fans, HVAC, and hot water pumps.
- Incorporated several energy efficiency components into the newly constructed Wachusett Aqueduct Pump Station, including geothermal heating and high efficiency building design features, as well as installation of photovoltaic solar panels on-site.

BUDGET/FISCAL IMPACT:

Any budgetary impacts of the initiatives in the Business Plan are accounted for in the CEB and CIP.

ATTACHMENT:

Attachment 1: Review of MWRA Five Year Strategic Business Plan, FY16-FY20 with FY18 updates


KEY:

Not started 



Initiated 


In progress 






Achieved 




On-going Core Activities 


I. Drinking Water Quality and System Performance


Goal #1: Maintain drinking water quality to protect public health, and continue to ensure that MWRA water meets all applicable regulations.		
Objective	2018	Highlights/ Progress Updates
A. Optimize operation of water treatment facilities to produce high quality, safe drinking water while maximizing water aesthetics (e.g. taste, clarity, and odor).		<ul style="list-style-type: none"> MWRA met all regulatory requirements for safe drinking water. MWRA received the 2018 Public Water System Award for Consistent Performance and Achievement, after three years of receiving awards for Outstanding Performance.
B. Monitor drinking water quality in collaboration with member communities and the Department of Conservation and Recreation (DCR) in order to verify high quality water and provide guidance for operating decisions.		<ul style="list-style-type: none"> MWRA continues to coordinate monitoring efforts with DCR for both routine algae and algal toxin monitoring as well as reservoir emergency response planning. In FY18, MWRA began Abraxis algal toxin testing for source and finished water. In FY18 MWRA began weekly inspections to monitor for cyanobacteria bloom in standby reservoirs. MWRA continues to coordinate field and laboratory resources to aid local water departments in resolution of water quality complaints and issues. MWRA provided community training for water quality system complaints, Revised Total Coliform Rule, and low chlorine residual troubleshooting.

C. Ensure reliability of data presented in required regulatory compliance reports.	→	<ul style="list-style-type: none"> • Increased automation of the process for calculation of annual statistics for CCR/Annual Water Quality report.
D. Work cooperatively with DCR and the Watershed Trust to ensure effective and transparent watershed management for water quality protection.	→	<ul style="list-style-type: none"> • Staff reviewed and commented on the update of the Quabbin, Ware and Wachusett Watersheds Protection Plans.
E. Operate the reservoir system to optimize both quality and quantity of water available for water supply purposes and to meet statutory and regulatory requirements for downstream releases.	→	<ul style="list-style-type: none"> • Met all statutory requirements for downstream releases. • MWRA achieves exceptional raw water quality through effective water transfer between the Quabbin and the Wachusett Reservoirs, based on amount and timing of transfers. • MWRA assessed standby reservoir monitoring program through results obtained during annual water quality sonde profiling and grab sample analysis. • Sudbury Reservoir, Foss Reservoir, Chestnut Hill Reservoir, Fells Reservoir, and Spot Pond are all kept within their normal operating ranges. Water has not been added to either Fells or Spot Pond since going into standby status in 1998. Level control has been maintained through the removal of excess water when the elevation has been above the normal operating range.
F. Enhance the safety and security of the water supply and watershed system against accidental or intentional threats and hazards.	→	<ul style="list-style-type: none"> • Implemented consequence management practices to guide responses to CMS alarms. The consequence management strategy is a threat response matrix that helps to speed up actions in response to a terrorist threat or contamination events. • New water quality monitoring buoys have been deployed on the Wachusett Reservoir. Communication equipment on an older buoy was also upgraded, and a new scan unit has been installed at the reservoir site.
G. Identify potential transportation related contaminants to the source water and develop a response to potential		<ul style="list-style-type: none"> • Continued U. Mass Amherst research project to evaluate impacts of an oil spill and treatment assessments.




<p>contamination from these sources.</p>		<ul style="list-style-type: none"> • In 2018, began investigating the mitigation of cyanotoxins in Wachusett water using treatment processes deployed at the CWTP. • Began procurement of a UV reactor for the bench-scale studies in the UMass project to simulate the treatment processes at CWTP.
<p>H. Evaluate improved ways to monitor and manage the system to maintain high quality water all the way to the ends of the community systems.</p>		<ul style="list-style-type: none"> • Expanded both Reservoir Monitoring and Contaminant Warning systems at selected MWRA facilities and critical monitoring locations. • Reformatted setup of TopView alert system for monitoring of water quality parameters to use bulk import/export of rules to reduce errors and provide consistency.
<p>I. Advocate for responsible and reasonable revised drinking water regulations.</p>		<ul style="list-style-type: none"> • MWRA staff continue to be active in state and federal review of the Lead and Copper Rule, and Unregulated Contaminant Monitoring Rule, as well as other proposed rule and guidance changes. • MWRA began sampling in January 2018 for the Unregulated Contaminant Monitoring Rule 4 (UCMR4). This is a three year monitoring program (2018-2020). In late 2018, staff will develop a training program and deliver training to selected partial and CVA communities.
<p>J. Develop improved data handling, auditing, and reporting functionality.</p>		<ul style="list-style-type: none"> • Monthly compliance report now available to DEP via electronic download. • Implemented new system for maintenance of electronic archives for all compliance reporting. Ten years of historical DEP reports were scanned and now also available electronically.
<p>K. Monitor drinking water quality of storage tank facilities during offline inspection activities</p>		<ul style="list-style-type: none"> • Staff provided sampling support during a warranty inspection associated with the Spot Pond Covered Storage Tanks during FY18.
<p>Goal #2: Continue to effectively report and communicate water quality information to our customers and public officials.</p>		
<p>Objective</p>	<p>2018</p>	<p>Highlights/ Progress Updates</p>
<p>A. Distribute the federally required annual water quality report, the</p>		<ul style="list-style-type: none"> • Completed Annual Water Quality report in June and distributed to homes, as well as posted on MWRA website. Additional focus




<p>Consumer Confidence Report (CCR), to all households.</p>		<p>this year on lead related issues and infrastructure investment.</p>
<p>B. Maintain and improve water quality and public health information on MWRA's web page, www.MWRA.com.</p>		<ul style="list-style-type: none"> • In FY2018, notices were posted regarding PFAs and lead, which remain topics in the news. The Annual Water Quality Report remains prominently featured at the top of the home page and was publicized through Twitter and other new outlets. The monthly water quality reports were posted regularly and sent directly to subscribers through the Everbridge application • During FY2018, MWRA continued to update and add water quality information on its website on topics such as updates about on-going water projects to improve water quality and invasive species removal at reservoirs. • MWRA again participated in AMWA's "Imagine A Day Without Water" in October 2017 and AWWA's "Drinking Water Week" in May 2018 with relevant postings on MWRA.com and Twitter.
<p>C. Investigate web-based and more real time reporting of data.</p>		<ul style="list-style-type: none"> • Began investigating operational data sources and technologies for data management, integration and warehousing. • A new system was implemented for the collection, storage and visualization of operational buoy data leveraging OSISoft's PI technology. The PI database in Chelsea will be the central repository for all MWRA PI data. MIS provided staff with the ability to look at operational buoy data using tools such as Matlab and PI Analytics.
<p>Goal #3: Assist member communities to improve local water distribution systems through ongoing financial, technical and operational support programs to maximize long-term water quality benefits.</p>		
<p>Objective</p>	<p>2018</p>	<p>Highlights/ Progress Updates</p>
<p>A. Provide technical and operational support through training, on-call contracts, and targeted assistance, as needed.</p>		<ul style="list-style-type: none"> • Continued School Lead Sampling Program, providing assistance to MWRA member communities with analysis of drinking water from schools for lead. In the first three years





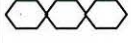
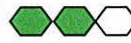
		<p>of the program, MWRA's Central Lab conducted over 35,000 analyses for lead from 37 MWRA communities opting to participate in the Program. Began a pilot program providing lead testing in childcare facilities. Both projects are expected to continue in FY19.</p> <ul style="list-style-type: none"> • Provided technical assistance to communities during water quality events and water main breaks. • Provided assistance with leak detection and valve operations to communities as requested. Assisted over 18 municipalities in the MWRA's Service Area with leak detection in their systems in FY18. • Met with 22 out of 43 customer communities to review water quality and distribution support. • Provided community training to 12 customer communities for coliform sampling and chlorine residual testing.
<p>B. Promote and manage MWRA's Local Water System Assistance Program to help facilitate improvements in local community infrastructure.</p>		<ul style="list-style-type: none"> • In FY18, \$30.9 million in MWRA interest-free loans were distributed to member water communities. In total, more than \$375 million in loans have been distributed to fund 407 local projects and 42 of 45 eligible water communities are participating. Since 1998, 530 miles of local water main have been replaced or cleaned and lined (about 8% of the regional system) via projects funded by MWRA financial assistance. In FY17, \$100 million lead service line replacement loan program began. In FY18, \$3.0 million was distributed to member water communities. In total, \$9 million in loans targeting full removal of lead water services have been distributed. Annual updates to the Board of Directors and the MWRA Advisory Board are ongoing. • Conduct significant outreach associated with the addition of the lead service line





		replacement program, as well as additional outreach on other local lead issues.
<p>C. Coordinate with MWRA's Advisory Board and develop a recommendation for a third phase of the community water financial assistance program for the FY21 to FY30 timeframe consistent with the Water Master Plan.</p>		<ul style="list-style-type: none"> • Coordination with the Advisory Board on development of Phase 3 Local Water System Assistance Program was completed in FY17. Beginning with the Final FY18 CIP, a new \$292 million Phase 3 of the community water loan program has been approved by the Board of Directors and made available to member communities.

II. Wastewater Quality and System Performance

Goal #4: Meet or surpass environmental compliance standards at both MWRA treatment facilities and throughout the wastewater collection system.		
Objective	2018	Highlights/ Progress Updates
A. Continue to carry out the Pretreatment Program to protect receiving water quality, maximize the beneficial reuse of wastewater residuals, and protect workers and MWRA's wastewater treatment plants.		<ul style="list-style-type: none"> • Conducted a total of 1462 industrial waste inspections (SIUs and non-SIUs), 1117 gas oil separator inspections, and 133 septage and septage hauler inspections. • Staff responded to 100% of all discharge violations for both Significant Industrial Users (SIUs) and Non-Significant Industrial Users (NON-SIUs) by taking enforcement action in accordance with its EPA approved Enforcement Response Plan (ERP). • Conducted a total of 2,872 sampling events for the following activities: <ul style="list-style-type: none"> ○ 1,522 industrial ○ 184 NPDES permit related ○ 13 for emergency response ○ 193 for local limits ○ 1,350 for special projects • Sampled 176 permitted Significant Industrial Users (SIU) with a discharge at least once in 2018. • Issued or renewed 345 permits
B. Continue to monitor DITP and Clinton Process Controls and quality of treated effluent to optimize plant performance and ensure that all applicable NPDES permit limits continue to be attained.		<ul style="list-style-type: none"> • Deer Island was awarded a Platinum award from the National Association of Clean Water Agencies (NACWA) for 11 consecutive years without a NPDES permit violation. • The Clinton Treatment Plant was awarded a NACWA Silver Award for less than five permit violations in a calendar year (one violation in calendar 2017).
C. Implement enhanced phosphorus control at the Clinton Wastewater Treatment Plant.		<ul style="list-style-type: none"> • Construction of phosphorus removal facility (Contract 7411) substantially complete as of March 2018. Operations staff are optimizing the facility in preparation for NPDES permit required compliance in April 2019.



<p>D. Develop a molybdenum (Mo) control strategy to enable more widespread biosolids reuse.</p>		<ul style="list-style-type: none"> In FY17, DEP simplified its Mo limits from two separate limits into one and raised the limit to 40 ppm, which was expected to enable MWRA to use its biosolids in-state year-round. MWRA pellet Mo levels remained below the 40 ppm limit at all times in FY18. Staff held a meeting with all the major cooling water treatment chemical suppliers in May. Suppliers indicated that they will cooperate with MWRA to educate their customers. Staff is developing Mo fact sheets for distribution by the chemical suppliers to their customers.
<p>E. Comply with I/I mapping and planning requirements in state environmental regulations and NPDES permits.</p>		<ul style="list-style-type: none"> Submitted Clinton Collection System Operation and Maintenance Plan outline by 9/1/2017, full plan by 12/31/2017 (in advance of March 2019 deadline), and collection system map by 5/15/2017 (in advance of September 2019 deadline), to comply with Clinton NPDES permit. Submitted I/I control plan for MWRA collection system by 12/31/2017, to comply with 314 CMR 12.04(2).
<p>F. Conduct an evaluation of the CSO treatment processes to determine potential opportunities to better meet permit limits.</p>		<ul style="list-style-type: none"> Evaluation of the CSO treatment processes was conducted in FY16 under MWRA Contract #7400, Task Order No. 15. The evaluation of each CSO facility involved reviewing both the equipment and operation of each CSO facility, as well as performing additional sampling during activations. A final report was submitted with the findings and recommendations for each facility. Next steps: <ul style="list-style-type: none"> Several key recommendations have been carried forward into the Prison Point Improvement Project (induction mixers, additional post chlorination sample locations, etc.). This improvement project is currently at the 90% design level. Lessons learned as a result of the Prison Pt. Improvement Project will be applied at Cottage Farm. Staff are working to implement improvements to total residual chlorine measurement at Somerville Marginal CSO.

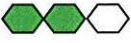
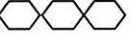
Goal #5: Continue to initiate plans and studies to prepare for regulatory changes; identify opportunities to refine monitoring requirements; and improve effluent quality.		
Objective	2018	Highlights/ Progress Updates
A. Prepare updated Local Limits Studies for Clinton and Deer Island in accordance with EPA guidelines to confirm appropriate discharge limits from industries.		<ul style="list-style-type: none"> • New Clinton permit was issued and became effective March 1, 2017. Local limits reassessment submitted to EPA in August 2017 and may result in revised local limits. Awaiting EPA's formal comments on the Local Limits analysis. • Awaiting EPA's issuance of new NPDES permit for DITP.
B. Continue to review all Ambient Monitoring Plan questions and conduct evaluations to ensure they address MWRA needs and public concerns		<ul style="list-style-type: none"> • A review workshop focusing on Ambient Monitoring Plan questions will be conducted (in concert with regulator's' Outfall Monitoring Science Advisory Panel) in Q2 of 2019.
C. Continue to closely follow potential permit issues such as the impact of changes in bacterial and nutrient water quality standards, NPDES delegation to MA, stormwater permitting, endangered species designations, co-permittees, and nitrogen impacts on Massachusetts Bay		<ul style="list-style-type: none"> • Key issues in FY18 included bacterial indicators of pathogens in wastewater and expected future limit on <i>Enterococcus</i>, mixing zone, and NPDES delegation.
D. Develop a plan to respond to emerging contaminants as they are identified and frame an approach to respond to the public's concerns about these constituents.		<ul style="list-style-type: none"> • Enqual is responsive to the public's concerns to emerging contaminants and performs investigations as needed to address these concerns.
E. Review new organic waste treatment technologies as they arise.		<ul style="list-style-type: none"> • No new technologies to review in FY18.
F. Prepare for the Dental Amalgam Rule change.		<ul style="list-style-type: none"> • The final rule was issued with an effective date of July 14, 2017. It requires only dentists who begin discharge to the sewer after July 14, 2017 to comply immediately with a certification statement that they have an approved amalgam separator. Existing dentists have until July 14, 2020 to comply. DEP currently manages the dental program. TRAC is working with DEP to transition the program to MWRA.



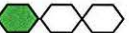
		<ul style="list-style-type: none"> TRAC is proposing to develop a group permit for dentists with a five-year duration. TRAC is in the process of updating the Sewer Use regulations (360 CMR 10.000) to incorporate dental discharges into MWRA's permitting program.
Goal #6: Complete all CSO milestones by 2020 and demonstrate that the CSO Plan meets its performance objectives at all outfalls. Ensure compliance with CSO NPDES permit requirements.		
Objective	2018	Highlights/ Progress Updates
A. Complete implementation of the remaining 3 of the original 35 CSO control projects.		<ul style="list-style-type: none"> Staff attained substantial completion of the last three CSO projects in FY16, in compliance with Schedule Seven, with the cooperation of BWSC and the City of Cambridge.
B. Attain levels of CSO discharge frequency and annual volume specific to each of the receiving basins addressed in the long-term CSO plan by 2020.		<ul style="list-style-type: none"> Staff continue to report CSO discharge estimates to EPA and DEP annually and track and evaluate performance against the court-ordered long-term levels of control. Staff continue to coordinate discharge predictions and measurements with CSO communities and work with the communities where opportunity exists to optimize system performance.
C. Complete final eligibility reviews and closeout of each completed community-implemented CSO Project.		<ul style="list-style-type: none"> Staff completed final eligibility reviews and closed out the community CSO memoranda of understanding and financial assistance agreements ("MOU/FAA") with Town of Brookline and BWSC in FY15 and FY17, respectively. The MOU/FAA with City of Cambridge ended on June 30, 2018, and staff expect to complete final eligibility reviews and close out funding of the completed Cambridge projects in early FY19.
D. Develop scope for the court-ordered CSO verification assessment by FY16 and implement the assessment during the period CY 18-20.		<ul style="list-style-type: none"> MWRA issued Notice to Proceed with the contract for the 3-year CSO Post-Construction Monitoring and Performance Assessment in November 2017, ahead of and in compliance with the January 2018 milestone in Schedule Seven. Inspection of >200 closed or active CSO regulators and installation of temporary overflow meters in active regulators is complete. Collection and evaluation of data from the temporary meters, permanent community and MWRA meters, and a network of rain gauges is ongoing. Hydraulic model updates are being made from the inspection and meter data. Receiving water quality data continue to be collected by staff and evaluated by the consultant. Semiannual reports on work progress and metered/modeled CSO discharges will begin to be issued in Fall 2018,



		towards a final report assessing attainment of court-ordered levels of CSO control in December 2020.
Goal #7: Assist member communities to improve their wastewater collection systems through ongoing technical, financial, and operational support programs.		
Objective	2018	Highlights/ Progress Updates
A. Provide technical and operational support including TV inspections, fieldwork assistance, or other targeted assistance, as needed.	→	<ul style="list-style-type: none"> Staff routinely provide technical assistance when requested. In FY18, staff provided assistance to Revere, Everett, Medford, Somerville and Cambridge.
B. Promote and manage MWRA's Inflow/Infiltration (I/I) Local Financial Assistance Program to facilitate reduced I/I in local community infrastructure.	→	<ul style="list-style-type: none"> In FY18, \$21.7 million in MWRA grants and interest-free loans were distributed to member sewer communities. In total, more than \$354 million in grants and loans have been distributed to fund 545 local projects and all 43 sewer communities are participating. Since 1989, average annual wastewater flow to DITP has been reduced by about 75 mgd, a 20% reduction. (See more information in the Annual NPDES I/I Reduction Report.) Annual updates to the Board of Directors and the Advisory Board are ongoing.

II. Infrastructure Management and Resilience

Goal #8: Maintain and enhance water and wastewater system assets over the long term at the lowest possible life cycle cost and acceptable risk, consistent with customer, community, and regulatory support service levels.		
Objective	2018	Highlights/ Progress Updates
<p>A. Continue to ensure proper operations and maintenance of the water and wastewater systems and minimize system downtime by performing Preventative, Predictive, and Corrective maintenance on equipment and linear assets, water system leak surveys, valve inspections and exercise, and performing inspections and cleaning of wastewater pipelines, structures, water storage tanks, and inverted siphons inspections, and cleaning.</p>		<ul style="list-style-type: none"> • Replaced 12 water blow-off retrofits and 7 main line valves, entailing excavating and isolating the main from the valve, cutting out the old valve and installing a new one. • Inspected 140 Miles of MWRA water mains and located 34 leaks, repairing 30 of them. The four remaining leaks could not be repaired due to isolating and supply issues. Seven mainline valves in the distribution system were also replaced. • Performed independent water meter testing to confirm the accuracy of the meters supplying the municipalities in MWRA Service Area. • Inspected 32.8 miles of MWRA wastewater interceptors and 50 siphon barrels. • Cleaned approximately 36 miles of wastewater interceptors and 72 siphon barrels. • Replaced 96 water and wastewater manhole frames and covers
<p>B. Inspect, maintain, and improve the dams, dikes, and other facilities constituting the infrastructure of the watershed system through ongoing maintenance and an adequate multi-year capital improvement program in order to ensure system reliability and limit potential flood hazards.</p>		<ul style="list-style-type: none"> • Since 2005, over \$20M has been invested in Capital and major maintenance of source and distribution water supply dams across the system. Continue to ensure the Dam Safety Compliance Program is followed for periodic regulatory inspections and reporting to MA Office of Dam Safety, ensure inspection findings of any deficiencies and needed maintenance issues are addressed. Ensure the dams' Emergency Action Plans are routinely updated and exercised.

		<ul style="list-style-type: none"> • Completed work to stabilize Chestnut Hill Reservoir Gatehouse #1 (Contract 7382) in April 2018. • MWRA was selected as a recipient of the 2017 (FY18) Association of Dam Safety Officials' "Northeast Regional Award of Merit" as an organization working in the dam safety field that has made outstanding contributions to dam safety on a regional level.
<p>C. Continue use of Condition Monitoring for Deer Island and expand Condition Monitoring techniques for all other water and wastewater facilities to provide earlier indication of asset degradation.</p>		<ul style="list-style-type: none"> • Condition Monitoring techniques continue to be utilized in normal business practices at DITP. • Continued to roll-out Condition Monitoring in FOD, including all the headworks, pump stations, and CSO facilities. Actions include oil sampling to determine the remaining life expectancy of the oil, ultrasonic testing of the grit pipe in the headworks, and vibration analysis. Staff continues to implement infrared thermography and laser alignment of pumps and fans. Initial staff training has already been instituted, but training will continue in FY19, specifically on vibration analysis.
<p>D. Conduct an updated benchmarking analysis in order to identify gaps and sustain the goal of maximizing asset protection while potentially identifying new best practices in the industry.</p>		<ul style="list-style-type: none"> • No work on this initiative to date.


<p>E. Update the wastewater metering system and evaluate new technologies to ensure continued accurate flow accounting and to enhance its usefulness for operational and evaluation purposes by adding additional monitoring locations.</p>		<ul style="list-style-type: none"> • Work is underway on Contract #6739 for wastewater metering system replacement, awarded by the Board of Directors in May 2017. Phase one includes the evaluation, planning and design of the wastewater metering system of approximately 225 permanent meter sites. Phase two consists of the installation of the new metering system. A further design and construction project will begin in CY19 to provide utility power for those meters determined to be useful during significant storms to monitor system performance.
<p>F. Continue to research and develop Key Performance Indicators (KPI) to compare our performance internally and against the industry.</p>		<ul style="list-style-type: none"> • The new MAXIMO, developed in FY16, went live in FY17. The new MAXIMO is assisting MWRA in making KPI's easy to track, display and compare with other industries.
<p>G. Enhance and monitor water pipeline protection to maximize pipeline lifetime.</p>		<ul style="list-style-type: none"> • In FY16, MWRA began the process of replacing old cathodic protection on MWRA water mains. In FY18, this work continued in force, with the following activities: <ul style="list-style-type: none"> ○ Designed eleven replacement cathodic protection systems for Section 57, a 79 year old 48-inch diameter steel water main in the northern low service area. In-house construction staff are working to replace these systems, including three completed in FY17 and 6 in FY18. ○ Replaced the cathodic protection system at Shaft 5 of the City Tunnel. ○ Design of a replacement cathodic protection system at Shafts E and L of the MWWST was completed and a contract for this work was bid in FY18, with bids due and scheduled for evaluation in the Q1 of FY19. (Contract 6440). ○ Assessment of existing cathodic protection systems on Section 98 running through Winthrop to

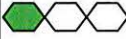

		<p>Deer Island is ongoing. This evaluation may lead to a contract to rehabilitate the cathodic protection system to improve operability and extend its life the next 20 years.</p> <ul style="list-style-type: none"> ○ Continue evaluating cathodic protection test stations For upgrade and replacement. ○ Capital program has added design and construction phases to replace and upgrade cathodic protection systems based upon testing results.
<p>H. Upgrade MWRA’s Authority-wide Computerized Maintenance Management System (MAXIMO) to increase functionality to track assets, improve work flow and augment the use of handheld units to increase productivity.</p>		<ul style="list-style-type: none"> ● The upgraded MAXIMO went live January 30, 2017 in support of Asset and Maintenance Management. In April a second deployment added MAXIMO Anywhere (mobile) and MAXIMO Spatial (GIS) capabilities. ● PI system was also updated to the latest version which includes enhanced security features with Data Diodes.
<p>I. Continue to upgrade and improve upon the Supervisory Control and Data Acquisition (SCADA) hardware and software to meet the current industry standard and to address cyber security concerns.</p>		<ul style="list-style-type: none"> ● FOD – PLC upgrade was completed at Comm. Ave West Pump Station; A new PLC Panel was designed and purchased for in-house installation at BWTF; A scope for the JJCWTP PLC replacement was finalized and was bid in January 2018 and qualifications (phase one of the two-step procurement process) were submitted by two firms. Proposals are due in October 2018. Additional PLC replacements are being performed as part of facility rehabilitation projects (Chelsea Creek Headworks, Alewife, Comm. Ave. East, etc), and will be developed in future PLC upgrade projects for water and wastewater facilities. ● FOD – Standards templates and guidelines were developed for High Performance Human Machine Interface (HMI) Graphics. New graphics will be implemented to improve operator situational awareness through ongoing design & construction projects and MWRA staff implementation.

		<ul style="list-style-type: none"> • Installed a new network security monitoring system and new firewall technologies. • Established internal committees to review MWRA’s physical resilience, and identify deficiencies and subsequently safety systems to provide multiple levels of protection from cyber attacks on MWRA’s assets. • Began the process of converting the SCADA network to an active directory domain which will allow the MWRA to centralize protection of its computer network from cyber attacks.
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Goal #9: Move forward with design and construction of major wastewater infrastructure rehabilitation and renewal projects.



Objective	2018	Highlights/ Progress Updates
<p>A. Continue to design and implement the rehabilitation projects for various pump stations, headworks, and CSO facilities.</p>	<p style="text-align: center;">→</p>	<ul style="list-style-type: none"> • Major facility rehabilitation and equipment upgrade construction projects were completed at Prison Point and Chelsea Creek Screen House. Additional work is underway at Chelsea Creek Headworks, Prison Point PS, and Alewife Brook PS. Specific rehabilitation projects include: <ul style="list-style-type: none"> ○ Chelsea Creek Headworks Upgrades, Contract 7161, is underway and 39% complete with substantial completion expected for November 2020. ○ Prison Pt. Suction and Discharging Piping Rehab, Contract 7459, Was completed in September 2017. ○ Design of Prison Point CSO Facility Improvements, Contact 7359, to upgrade, replace and add major facility components (gates, screen, conveyors, pump engines, mixers etc.) is at 90% design. ○ Design for new screens and security measures for Delauri PS began in FY18 and is almost complete. NTP for work is expected in December 2018. ○ Design of Nut Island Headwork Odor Control & HVAC Systems


		<p>Improvements, under Contract 7517 is at 90% design.</p> <ul style="list-style-type: none"> ○ An in-house design to replace screens and install security improvements at Delauri PS was awarded as Contract 7361 in January 2018. ○ Alewife Brook PS, Contract 6797, is ongoing and approximately 82% complete with substantial completion anticipated in November 2018. ○ The Remote Headworks & DI Shaft Study was awarded in June 2018 to study and provide recommendations for rehabilitation of effluent and influent shafts. ○ Design and Construction of replacement fuel tanks was completed at the Quincy and Hingham Pump Stations. ○ Braintree-Weymouth IPS and Chelsea Administration Building HVAC replacements are substantially complete. ○ Design services to provide improvements to the Braintree-Weymouth Pump Station are being procured.
<p>B. Develop ongoing program review, prioritize, and accelerate the implementation of interceptor renewal projects.</p>		<ul style="list-style-type: none"> ● Evaluated wastewater interceptors and prioritized them for rehabilitation. In the FY 16 CIP a number of project schedules were accelerated. ● The Reading Extension Sewer Rehab, Contract 7164, was awarded in May, 2017 and is 43% complete with substantial completion anticipated by December 2018. ● Rehabilitation studies of the Cambridge Branch Sewer and the North Met Trunk Sewer were completed in Dec. 2017 and April 2018, respectively. ● Design of the Dorchester Interceptor Renewal is progressing to the 90% design documents. Rehabilitation of Sewer


		Sections 19, 20 & 21 are being designed under Contract 7540.
C. Implement feasible recommendations from the North System Hydraulic Study to maximize conveyance of wastewater to Deer Island.		<ul style="list-style-type: none"> MWRA is continuing to implement feasible operational opportunities for system optimization within the North System wastewater conveyance system and provides funding for Inflow/Infiltration projects to North Metropolitan Communities.
D. Complete DITP valve and piping replacement project including operationally complex North Main Pump Station/Winthrop Terminal valve replacement.		<ul style="list-style-type: none"> 100% complete on the DITP valve and piping replacement project. Entire project was completed by the second quarter of FY18.

Goal #10: Prepare for catastrophic events that could affect the water and wastewater delivery systems.


Objective	2018	Highlights/ Progress Updates
A. Continue to improve and incorporate redundancy in the water system to ensure uninterrupted service by developing and implementing plans to eliminate or mitigate single points of failure within MWRA's water transmission and distribution system, including the Northern Intermediate High, the Southern Extra High, and the Metro Tunnel System.		<ul style="list-style-type: none"> In February 2017, the Board of Directors approved a plan for construction of two new water supply tunnels to provide redundancy for the Metropolitan Tunnel system (City Tunnel, City Tunnel Extension and Dorchester Tunnel). In April 2018, a new Director of Tunnel Redundancy was hired to lead this project. Construction on the Wachusett Aqueduct PS, Contract 7157, began in FY16 and is currently 92% complete. The contractor is ahead of schedule and anticipates substantial completion by December 2018. Construction continued on various sections of the Northern Intermediate High: <ul style="list-style-type: none"> Work on the first Stoneham Section 110, Contract 7478, is expected to be complete by September 2018. The new 48" water main was activated on July 10, 2018. Work on the second Stoneham Section 110, Contract 7067, is underway and approximately 19% complete with an expected completion date of June 2020.


		<ul style="list-style-type: none"> • Construction continued on various sections of the Southern Extra High: <ul style="list-style-type: none"> ○ Work on Section 111 Boston Section of the Southern Extra High Pipeline project, Contract 6454, was completed in July 2018. ○ Section 111 Dedham North, Contract 7504, started in October 2017 and is 29% complete with an expected completion date of November 2019. ○ Section 111 Dedham South, Contract 7505 - NTP was issued in August 2018.
<p>B. Continue to train staff on various potential emergency scenarios and participate in broader Massachusetts Emergency Management Agency (MEMA) and other training exercises.</p>		<ul style="list-style-type: none"> • Staff participated in MEMA and other externally hosted training, including an MWRA hosted FEMA funded Disaster Management for Water and Wastewater Utilities 2-day class that was also attended by 21 member communities. Internal trainings and exercises included: site characterization, Deer Island emergency response team drills, boom deployment, terrestrial spills, mobile disinfection, communications, tunnel incident response, and community Emergency Response Plan training.
<p>C. Continue to implement a comprehensive security and emergency preparedness program.</p>		<ul style="list-style-type: none"> • Staff continue to upgrade and expand the MWRA security system by establishing a new security center for the guards to monitor the alarms and video and by integrating the new John J. Carroll Water Treatment Plant guardhouse and Caruso PS into the overall system. • Facility Emergency Action Plans are updated annually. The western dam emergency action plans were recently updated. • Staff performed facility security audits at 18 facilities in FY18, bringing the total number of security audits completed in the last two years to 88. Security checks are also performed before every holiday

<p>D. Develop and implement an Information Security Plan (ISP) to increase the resiliency and sustainability of the MWRA's data security practices.</p>		<ul style="list-style-type: none">• Since the establishment of MWRA's ISP by ADM.31, 10 additional policies, 12 standards, and 30 procedures were drafted. These drafts continue to be revised and realigned with the NIST Cyber Security Framework and developed to include MWRA Information Technology ("IT" – <i>i.e.</i> MIS) and Operational Technology ("OT" -- <i>i.e.</i> SCADA, PICS, and OEP/Security) areas.• Planning for the next phase of this effort – to apply cyber security standards and controls appropriate to each IT system – has begun.
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<p>E. Enhance cyber security defense in-depth strategy to mitigate and manage new and evolving threats.</p>		<ul style="list-style-type: none"> • The Managed Security Services Contract (MWRA No. 7499), which began on July 1, 2016, completes on June 30, 2019, with an option to extend annually for up to two additional years. • Layered defenses for OT systems and networks continue to be strengthened, following cyber security recommendations from both Idaho National Labs and the US Department of Homeland Security (“DHS”). • IT and OT staff continue to meet together monthly to discuss current cyber security threats, vulnerabilities, and mitigations. • MWRA staff participated for the 3rd year in a week-long cyber security incident response drill alongside the National Guard. • All MWRA staff continued to be trained in basic cyber security awareness, and IT and OT staff in advanced cyber security technical topics. • Initiated and helped organize semi-annual Regional Water Sector OT/IT Security meetings to share cyber strategies and bring in outside subject matter experts as speakers. • Held the first internal cyber security incident response drill for management and technical staff.
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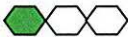



IV. Finance and Management


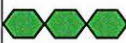
Goal #11: Ensure Financial Sustainability, Integrity, and Transparency.		
Objective	2018	Highlights/ Progress Updates
A. Continue the long-term strategic budgeting practice to ensure sustainable and predictable sewer and water assessments to our member communities.	→	<ul style="list-style-type: none"> Community Assessments increased by 3.19% in FY2018 and are projected to increase no more than 3.7% annually through FY2023. Assessments for the Water and Sewer utilities are now “smoothed” reducing the volatility of year-to-year assessment changes thereby improving the sustainability and predictability for member communities.
B. Manage debt and investment portfolios to maximize savings/returns in compliance with all applicable rules and regulations.	→	<ul style="list-style-type: none"> Staff continue to explore opportunities for refunding for interest rate saving. Most recently issuing \$21.9M in refunding bonds in FY18 for a net present value savings of \$3.8M.
C. Continue diversification strategy to insulate against overexposure and promote resiliency to changing market conditions.	→	<ul style="list-style-type: none"> Staff continue to seek prudent diversification.
D. Maintain a system of internal controls to best protect the organization’s resources.	→	<ul style="list-style-type: none"> Staff continue to review and monitor key controls and limit physical and electronic access to assets.
E. Continue to employ budget and expense control practices to manage expenses.	→	<ul style="list-style-type: none"> Continued to drive cost improvement and containment measures throughout FY18 that allowed MWRA to achieve the projected rate revenue requirement level for FY19.
F. Identify and pursue optimization in all aspects of MWRA financial operations		<ul style="list-style-type: none"> Continued the effort of reducing the use of paper by publishing documents on-line. Staff are actively evaluating the electronic financial system’s existing and possible additional software modules to optimize operations. Implemented Portia an investment tracking software in FY18.
G. Continue to conduct strategic energy procurements.	→	<ul style="list-style-type: none"> Continued to procure electricity based on competitive bid process and took advantage of electricity rebates from utilities pertaining to installation of more efficient equipment. Completed procurement of new electricity contracts for Deer Island and Interval Accounts contracts (96% of MWRA purchased demand) in FY16 with expiration in FY19.

<p>H. Continue to fund the pension fund at the annual required contribution level and to develop strategies to address the growing Other Post- Employment Benefits (OPEB).</p>		<ul style="list-style-type: none"> The pension fund is funded at 98.7%. However, due to recent actuarial losses, the contribution level and full amortization timetable will be reevaluated. In April 2015, an irrevocable OPEB Trust was established by the Board of Directors. The current OPEB Trust balance is \$17.5 million, which represents approximately 12% funding level. The annual funding practice has been and is projected to be half the annual required contribution. This practice will be evaluated annually and may be changed according to overall budgetary conditions.
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Goal #12: Ensure Cost-Effective Operational and Resource Management.		
Objective	2018	Highlights/ Progress Updates


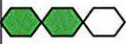
<p>A. Maintain and expand MWRA-wide recycling efforts.</p>		<ul style="list-style-type: none"> MWRA continues to recycle paper and cardboard at facilities as well as scrap metal at Chelsea, Deer Island and Southborough.
<p>B. Work with staff MWRA-wide to update construction and professional services contract documents.</p>		<ul style="list-style-type: none"> Procurement staff have begun to work with the Law Division to update construction contract documents. Completion of update of construction document expected by the end of 2019. Procurement and Law Division staff will also work on updating professional services contract documents in the latter half of 2019.
<p>C. Develop, implement, and transition to fully automated, virtually paperless procurement and purchasing system.</p>		<ul style="list-style-type: none"> With few exceptions, all Ch. 30 construction and Ch. 149 with and without filed sub bids and non-professional contracts are now electronic. RFPs for Professional Services will be much more difficult to automate due to the variability of each proposal. Staff have begun efforts to develop electronic system of procuring Professional Services.
<p>D. Expand use of electronic platforms for the purchase of all goods and services.</p>		<ul style="list-style-type: none"> Virtually all goods are now purchased via electronic platforms.

<p>E. Procure, Develop and Implement E-Construction and E-Design Software for use in managing and tracking design and construction project.</p>		<ul style="list-style-type: none"> E-Construction has been tested successfully in managing the Chelsea Headworks Rehabilitation construction project. E&C and MIS are working to develop scope for the procurement and implementation for future design and construction projects.
<p>Goal #13: Maintain an Excellent Workforce.</p>		
	2016	Highlights/ Progress Updates
<p>A. Prioritize Succession Planning in anticipation of critical retirements over the next five years.</p>		<ul style="list-style-type: none"> Continue to identify succession planning initiatives including training programs, leadership program, and expedited replacement hiring processes in advance of critical retirements.
<p>B. Continue to provide programs and procedures to ensure employee safety.</p>		<ul style="list-style-type: none"> Provide Safety Awareness Training to all employees. In June, the Board approved the creation of a new position, Manager, Occupational Health and Safety, who will manage MWRA's compliance with the new OSHA Safety for Public Section regulations. Provide on-going safety training programs that address confined space entry, lockout/tagout, electrical safety, Right to Know, Tower and Wind Turbine climbing, OSHA-10 Construction Safety and training in railroad track area safety procedures from both the MBTA and Keolis.
<p>C. Provide effective training necessary for employees to obtain and maintain required licenses and certifications to ensure a highly skilled workforce.</p>		<ul style="list-style-type: none"> Wastewater and Collection Operator certification and license prep courses are provided at least twice per year on premises. Employees are sent to vendor throughout the year for training prep on Water Distribution and Treatment. Classes are regularly offered to employees to meet continuing education requirements for license renewals and required hours.
<p>D. Continue MWRA's efforts to develop new recruitment and retention strategies to foster diversity, including traditionally underrepresented categories, people with disabilities, and veterans.</p>		<ul style="list-style-type: none"> Staff attended two job fairs and continued to expand social media and other online recruitment efforts to increase access to diverse pools of candidates. Job postings are now sent to numerous web based sites and professional associations. <ul style="list-style-type: none"> Developed 258 additional recruitment sources for minorities, women,

		<p>individuals with disabilities, and veterans in addition to its existing fifty-three (53) recruitment sources identified in the Affirmative Action Plan.</p> <ul style="list-style-type: none"> ○ Participated in two all-veterans career fairs sponsored by RecruitMilitary. ○ Launched Local Jobs Network, a web-based recruiting site, where entry, mid-level, and senior level positions are posted. <ul style="list-style-type: none"> ● Out of 192 positions for both new hires and promotions, 44 were filled with protected class individuals.
E. Continue to expand on MWRA's in-house Job Shadowing and career development training programs.	→	<ul style="list-style-type: none"> ● Continued the Operator on-the-job training program and maintenance mechanic shadow training programs. ● Continue to provide a medium voltage training program. Continue to offer supervisory development programs and water and wastewater prep courses. Provided a project management certification preparatory class for engineering staff.
F. Create programs with a focus on professional and leadership development.		<ul style="list-style-type: none"> ● Continue to provide Non-Union managers Leadership Development Program through Bentley University.
G. Upgrade MWRA's employment application system to add the onboarding module.		<ul style="list-style-type: none"> ● Completed implementation of the onboarding module.
H. Continue intern initiative designed to increase future applicant pool.	→	<ul style="list-style-type: none"> ● Hired 27 interns for the 2018 summer intern program.
Goal #14: Leverage Information Technology to Improve Organizational Effectiveness.		
Objective	2018	Highlights/ Progress Updates
A. Deliver Information Technology (IT) services and solutions efficiently and effectively.	→	See highlights under specific initiatives below.
B. Provide Information Technology solutions to streamline work processes while ensuring the security and integrity of MWRA data by leveraging the use of existing or emerging technologies.	→	<ul style="list-style-type: none"> ● Implemented An updated WiFi Solution. Previously there were multiple locations with different wireless setups throughout the MWRA. A single, Authority wide, secure solution has been implemented that has separate login capabilities for approved MWRA devices and approved quest devices. This created the foundation for a uniform

		<p>wireless experience for MWRA users with approved devices.</p> <ul style="list-style-type: none"> • A Secure file sharing application has been implemented which provides MWRA the ability to securely share large files internally and with external parties, as necessary.
C. Obtain feedback from users on satisfaction levels and desired new services and implement changes accordingly.	→	<ul style="list-style-type: none"> • Continued meeting with ENQUAL and Lab Services, met with Finance, HR, and Procurement and consultant to plan Lawson upgrade/migration options, issues and desires and new features. Documented multiyear project forecast for departmental meetings review and prioritization.
D. Maintain current technology hardware, software, and network infrastructure.	→	<ul style="list-style-type: none"> • Deployed over 1200 updates to existing hardware and software throughout the year to ensure currency and mitigate vulnerabilities.
E. Enhance Information Technology workforce capabilities through new certification and license requirements.	→	<ul style="list-style-type: none"> • Maintaining a three-year rolling training plan in order to maintain staff skill sets. In FY18, staff were sent to 20 training classes, obtained 2 certifications and participated in 8 out-of-state conferences and 11 in-state conferences to ensure that the IT workforce capabilities are up to date.
F. Implement an Application Improvement Program that will continue MWRA's efforts to update and enhance the myriad applications used by MWRA to improve efficiencies of business processes and effectiveness of staff.	→	<p>The following is a list of applications that were either updated or had functionality changes throughout FY2018:</p> <ul style="list-style-type: none"> • Computerized Maintenance Management System (CMMS) Enhancements: IBM's Control Desk was implemented to replace the MIS ticketing system. Maximo was upgraded with Maximo Asset Management 7.6.0.8 alongside IBM Control Desk (ICD) v7.6.0.3. All MWRA assets are now managed in the same system. • GIS: GIS functionality has been added to Maximo to provide users water valve location information. iPad applications with GPS capabilities have been deployed to assist field staff in improving location data for waterworks and sewerage infrastructure assets. • Infor/Lawson: Incorporated benefit and organizational changes into these programs.






		<ul style="list-style-type: none"> • Telog: Created a new web page hosted on Pipeline that allows staff to access the vendor-developed Telog Web Module. • Library Catalog System: Replaced several old MWRA Library applications with one application. • LIMS: Updated an existing solution to meet DEP Auditor’s recommendation. • PI Upgrade: PI Data Archive Servers (MWRA-CY-7 and DITP04) were upgraded to version PI-2017R2. NCCIC released an advisory on vulnerabilities in OSIsoft PI Data Archive versions prior to 2017. • Telog System was upgraded -Software upgrade as well as moved to VM in DEV and PROD. • Electronic Laboratory Notebook (ELN): Phase 1 was deployed for testing. Redesign of ELN Phase 1 per request from users is in progress • Automatic Vehicle Location (AVL) System: provides real-time web based operational data about MWRA vehicles. MIS created an interface to push real time AVL data such as fuel consumption and vehicle mileage data into Maximo for reporting purposes.
<p>G. Implement an e-Discovery, Archive and Purge System that will provide an automated and integrated solution for archiving electronic content that will allow the Authority to intelligently store, manage and discover email and all critical business information sources, while providing easy and intuitive access for end users.</p>		<ul style="list-style-type: none"> • Archiving and Purge and E-Discovery proof-of-concept systems user testing is underway. • The Pretreatment Information Management System (PIMS) application is being modified to meet the Environmental Protection Agency’s (EPA) updated CROMERR regulations.
<p>H. Execute a Technology Infrastructure Improvement Program that will assess and implement consolidated and optimized versions of MWRA’s core IT infrastructure elements</p>		<ul style="list-style-type: none"> • Print, Fax, Scan and Copy: Installed new multi-function devices (MFDs) throughout MWRA facilities consolidating services (Print, FAX, Scan, Copier) onto one platform. Purchase 24 MFDs to replace expiring leases in FY17 and an additional 19 in FY18.




<p>and improve data management practices.</p>		
<p>I. Improve the organization of Information Technology and the oversight processes for selecting and implementing IT solutions throughout the MWRA.</p>		<ul style="list-style-type: none"> • Information Technology Steering Committee: The Business-IT Project Prioritization Committee, made up of senior staff representing the Authority's Divisions established in FY17 continues to meet quarterly to assess project progress and set priorities. • MIS Reorganization: With the hiring of a Manager of Application & System Development, other PCR amendments being approved by the Board, and some final staff reporting changes, MIS has completed the organizational transformation recommended in the 5-year Strategic Plan. • Implemented standardized processes and documentation templates for the development and implementation of IT Systems.
<p>J. Implement real-time SSO reporting system to provide public information and ensure reporting timeframes meet regulatory req.</p>		<ul style="list-style-type: none"> • Streamlined SSO field data collection is in progress. The collection application is available and has been field tested once. Upon completion of the ArcGIS Server upgrade, the application will be able to validate that required fields are entered. The field data collection portion of this project will be completed by FY19 Q1.


V. Environmental Sustainability




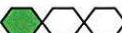
Goal #15: Continue to maximize energy efficiency of MWRA operations, renewable energy production, and revenue generation opportunities using MWRA's energy assets.		
Objective	2018	Highlights/ Progress Updates
A. Continue to conduct energy audits at all facilities and establish regular audit schedules.	→	<ul style="list-style-type: none"> • Energy audit conducted for DITP North Main Pump Station during the 2nd quarter of FY18. • Energy audits of all other Operations facilities (e.g. water and wastewater pump stations, CSOs, office buildings, etc) substantially complete in Metro Ops, but on-going in Western Ops. • Energy savings expected as a result of projects undertaken completed facility audits resulted in approximately 6.2 million kWh saved
B. Optimize processes to save energy.	→	<ul style="list-style-type: none"> • Installed adjustable valves on the odor control system to allow fans to be operated more efficiently when running multiple fans together in odor control facilities.
C. Incorporate energy efficiency into new construction, rehabilitation projects, and equipment replacement.	→	<ul style="list-style-type: none"> • Chelsea Creek Headworks upgrade, Contract 7161, is on-going and contains several energy efficiency components including LED lighting, occupancy sensors, a building energy management system, and VFDs on the odor control fans, HVAC, and hot water pumps. • Wachusett Pump Station is being constructed as a zero net energy facility using photovoltaics solar panels, geothermal heating, and high efficiency building design features. • Investigate the refurbishment and coating of Pump 9 in Deer Island's North Main Pump Station to increase the efficiency of the pump. If cost-effective, this work is proposed for FY19. • In FY19, a lighting master plan will be created for updating lights to LEDs or the most efficient lights across all facilities left.

		<ul style="list-style-type: none"> Natural gas was installed as part of facility rehabilitation projects to replace oil at Chelsea Creek HW, Alewife Brook PS, Caruso PS, and Clinton WWTP.
D. Continue to invest in the production and utilization of cost effective renewable energy at MWRA facilities.	→	<ul style="list-style-type: none"> The new CVA-Fish Hatchery Hydroelectric Facility came on-line in FY18. It is a Qualified Facility under the Renewable Portfolio Standard. In FY17 Commented on DPA proceedings to allow net metering for small hydroelectric facilities. In FY19, MWRA is applying to participate in the new small hydroelectric net metering program for both Loring Road and the CVA Fish Hatchery project.
E. Continue to reduce greenhouse gas emissions that result from MWRA operations.	→	<ul style="list-style-type: none"> MWRA GHG inventory completed and report drafted. Published on MWRA's webpage in FY17. Through implementation of energy efficiency projects, use of renewable energy sources, and low emission technologies, such as electric vehicles, MWRA continues to reduce its GHG emissions. From 2006 through 2018, MWRA has reduced its GHG emissions by about one third. In FY18, MWRA purchased an All-Electric SUV and a Plug-in Hybrid Electric Vehicle (PHEV), and installed 2 charging stations at the Chelsea facility to help reduce vehicle fuel emissions. In FY 18 MWRA continued to implement measures consistent with with Governor Baker's Executive Order 569, "Establishing an Integrated Climate Change Strategy for the Commonwealth", by purchasing lower emissions fleet vehicles.
F. Continue to maximize revenue from generation assets.	→	<ul style="list-style-type: none"> In FY18, all green assets, with the exception of hydro and wind were in operation greater than 95% of the time. Hydro assets were in operation 68% of the year, mostly due to Loring Rd and DI Hydro undergoing repairs and Oakdale being off-line during winter months.




<p>G. Take full advantage of utility energy efficiency rebate opportunities.</p>		<ul style="list-style-type: none"> Both Deer Island and the Carroll Water Treatment Plant continue to participate in the ISO-NE's Demand Response Program, earning revenue for using back-up generation in the event of a power emergency.
<p>H. Incorporate employee education on energy efficiency in MWRA training outlets, e.g. tool box talks and HR training classes.</p>		<ul style="list-style-type: none"> Staff developed outline of tool box talks for Metro and Western Ops staff. Talks are scheduled to be given FY19
<p>I. Determine technical and economic feasibility of co-digestion at Deer Island Wastewater Treatment Plant to ensure it is compatible with existing MWRA wastewater and sludge treatment processes while producing a significant amount of additional high quality gas for energy production.</p>		<ul style="list-style-type: none"> Co-digestion on Deer Island was found to be financially unsustainable due to limitation on receiving material via barge. Continuing to follow Greater Lawrence Sanitary District's (GLSD) pilot co-digestion project to relate to DITP and Clinton WWTP in the future. The project at GLSD is progressing slowly due to a shortage of pre-processed food waste need to support the project. The feasibility of conducting co-digestion at Clinton WWTP was evaluated and found to be not viable for two reasons – the process would increase the phosphorus loadings by a factor of 5 which would cause violations of Clinton's new NPDES permit, and the existing generators are not equipped to use the extra gas generated, requiring significant capital upgrades.
<p>J. Move forward with the design of new gas turbine technology combined heat and power equipment to take advantage of the higher power and thermal efficiencies of new equipment, maximizing the production of additional electric power for on-site use at Deer Island, as well as cost savings while reducing maintenance spending on aging equipment.</p>		<ul style="list-style-type: none"> Prepared bid documents for a design project to perform a comprehensive energy study on DITP reviewing how DITP receives electricity and generates heat and power to determine future course of action for the plant. Initial scope of work to be modified due to changes in HEEC negotiations. The project was rebid at the end of FY18. Bids are expected in the first quarter of FY19, with a final report due late in 2021.
<p>K. Investigate the potential energy savings from installing new, larger residuals drying trains at the Pelletizer Plant compared to</p>		<ul style="list-style-type: none"> MWRA completed an evaluation of upgrading to larger dryers at the Pelletizer Plant (100 ton/day on average). The study concluded that there would be some energy

<p>the operational cost of running them.</p>		<p>savings by moving to the larger dryers, however, the payback would be more than 30 years, and the current dryers are not near the end of their useful life. Staff recommends that when the existing dryers need to be replaced, MWRA consider moving to the larger dryers.</p>
<p>Goal #16: Continue to monitor climate change research and move forward with plans to reduce impacts of projected sea level rise and storm surge events on MWRA infrastructure.</p>		
<p>Objective</p>	<p>2018</p>	<p>Highlights/ Progress Updates</p>
<p>A. Incorporate design modifications into facility renovations and maintenance activities to address sea level rise and storm surge.</p>		<ul style="list-style-type: none"> Continued to update flood elevations as FEMA revised its projections. Now regularly including these design parameters in all renovation and new construction projects.
<p>B. Plan and install flood protection barriers at water and wastewater sites which fall below expected elevations of flood waters under condition of a FEMA 100 year storm plus 2 ½ feet to minimize damage and still provide service.</p>		<ul style="list-style-type: none"> Flood protection was designed and installed by in-house staff for 10 facilities. Staff commenced investigations to ensure flood protection at MWRA sewer siphons. Flood protection is also being incorporated into facility rehabilitation projects and is currently being installed at the Alewife Brook Pump Station and Chelsea Headworks Facility as part of the ongoing construction project.
<p>C. Work with State and regional organizations and academic institutions to identify how MWRA’s existing long-term environmental data sets can be used to help assess and project impacts of climate change.</p>		<ul style="list-style-type: none"> Staff participated with regional regulators and scientists on the development of an integrated Sentinel Monitoring Network (ISMN) identifying key datasets and parameters that can be used to identify climate change impacts. Existing MWRA monitoring data were identified as important long-term monitoring datasets in the ISMN plan, which was completed in FY17.


<p>D. Participate in regional activities aimed at preparing for the potential impacts of climate change and ensuring the resiliency of MWRA’s facilities.</p>		<ul style="list-style-type: none"> • MWRA is an active member of the Metro Mayors Coalition and has participated in several discussions and workshops to establish a common framework to prepare for the impacts of climate change. Staff are integrating this framework into MWRA’s planning initiatives and project reviews. • MWRA continues to work with key stakeholders, including the City of Boston, MassPort, UMass Boston and others, to share progress on vulnerability assessments and coordinate adaptation efforts.
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Goal #17: Advance reasonable water system expansion.		
Objective	2018	Highlights/ Progress Updates
<p>A. Continue to provide assistance to communities seeking admission to the MWRA’s water system or seeking emergency withdrawals.</p>		<ul style="list-style-type: none"> • Provided assistance with the Water System Admission process to the following communities: Ashland, North Reading, Walpole, Brockton, Sharon, Burlington, Union Point/Southfield Redevelopment Authority, Peabody, and the Lynnfield Center Water District.
<p>B. Work with prospective communities to inform them of the benefits of admission.</p>		<ul style="list-style-type: none"> • Work continues on this initiative, through outreach to communities, watershed groups, and associations and through requests from consultants representing the communities.
<p>C. Advocate for a more streamlined regulatory review procedure, including expediting the Massachusetts Environmental Policy Act and Interbasin Transfer Act review process.</p>		<ul style="list-style-type: none"> • The MA Water Resources Commission revised its Interbasin Transfer regulations in early 2018 and they include a streamlined donor basin review process. In the year ahead MWRA will prepare a donor basin application that once approved, can be utilized for all interbasin transfer requests in the future.
<p>D. Work with MWRA’s Advisory Board on legislative initiatives to pursue funding for connection assistance for new communities connecting to the water system.</p>		<ul style="list-style-type: none"> • Work with the Advisory Board continues.

Goal #18: Continue to recognize the environmental, cultural, historical, and recreational importance of the watershed lands, the aqueduct system, and the unique location on Boston Harbor of the Deer Island Treatment Plant and Nut Island Headworks, to the citizens of the Commonwealth.


Objective	2018	Highlights/ Progress Updates
<p>A. Continue to work cooperatively with DCR and cities and towns to ensure that these lands are available for appropriate public access.</p>		<ul style="list-style-type: none"> • Staff have participated in the DCR Land Acquisition Panel (LAP) offering guidance since 1995. The MWRA Board has had approval oversight of watershed land purchases under the CIP since FY07. Staff continue to be active in the LAP attending quarterly meetings and offering MWRA viewpoints on land purchases, preservation restrictions and disposition. <i>This update also supports Goal #1, assisting MWRA to maintain drinking water quality.</i>
<p>B. Continue to work with cities and towns to implement the Public Access Initiative on the Wachusett, Weston, Sudbury, and Cochituate Aqueducts.</p> <p>This program creates a partnership between MWRA and communities that host each piece of infrastructure, granting access to applicant communities to use MWRA controlled aqueduct right-of-ways of the Cochituate, Sudbury, Wachusett, and Weston Aqueducts, along with the lands surrounding the Weston and Norumbega distribution reservoirs.</p>		<ul style="list-style-type: none"> • The MWRA Aqueduct Trails Program is an innovative initiative that has opened up new recreational opportunities in communities across Metro West on appropriate MWRA aqueduct infrastructure. • Since 2011, MWRA staff has been working with aqueduct communities to provide technical assistance through the 8(m) permit process and have had great success opening access to these resources for the first time. • To date, MWRA staff has issued many Section 8 (m) Permits as part of the Aqueducts Trails Program authorizing approximately 30 miles of Aqueduct Trails. MWRA estimates that approximately 23 miles are currently open to the public.
<p>C. Continue to provide public access to Boston Harbor at Deer and Nut Islands, while ensuring appropriate security for MWRA's operations.</p>		<ul style="list-style-type: none"> • The Division of Marine Fisheries permitting for the Deer Island pier was completed in the Spring of 2017. Bids were released by DMF, but were considered too high, so DMF is rebidding the project in the fall of 2018.


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: October 17, 2018
SUBJECT: FY19 Financial Update and Summary Through September 2018

COMMITTEE: Administration, Finance & Audit

INFORMATION
 VOTE


Kathy Soni, Budget Director
Preparer/Title


Thomas J. Durkin
Director, Finance

RECOMMENDATION:

For information only. This staff summary provides the financial results and variance highlights for Fiscal Year 2019 through September 2018, comparing actual spending to the budget.

DISCUSSION:

The total Year-to-Date variance for the FY19 CEB is \$3.4 million, due to lower direct expenses of \$674,000, indirect expenses of \$436,000, and debt service costs of \$2.0 million; and higher revenue of \$293,000.

FY19 Current Expense Budget

The CEB expense variances through September 2018 by major budget category were:

- Net Lower Direct Expenses of \$674,000, or 1.2% under budget. Spending was lower for Wages & Salaries, Professional Services, Worker's Compensation, Fringe Benefits, Maintenance, and Other Materials. This is offset by higher spending on Utilities, Other Services, Overtime, Chemicals, and Training & Meetings.
- Lower Indirect Expenses of \$436,000, or 2.8%, due to lower expenses for the low voltage switchgear upgrades related to the HEEC cable, lower Watershed reimbursements due to a 2018 year-end over accrual, and lower claim spending for Insurance.
- Lower Debt spending of \$2.0 million, or 1.8% due to favorable short-term interest rates, and favorable impact of lower than estimated borrowing cost for State Revolving Fund.

FY19 Budget and FY19 Actual Year-to-Date Variance by Expenditure Category
(in millions)

	FY19 Budget YTD	FY19 Actual YTD	\$ Variance	% Variance
Direct Expenses	\$55.6	\$54.9	-\$0.7	-1.2%
Indirect Expenses	\$15.3	\$14.9	-\$0.4	-2.8%
Capital Financing	\$115.5	\$113.5	-\$2.0	-1.8%
Total	\$186.5	\$183.3	-\$3.1	-1.7%

Totals may not add due to rounding

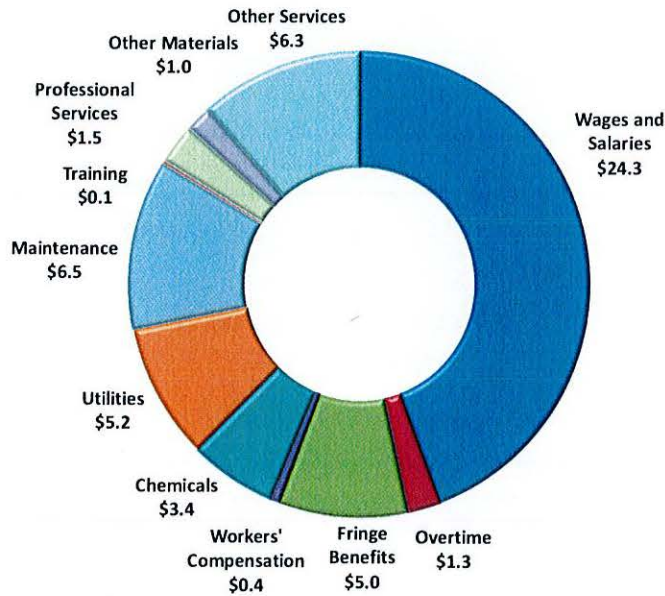
Total Revenues of \$191.5 million were \$293,000, or 0.2% over budget. The majority of the variance is pertaining to the favorable short term rates for investment income.

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

Direct Expenses

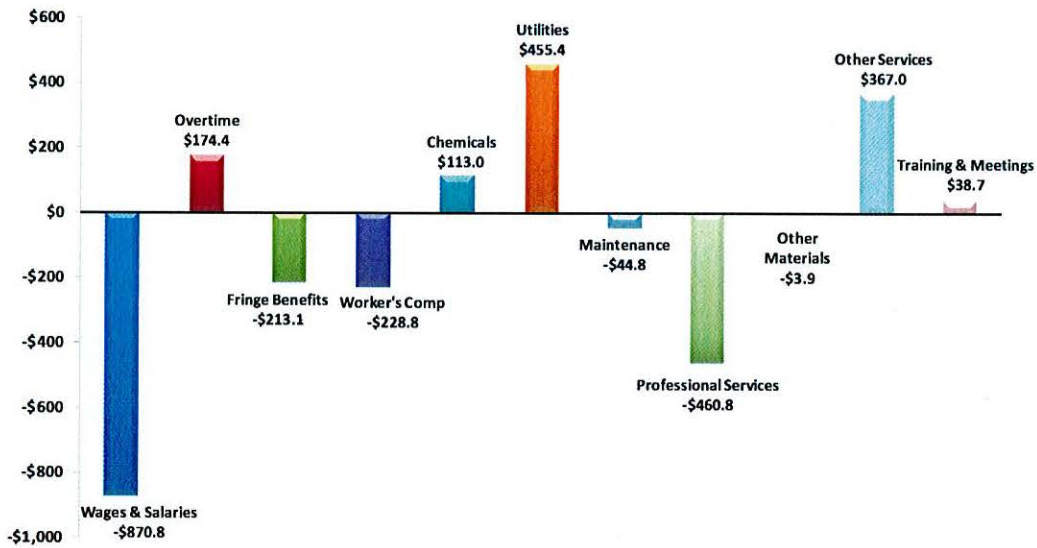
Year-to-date direct expenses totaled \$54.9 million, \$674,000, or 1.2%, less than budgeted.

FY19 Year-to-Date Direct Expenses
(in millions)



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

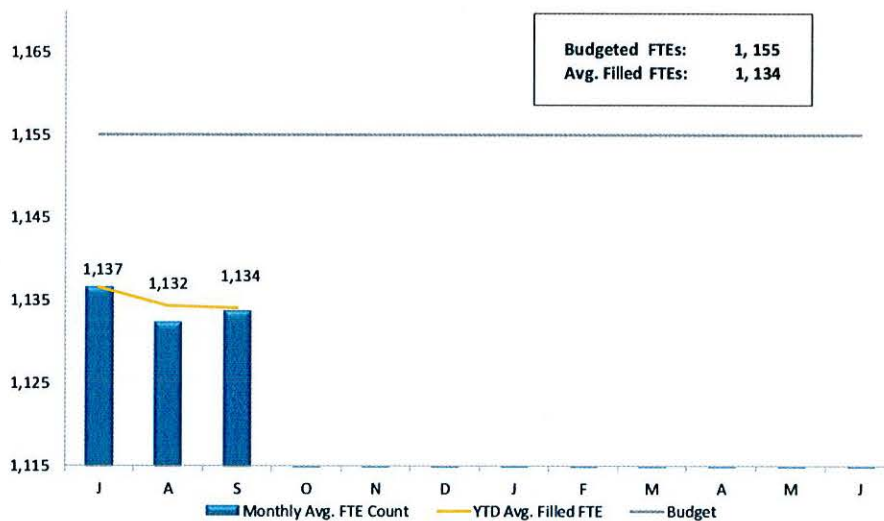
**FY19 Year-to-Date Direct Expense Variance
(in thousands)**



Wages and Salaries

Wages and Salaries are under budget by \$871,000, or 3.5%. Year to date, there have been 21 fewer average FTEs (1,134 versus 1,155 budget), lower average new hire salaries versus retirees' as well as the timing of backfilling vacant positions, and lower leave balance accruals contributed to Regular Pay being under budget.

FY19 MWRA Full Time Equivalent (FTE) Position Trend



Professional Services

Professional Services were under budget by \$461,000, or 23.2%. The overall underspending year-to-date is due to Engineering Services in Operations and Other Professional Services in Operations, Human Resources, Finance, and Law.

Worker's Compensation

Worker's Compensation expenses were lower than budget by \$229,000, or 37.8%. The lower expenses were primarily due to lower medical payments and net reserve changes of \$116,000, lower compensation payments and net reserve changes of \$96,000, and administrative expenses of \$16,000.

Fringe Benefits

Fringe Benefit spending was lower than budgeted by \$213,000, or 4.1%, primarily for lower Health Insurance costs of \$199,000 due to fewer employees and retirees than budgeted participating in health insurance plans, and the ratio change of employee contribution and change from family to individual plans, which are less expensive.

Maintenance

Maintenance was under budget by \$45,000, or 0.7%. While there were numerous components to the underspending for Maintenance year-to date, as a whole, the Administration Division is under spent in Fleet Services and MIS. This is offset by overspending in Operation Division, primarily at Deer Island.

Other Materials

Other Materials were less than budgeted by \$4,000 or 0.4%.

Utilities

Utilities were overspent by \$455,000, or 9.7%. Electricity overspending is \$360,000 primarily at Deer Island. Diesel fuel overspending is \$101,000 for timing of deliveries primarily in Wastewater Operations.

Other Services

Other Services were over budget by \$367,000 or 6.2%. There were numerous components over budget, including Sludge Pelletization of \$332,000 due to higher year-to-date quantities, and Membership/Dues/Subscription of \$185,000 for timing of payment Water Research Foundation membership. This was offset by lower spending in Telephones of \$106,000 associated with telephone and data lines in MIS and FOD, and Other Services of \$105,000 for a number of services, including timing of Technical Assistance for Lead issues, and timing of remediation projects managed by Real Property/Environmental Management.

Overtime

Overtime expenses were higher than budgeted by \$174,000, or 16.0%. The overspending for the fiscal year was mainly in Wastewater Operations for wet weather events.

Chemicals

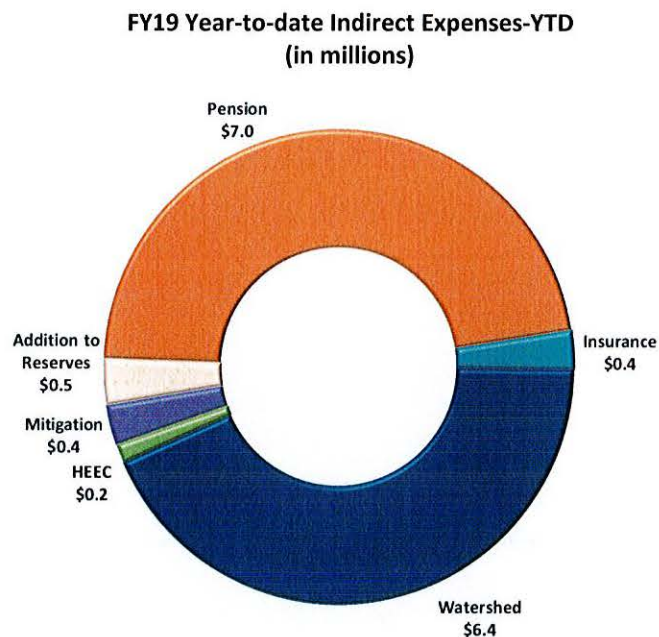
Chemicals were higher than budget by \$113,000, or 3.5%. The majority of the variance for Chemicals was the result of unbudgeted costs to replace Activated Carbon at Nut Island Headworks and Braintree/Weymouth Intermediate Pump Station. Deer Island flows are 0.5% greater than the budget and the Carroll Plant flows are 6% less than budgeted.

Training & Meetings

Training & Meetings expenses were higher than budgeted by \$39,000, or 42.9% due to timing.

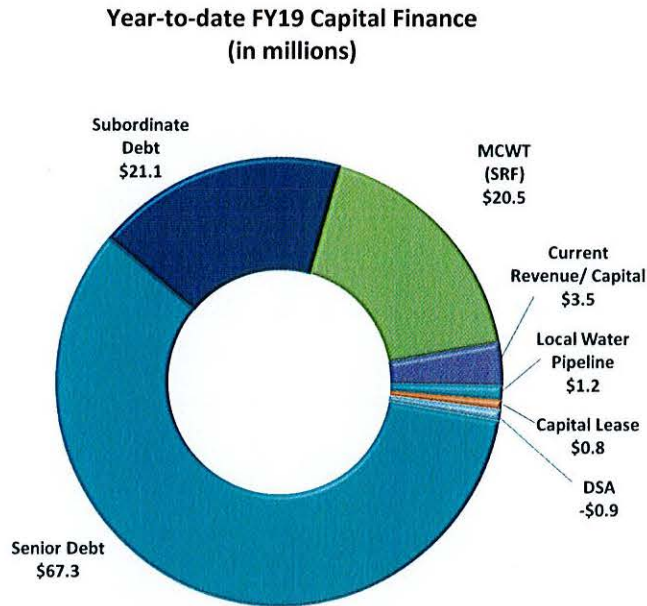
Indirect Expenses

Year-to-date Indirect Expenses totaled \$14.9 million, which is \$436,000 or 2.8% under budget. There are variances within the lines that comprise Indirect Expenses, including lower HEEC cable costs, Watershed costs, and Insurance costs. HEEC charges are under budget by \$154,000 for the low voltage switchgear upgrades, Watershed costs are lower than budget by \$154,000 due to an over-accrual at the end of FY18 of Watershed operating expenses. Insurance costs are lower than budget by \$129,000 for lower claims of \$89,000 and lower premiums of \$69,000.



Capital Financing

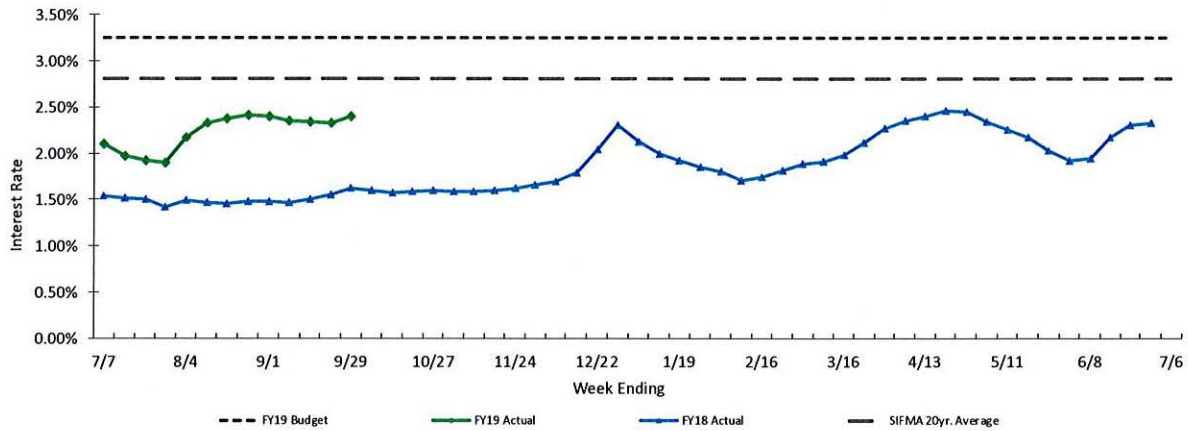
Capital Financing expenses include the principal and interest payments for fixed debt, the variable subordinate debt, the Massachusetts Clean Water Trust (SRF) obligation, the commercial paper program for the local water pipeline projects, current revenue for capital, and the Chelsea facility lease payment.



Year-to-date Capital Financing expenses for FY19 totaled \$183.3 million, which was under budget by \$3.1 million, or 1.7%. The variance is primarily attributed to favorable short-term variable rates.

The graph on the following page reflects the FY19 actual variable rate trend by week year-to-date against the FY19 Budget.

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



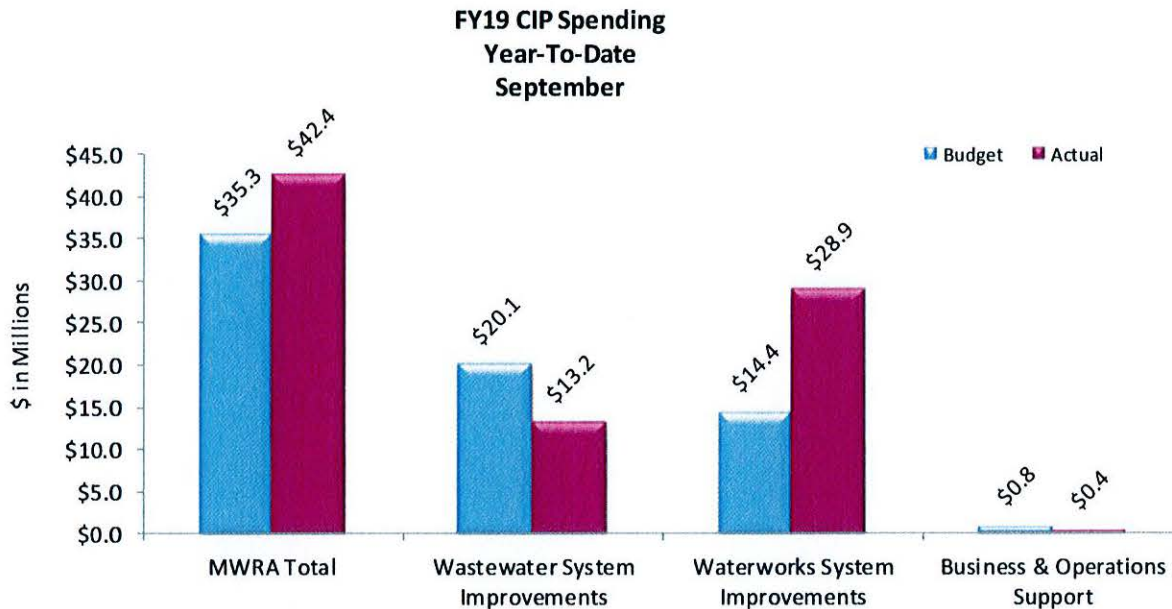
Revenue & Income

Year-to-date Revenues of \$191.5 million were \$293,000, or 0.2% over budget. Investment income was over budget \$358,000 for favorable returns on investment income (average short-term rates were higher than budgeted: 2.18% vs.1.75%), and Other User Charges was over budget \$34,000. This is offset by lower than budget Miscellaneous Revenue of \$100,000 related to lower energy revenues.

FY19 Capital Improvement Program

Capital expenditures in Fiscal Year 2019 through September total \$42.4 million, \$7.1 million, or 20.0%, over budget.

After accounting for programs which are not directly under MWRA's control, most notably the Inflow and Infiltration (I/I) grant/loan program, the Local Water Pipeline loan program, and the community managed Combined Sewer Overflow (CSOs) projects, capital spending totaled \$26.8 million, \$3.5 million, or 11.5%, under budget.



Overall CIP spending reflects the overspending of \$14.5 million in Waterworks Improvements, and underspending of \$6.9 million in Wastewater Improvements, and \$0.5 million in Business and Operations Support. Major variances in Waterworks are primarily due to greater than anticipated community requests for loans and contractor progress on the Northern Intermediate High Section 89 & 29 Construction Phases 1C, 2, and Wachusett Pump Station.

Wastewater variances are primarily due to less than anticipated community requests for grants and loans for the Infiltration/Inflow (I/I) Local Financial Assistance Program, Somerville Marginal In-System Storage project due to delay in Somerville construction award, and construction delays for the Chelsea Creek Headworks Upgrades due to odor control foundation and Channel 1 work, Winthrop Terminal Facility VFD Replacement due to timing of delivery of equipment, Alewife Brook Pump Station Rehabilitation due to timing of final work, and DeLauri Pump Station Screens and Security due to delay in delivery of screens, partially offset by initial progress for the Gravity Thickener Rehabilitation contract.

FY19 Budget and FY19 Actual Year-to-Date Variance by Program
(in millions)

\$ in Millions	Budget	Actuals	\$ Var.	% Var.
Wastewater System Improvements				
Interception & Pumping	12.3	9.2	(3.1)	-25.0%
Treatment	1.2	0.9	(0.2)	-21.0%
Residuals	0.2	0.4	0.2	84.9%
CSO	1.7	0.3	(1.4)	-80.6%
Other	4.6	2.2	(2.4)	-52.1%
Total Wastewater System Improvements	\$20.1	\$13.2	(\$6.9)	-34.4%
Waterworks System Improvements				
Drinking Water Quality Improvements	0.6	0.3	(0.3)	-49.2%
Transmission	3.2	3.8	0.5	16.7%
Distribution & Pumping	9.6	11.5	1.9	19.7%
Other	1.1	13.4	12.3	1154.1%
Total Waterworks System Improvements	\$14.4	\$28.9	\$14.5	100.2%
Business & Operations Support	\$0.8	\$0.4	(\$0.5)	-57.5%
Total MWRA	\$35.3	\$42.4	\$7.1	20.0%

Totals may not add due to rounding

FY19 Year-to-date Spending by Program:

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

Other Waterworks: Net overspending of \$12.3 million

- \$13.0 million for the Local Water System Assistance Program due to greater loan requests than anticipated, partially offset by \$0.6 million for Bellevue 2 and Turkey Hill Painting/Improvements contract being awarded less than budget.

Interception & Pumping: Net underspending of \$3.1 million

- \$1.9 million for Chelsea Creek Upgrades Construction due to delays with odor control foundation and Channel 1 work.
- \$0.5 million for Alewife Brook Pump Station Construction due to timing of final work.
- \$0.5 million for DeLauri Pump Station Screens and Security due to delay in screen delivery.
- \$0.1 million for Wastewater Metering Planning/Study/Design due to additional time needed to obtain temporary meter data.
- This underspending was partially offset by overspending of \$0.3 million for Prison Point Piping Rehabilitation for work scheduled for FY18 but completed in FY19.

Other Wastewater: Net underspending of \$2.4 million

- \$2.4 million for Community Infiltration/Inflow (I/I) due to less than budgeted requests for grants and loans.

Water Distribution and Pumping: Net overspending of \$1.9 million

- Overspending of \$0.7 million for NIH Section 89 & 29 Phase 2 Construction, \$0.7 million for Section 89/29 Redundancy Phase 1C Construction, and \$0.3 million for NIH Design CA/RI due to contractor progress, and \$0.1 million for Section 50 & 57 Water and Sections 21/20/19 Sewer Design due to consultant progress of work.
- This overspending was partially offset by \$0.2 million for Section 14 Water Main Relocation (Malden) due to timing of final work.

Combined Sewer Overflow: Net underspending of \$1.4 million

- \$1.4 million for Somerville Marginal In-System Storage due to City of Somerville construction award was delayed.

Waterworks Transmission: Net overspending of \$0.5 million

- \$0.7 million for Wachusett Aqueduct Pump Station Construction due to contractor progress, and \$0.4 million for Rosemary Brook Building Repair for FY18 work completed in FY19.
- This overspending was partially offset by underspending of \$0.2 million for WASM 3 MEPA/Design/CA/RI for test pit work that was delayed, \$0.2 million for Watershed Land due to timing of land purchases, and \$0.1 million for Commonwealth Avenue Pump Station Design Construction Administration/Resident Inspection due to timing of work.

Business & Operations Support: Net underspending of \$0.5 million

- \$0.2 million for Maximo Upgrade due to timing of final work and \$0.2 million for As-Needed Technical Assistance due to timing of task order work.

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

- \$0.1 million for the Marlborough Maintenance Facility due to work scheduled in FY19 completed in FY18.

Wastewater Treatment: Net underspending of \$0.2 million

- Deer Island: \$0.8 million for Winthrop Terminal Facility VFD Replacement Construction due to timing of delivery of equipment, partially offset by overspending of \$0.7 million for Gravity Thickener Rehabilitation due to earlier work than originally anticipated.

Residuals: Net underspending of \$0.2 million

- Underspending of \$0.2 million for Sludge Tank & Silo Coating due to work scheduled for FY18 completed in FY19.

Construction Fund Balance

The construction fund balance was \$110.0 million as of the end of September. Commercial Paper/Revolving Loan availability was \$222.0 million to fund construction projects.

ATTACHMENTS:

Attachment 1 – Variance Summary September 2018

Attachment 2 – Current Expense Variance Explanations
Attachment 3 – Capital Improvement Program Variance Explanations

ATTACHMENT 1
FY19 Actuals vs. FY19 Budget

	September 2018 Year-to-Date				
	Period 3 YTD Budget	Period 3 YTD Actual	Period 3 YTD Variance	%	FY19 Approved
<u>EXPENSES</u>					
WAGES AND SALARIES	\$ 25,196,564	\$ 24,325,782	\$ (870,782)	-3.5%	\$ 107,032,021
OVERTIME	1,088,982	1,263,356	174,374	16.0%	4,447,554
FRINGE BENEFITS	5,184,807	4,971,700	(213,107)	-4.1%	21,173,571
WORKERS' COMPENSATION	605,652	376,846	(228,806)	-37.8%	2,422,609
CHEMICALS	3,262,733	3,375,720	112,987	3.5%	10,830,452
ENERGY AND UTILITIES	4,699,746	5,155,170	455,424	9.7%	22,868,632
MAINTENANCE	6,524,242	6,479,488	(44,754)	-0.7%	32,258,727
TRAINING AND MEETINGS	90,261	128,972	38,711	42.9%	455,770
PROFESSIONAL SERVICES	1,988,421	1,527,599	(460,822)	-23.2%	7,675,976
OTHER MATERIALS	1,009,068	1,005,176	(3,892)	-0.4%	7,381,098
OTHER SERVICES	5,967,108	6,334,077	366,969	6.1%	23,065,411
TOTAL DIRECT EXPENSES	\$ 55,617,584	\$ 54,943,886	\$ (673,697)	-1.2%	\$ 239,611,821
INSURANCE	\$ 524,765	\$ 396,253	\$ (128,512)	-24.5%	\$ 2,099,064
WATERSHED/PILOT	6,601,607	6,447,909	(153,698)	-2.3%	26,406,427
HEEC PAYMENT	346,707	192,982	(153,725)	-44.3%	1,386,832
MITIGATION	403,565	403,566	1	0.0%	1,614,262
ADDITIONS TO RESERVES	470,450	470,450	-	0.0%	1,881,797
RETIREMENT FUND	7,000,000	7,000,000	-	0.0%	7,000,000
POST EMPLOYEE BENEFITS	-	-	-	---	5,574,152
TOTAL INDIRECT EXPENSES	\$ 15,347,094	\$ 14,911,160	\$ (435,935)	-2.8%	\$ 45,962,534
STATE REVOLVING FUND	\$ 20,597,518	\$ 20,517,655	\$ (79,863)	-0.4%	\$ 89,380,363
SENIOR DEBT	67,283,495	67,283,495	-	0.0%	272,633,982
CORD FUND	-	-	-	---	-
DEBT SERVICE ASSISTANCE	(944,726)	(944,726)	-	0.0%	(944,726)
CURRENT REVENUE/CAPITAL	3,549,998	3,549,998	-	0.0%	14,199,991
SUBORDINATE MWRA DEBT	23,031,906	23,031,906	-	0.0%	92,032,292
LOCAL WATER PIPELINE CP	1,187,599	1,187,599	-	0.0%	4,750,396
CAPITAL LEASE	804,265	804,265	-	0.0%	3,217,060
DEBT PREPAYMENT	-	-	-	---	7,100,000
VARIABLE DEBT	-	(1,958,787)	(1,958,787)	---	-
HEEC CABLE CAPACITY RESERV	-	-	-	---	-
DEFEASANCE ACCOUNT	-	-	-	---	-
TOTAL DEBT SERVICE	\$ 115,510,055	\$ 113,471,405	\$ (2,038,650)	-1.8%	\$ 482,369,358
TOTAL EXPENSES	\$ 186,474,733	\$ 183,326,451	\$ (3,148,282)	-1.7%	\$ 767,943,713
<u>REVENUE & INCOME</u>					
RATE REVENUE	\$ 184,760,550	\$ 184,760,550	\$ -	0.0%	\$ 739,042,200
OTHER USER CHARGES	2,400,361	2,433,957	33,596	1.4%	9,328,768
OTHER REVENUE	862,277	762,753	(99,524)	-11.5%	6,013,635
RATE STABILIZATION	-	-	-	---	-
INVESTMENT INCOME	3,229,273	3,587,724	358,451	11.1%	13,559,110
TOTAL REVENUE & INCOME	\$ 191,252,461	\$ 191,544,984	\$ 292,523	0.2%	\$ 767,943,713

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY19 Budget YTD September	FY19 Actuals YTD September	FY19 YTD Actual vs. FY19 Budget		Explanations
			\$	%	
<u>Direct Expenses</u>					
Wages & Salaries	25,196,564	24,325,782	(870,782)	-3.5%	Wages and Salaries are under budget by \$871,000. Year to date, there have been 21 fewer average FTEs (1,134 versus 1,155 budget), lower average new hire salaries versus retirees, the timing of backfilling vacant positions, and lower leave balance accruals contributed to Regular Pay being under budget.
Overtime	1,088,982	1,263,356	174,374	16.0%	Higher spending mainly in Wastewater Operations of \$173,000 for wet weather events.
Fringe Benefits	5,184,807	4,971,700	(213,107)	-4.1%	Lower than budget mainly in Health Insurance of \$199,000, due to fewer than budgeted participants in health insurance plans, increased contribution by external new hires vs. lower contribution rates of staff retiring, and the shift from family to individual plans which are less expensive.
Worker's Compensation	605,652	376,846	(228,806)	-37.8%	Underspending due to lower Medical Payments of \$116,000, Compensation Payments of \$96,000 and Management Costs of \$16,000. The lower expenses were primarily due to reductions in medical payments and reserves of \$116,000, compensation payments and reserves of \$96,000, and administrative expenses of \$16,000.

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY19 Budget YTD September	FY19 Actuals YTD September	FY19 YTD Actual vs. FY19 Budget		Explanations
			\$	%	
Chemicals	3,262,733	3,375,720	112,987	3.5%	Overspending for Activated Carbon of \$166,000 for the unbudgeted replacement of carbon at Nut Island Headworks and Braintree Weymouth IPS for odor control, Sodium Bisulfite of \$56,000 at DITP and Wastewater Ops; Sodium Hypochlorite of \$52,000 in Wastewater Ops for wet weather and CWTP. This is offset by underspending in Soda Ash of \$111,000 at CWTP and Clinton; and Hydrogen Peroxide of \$73,000 at DITP. DITP flows are 0.5% higher than the budget and CWTP flows are 6% less than the budget through September. It is important to note that Chemicals variances are also based on deliveries which in general reflect the usage patterns. However, the timing of deliveries is an important factor.
Utilities	4,699,746	5,155,170	455,424	9.7%	Overspending in Electricity of \$360,000 primarily at DITP and Diesel Fuel of \$101,000 primarily in Wastewater Ops due to timing of deliveries.
Maintenance	6,524,242	6,479,488	(44,754)	-0.7%	Services were underspent by \$496,000 and Materials were overspent by \$452,000. Underspending in Building & Grounds Services of \$335,000 in FOD primarily for timing of invasives control at the reservoirs and DITP for over accrual of door replacement work completed at the end of FY18; Pipeline Services of \$106,000 for timing of manhole rehab project on the sewer system and paving, both in FOD; Specialized Equipment Services of \$99,000 in DITP for timing of PICS upgrade, and Lab Services; and Electrical Services of 64,000 at CWTP for timing of service contracts. Overspending in Plant & Machinery Materials of \$347,000 primarily in DITP for flowmeters and associated materials, which regulate fuel oil flows to the CTP's and FOD; HVAC Materials of \$96,000 in FOD for the Braintree/Weymouth IPS and Chelsea Admin Facility HVAC project which slipped from FY18, offset by lower spending at DITP; Computer Software Licenses Upgrade in MIS; and Plant & Machinery Services of \$61,000 at DITP for timing of digester mixer services, offset by lower spending in FOD.
Training & Meetings	90,261	128,972	38,711	42.9%	Overspending in Operations at FOD and Engineering, and MIS.

**ATTACHMENT 2
Current Expense Variance Explanations**

Total MWRA	FY19 Budget YTD September	FY19 Actuals YTD September	FY19 YTD Actual vs. FY19 Budget		Explanations
			\$	%	
Professional Services	1,988,421	1,527,599	(460,822)	-23.2%	Underspending in Engineering Services of \$206,000 in Operations primarily at Reservoir Ops for timing of dam asset maintenance plans and DITP; and Other Professional Services of \$113,000 in Operations, HR for Pay Equity Study, Finance, and Law.
Other Materials	1,009,068	1,005,176	(3,892)	-0.4%	Lower than budgeted spending for Equipment/Furniture of \$46,000 in Operations for timing of water quality and lab equipment; Vehicle Purchase/Replacement of \$39,000 due to timing of deliveries ; Other Materials of \$38,000 in Clinton for gravel and Residuals for plastic bags for fertilizer; Vehicle Expense of \$26,000 in Fleet Services for lower gasoline prices offset by higher diesel fuel prices; and Health and Safety of \$16,000 at DITP. This is offset by higher spending in Work Clothes of \$82,000 in Operations for ??; and Computer Hardware of \$51,000 in MIS.
Other Services	5,967,108	6,334,077	366,969	6.1%	Higher than budgeted spending for Sludge Pelletization of \$332,000 due to higher year to date quantities related to Struvite control and the gravity thickener emergency repairs; and Membership/Dues/Subscription of \$185,000 in Operations for timing of payment for Water Research Foundation, the budget was spread in October. This is offset by lower spending for Telephone/Data Services of \$106,000 in MIS and FOD; and Other Services of \$105,000 for a number of services, including timing of Technical Assistance for Lead issues in Planning, remediation projects managed by Real Property/Environmental Management, and the switch from renting modems to purchasing them for the Contaminant Monitoring System in Water Quality Assurance.
Total Direct Expenses	55,617,584	54,943,886	(673,698)	-1.2%	
Indirect Expenses					
Insurance	524,765	396,253	(128,512)	-24.5%	Lower claims than budgeted of \$89,000 and premiums of \$69,000.
Watershed/PILOT	6,601,607	6,447,909	(153,698)	-2.3%	Lower Watershed Reimbursement of \$154,000 million due to over accrual at the end of FY18 as compared to the actual amount paid in the first quarter of FY19.

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY19 Budget YTD September	FY19 Actuals YTD September	FY19 YTD Actual vs. FY19 Budget		Explanations
			\$	%	
HEEC Payment	346,707	192,982	(153,725)	-44.3%	Lower than budgeted spending on special projects related to the HEEC cable.
Mitigation	403,566	403,566	-	0.0%	
Addition to Reserves	470,450	470,450	-	0.0%	
Pension Expense	7,000,000	7,000,000	-	0.0%	
Post Employee Benefits	-	-	-		
Total Indirect Expenses	15,347,095	14,911,160	(435,935)	-2.8%	
Debt Service					
Debt Service	115,510,055	113,471,405	(2,038,650)	-1.8%	\$2.0 million for lower than budgeted variable rate, and a combination of lower cost of borrowing and assumed versus actual borrowing terms for SRF funds.
Debt Service Assistance	-	-	-		
Total Debt Service Expenses	115,510,055	113,471,405	(2,038,650)	-1.8%	
Total Expenses					
Total Expenses	186,474,734	183,326,451	(3,148,283)	-1.7%	
Revenue & Income					
Rate Revenue	184,760,550	184,760,550	-	0.0%	
Other User Charges	2,400,361	2,433,957	33,596	1.4%	
Other Revenue	862,277	762,753	(99,524)	-11.5%	
Investment Income	3,229,273	3,587,724	358,451	11.1%	Investment Income is over budget mostly due to short term rates higher than budget (2.18% vs.1.75% budget).
Total Revenue	191,252,461	191,544,984	292,523	0.2%	
Net Revenue in Excess of Expenses	4,777,727	8,218,533	3,440,806		

ATTACHMENT 3
Capital Improvements Variance Explanations (000s)

	FY19 Budget YTD September	FY19 Actuals YTD September	YTD Actuals vs. Budget		Explanations
			\$	%	
Wastewater					
Interception & Pumping (I&P)	\$12,295	\$9,220	(\$3,075)	-25.0%	<u>Underspending</u> Chelsea Creek Headworks Upgrades - Construction: \$1.9M (due to odor control foundation and Channel 1 work delays) Alewife Brook Pump Station Rehab - Construction: \$522k (due to bypass pumping issues) DeLauri Pump Station Screens and Security: \$478k (delay in delivery of screens) Wastewater Meter System Planning/Study/Design: \$134k (additional time for acquisition of metering data) Miscellaneous contracts totaling \$303k. <u>Offset Overspending</u> Prison Point Piping Rehabilitation - Design/CA/RI: \$262k (work scheduled for FY18 performed in FY19)
Treatment	\$1,188	\$939	(\$249)	-21.0%	<u>Underspending</u> Radio Repeater System Upgrades - Phase 1: \$125k (award less than budgeted) WTF VFD Replacement - Construction: \$784k (custom manufactured with long lead times and timing of installation) <u>Offset Overspending</u> Gravity Thickener Rehab: \$671k (contractor progress)
Residuals	\$243	\$449	\$206	84.9%	<u>Overspending</u> Sludge Tank & Silo Coating: \$206k (work scheduled for FY18 is being done now)
CSO	\$1,698	\$330	(\$1,368)	-80.6%	<u>Underspending</u> Somerville Marginal In-System Storage: \$1.4M (Somerville construction schedule change)
Other Wastewater	\$4,642	\$2,225	(\$2,418)	-52.1%	<u>Underspending</u> I/I Local Financial Assistance: \$2.4M (less than budgeted requests for grants and loans)
Total Wastewater	\$20,067	\$13,163	(\$6,904)	-34.4%	

ATTACHMENT 3
Capital Improvements Variance Explanations (000s)

	FY19 Budget YTD September	FY19 Actuals YTD September	YTD Actuals vs. Budget		Explanations
			\$	%	
Waterworks					
Drinking Water Quality Improvements	\$553	\$281	(\$272)	-49.2%	<u>Underspending</u> Marlborough Maintenance Facility: \$119k (Timing of remaining work. Contract is substantially complete.) Miscellaneous contracts totaling \$153k
Transmission	\$3,228	\$3,766	\$538	16.7%	<u>Overspending</u> Wachusett Aqueduct Pump Station - Construction: \$697k (due to project progress) Rosemary Brook Siphon Building Repair: \$386k (timing of final payment) <u>Offset Underspending</u> WASM 3 - MEPA/Design/CA/RI: \$170k (test pits work delayed) Watershed Land Acquisition: \$155k (timing of land purchases) Commonwealth Avenue Pump Station Improvements - Design/CA/RI: \$101k (timing of work) Miscellaneous contracts totaling \$119k.
Distribution & Pumping	\$9,580	\$11,466	\$1,886	19.7%	<u>Overspending</u> NIH Section 89/29 Redundancy Phase 1B and 1C and Phase 2 : \$1.6M, Section 89/29 Rehab - Design: \$276k SEH Redundancy Pipeline Section 111 Phase 2 - Construction: \$142k, Sections 50 & 57 Water & 19/20/21 Sewer Rehab - Design/ESDC: \$132k (all due to project progress) <u>Offset Underspending</u> Section 14 Water Pipe Relocation (Malden): \$180k (work scheduled for FY19 performed in FY18)
Other Waterworks	\$1,066	\$13,370	\$12,304	-	<u>Overspending</u> Local Water Pipeline Financial Assistance Program: \$13.0M (greater than budgeted requests for loans) <u>Offset Underspending</u> Bellevue II & Turkey Hill Water Tanks Repainting: \$590k (award less than budgeted)
Total Waterworks	\$14,427	\$28,883	\$14,456	100.2%	

ATTACHMENT 3
Capital Improvements Variance Explanations (000s)

	FY19 Budget YTD September	FY19 Actuals YTD September	YTD Actuals vs. Budget		Explanations
			\$	%	
Business & Operations Support					
Total Business & Operations Support	\$839	\$357	(\$482)	-57.5%	<u>Underspending</u> MIS Projects: \$243k (timing of final MAXIMO Upgrade work) Miscellaneous contracts totaling \$239k.
Total MWRA	\$35,333	\$42,402	\$7,069	20.0%	



MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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WASTEWATER POLICY & OVERSIGHT COMMITTEE MEETING

to be held on

Wednesday, October 17, 2018

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

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

Time: Immediately following AF&F Committee

AGENDA

A. Information

1. MWRA industrial Waste Report #34 Industrial Pretreatment Program Annual Report to EPA for FY2018
2. 2017 Deer Island Outfall Monitoring Overview

B. Contract Awards

1. Thermal and Hydro Power Plant Maintenance, Deer Island Treatment Plant: IPC Lydon, Contract S578
2. Supply and Delivery of Ferric Chloride to the Deer Island Treatment Plant: Kemira Water Solutions, Bid WRA-4564
3. Braintree-Weymouth Pump Station Improvements, Design and Engineering Services during Construction: Wright-Pierce, Contract 7435

C. Contract Amendments/Change Orders

1. Remote Headworks Upgrade: Arcadis U.S., Inc., Contract 7206, Amendment 6

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the

Wastewater Policy and Oversight Committee

September 19, 2018

A meeting of the Wastewater Policy and Oversight Committee was held September 19, 2018 at the Authority headquarters in Charlestown. Committee Vice Chair Walsh presided. Present from the Board were Ms. Wolowicz and Messrs. Carroll, Cotter, Foti, Pappastergion, Peña, and Vitale. Mr. Flanagan was absent. Among those present from the Authority staff were Frederick Laskey, Steven Remsberg, David Coppes, Thomas Durkin, Corinne Barrett, David Duest, Martin McGowan, Ethan Wenger and Kristin MacDougall. The meeting was called to order at 11:31 a.m.

Contract Awards

*** Supply and Delivery of Sodium Hypochlorite to the Deer Island Treatment Plant: Borden & Remington Corporation, Bid WRA-4552**

The Committee recommended approval (ref. WW A.1.)

*** Supply, Delivery and Disposal of Regenerated Activated Carbon to the Deer Island Treatment Plant: Carbon Activated Corporation, Bid WRA-4554**

The Committee recommended approval (ref. WW A.2.)

*** Struvite, Scum, Sludge and Grit Removal Services at the Deer Island Treatment Plant: Moran Environmental Recovery, Bid WRA-4551**

Staff made a presentation on the struvite mitigation process. There was general discussion and questions and answers.

The Committee recommended approval (ref. WW A.3.)

Contract Amendments/Change Orders

*** Chelsea Creek Headworks Upgrade: BHD/BEC JV 2015, A Joint Venture, Contract 7161, Change Order 18**

* Committee recommendation approved by the Board on September 19, 2018

Staff made a presentation about the status of the project. There was general discussion and questions and answers. (Mr. Foti and Ms. Wolowicz temporarily left the meeting and returned during discussion.)

The Committee recommended approval (ref. WW B.1.)

Approvals

*** Deer Island HEEC Cable Funding**


Staff made a verbal report and recommended authorization for MWRA to reach an understanding with Harbor Electric Energy Company (HEEC) regarding the application of progress payments “on account”, consistent with the provisions of the parties’ May 9, 2017 Memorandum of Agreement.

The Committee recommended approval (ref. WW C.1.)

The meeting adjourned at 12:17 a.m.

* Committee recommendation approved by the Board on September 19, 2018


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: October 17, 2018
SUBJECT: MWRA Industrial Waste Report #34: Industrial Pretreatment Program Annual Report to EPA for FY18

COMMITTEE: Wastewater Policy & Oversight

INFORMATION
 VOTE

Carolyn M. Fiore, Deputy Chief Operating Officer
Rebecca Weidman, Director, TRAC
Preparer/Title


David W. Coppes, P.E.
Chief Operating Officer

RECOMMENDATION:

For information only. MWRA is required by its National Pollutant Discharge Elimination System (NPDES) Permits and U.S. Environmental Protection Agency regulations (40 CFR 403.12(i)) to submit an annual report to EPA and the Massachusetts Department of Environmental Protection each year that describes the activities and accomplishments of MWRA's Industrial Pretreatment Program. Staff will be submitting the FY18 Annual Report (Industrial Waste Report #34) to EPA and MassDEP on or before October 31, 2018, the required submittal deadline. This staff summary discusses some of the highlights from the report. A draft copy of the report will be available in the Board lounge.

DISCUSSION:

Industrial Waste Report #34 documents MWRA's efforts to control current permitted sewer users during FY18. MWRA's Toxic Reduction and Control Department operates the Industrial Pretreatment Program to control the level of toxic substances discharged into the sanitary sewer system from commercial and industrial sources. Through permits, inspections, sampling, and enforcement, the program keeps excessive levels of toxics out of the sanitary sewer system to: protect worker health and safety; protect municipal and MWRA infrastructure; prevent interference at the Deer Island and Clinton Wastewater Treatment Plants; prevent the pass-through of pollutants into receiving waters; and enable MWRA to beneficially reuse its residuals for the production of fertilizer.

Staff estimate that approximately 3% of the total flow to the treatment plants comes from permitted facilities, but this flow represents a significantly higher proportion of toxics discharged to the system. TRAC currently oversees approximately 1,250 permitted sewer users. There were 203 facilities that met MWRA's definition of Significant Industrial User (SIU) during FY18. SIUs

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

Significant Industrial Users

As mentioned above, there were 203 industries designated as SIUs in MWRA's sewer service areas during FY18. An SIU is a sewer user subject to Federal Categorical standards such as metal plater, or has a flow equal to or above 25,000 gallons per day, or has a reasonable potential to violate MWRA's regulations. By the end of FY18, the number of SIUs in the District dropped to 195. The number of SIUs can vary during the year as a result of companies going out of business, a change in their pretreatment process, or a new company being added. TRAC met EPA's requirements for inspections and sampling in FY18, inspecting all of the 203 SIUs and sampling 176 SIUs. In FY18, 24 SIUs were not sampled. Five discharging SIUs were not monitored because they either did not discharge during the year (two industries) or they are no longer discharging and the permit was terminated (three industries). Nineteen SIUs hold non-discharging SIU permits, so should not discharge and therefore cannot be sampled by MWRA.



Figure 1. First inspection of a new industry in MWRA's service area.

Pursuant to MWRA's Deer Island NPDES permit, EPA requires TRAC to issue permits to 90% of MWRA's SIUs within 120 days of the industries' current permit expiration dates, or MWRA's receipt of a Sewer Use Discharge Permit Application, (whichever is later) and 100% within 180 days. TRAC issued 61% of SIU permits (54 permits) within 120 days and 90% of permits (79 permits) within 180 days, short of the EPA requirements due to significant staff turnover, including the retirement of the TRAC Director. Staff are working diligently to comply with the EPA requirements going forward; at the beginning of the second quarter of FY19, TRAC is on target to have at least 90% of SIU permits ready to be issued with 120 days. Typically, there are some SIU permits that exceed the 180-day time period for issuance for reasons beyond

MWRA's control. The new Clinton NPDES permit, effective March 1, 2017, requires staff to issue all permits within 90 days of their application received dates or previous expiration dates, whichever is later. Three permits were issued to industries in the Clinton area after the effective date of the NPDES permit. TRAC issued all three permits within the 90-day timeframe.

Facilities remain covered by their existing permits while their renewal permits are pending as long as they have submitted a timely application. Delay in permit issuance during FY18 was primarily due to staff turnover, specifically Industrial Coordinator (i.e., permit writer) vacancies and the retirement and replacement of the Director of TRAC. Several permits were also delayed pending payment of permit fees and changes in the facilities' categories or SIU status. Permit issuance delays were more pronounced in FY18 than a typical year. During a typical year, a few permits are not renewed within required time frames due to facility category changes and late permit fee payment.

Inspections and Monitoring Programs

In addition to close regulation of the SIUs, staff are responsible for permitting, inspecting, and monitoring a variety of other types of facilities to minimize the discharge of toxics to the sewer and assist other MWRA programs. In FY18, TRAC staff conducted 203 annual SIU inspections, an additional 1,133 industrial/commercial facility inspections of other regulated industries, 136 inspections associated with the septage program, including inspections of haulers and septage receiving sites, and 1,129 inspections of oil/water separators. There are 11 septage receiving sites and more than 4,500 gas/oil separators within MWRA's service area.



Figure 2. Inspection of a gas/oil separator.

TRAC's monitoring staff conducted 1,522 sampling events to characterize wastewater flow from SIU and non-SIU permitted facilities. In addition, TRAC's monitoring staff conducted an additional 1,353 monitoring events to support MWRA's NPDES permits, support MWRA's local limits program, other MWRA projects, and to evaluate discharges to the sewer in response to emergencies.

Enforcement Program

This year, the total number of SIUs in Significant Noncompliance (SNC)¹ was 34, a decrease from the 35 SIUs in SNC in FY18. MWRA continues to hold annual educational meetings with SIUs to review and reinforce methods for maintaining compliance. The FY19 meetings are scheduled for October 31 and November 1 at MWRA's Chelsea facility. Credits for attending the seminar are DEP-approved for Operator License training. Last year, a total of 88 people from 60 of MWRA's SIUs attended the meetings over two days.

In FY18, TRAC issued a total of 261 early enforcement actions (Notices of Violations and Traps Warning Letters) to industrial and commercial facilities (compared to 271 in FY17), and 46 higher-level enforcement actions (Orders and Penalty Assessment Notices) were issued in response to a variety of persistent discharge and reporting violations, compared to 61 in FY17.

TRAC assessed and collected a total of \$1,000 in penalties in FY18 against permitted sewer users (compared to \$184,250 assessed and \$122,750 collected in FY17). The amount of penalties assessed and collected can vary significantly from year to year as a result of the timing of the penalty issuance, assessment of the penalty, negotiations, and collection.

¹ MWRA is required to annually update EPA regarding Significant Industrial Users that meet EPA's definition of Significant Noncompliance. Each industrial user is evaluated for Significant Noncompliance four times during the year. MWRA evaluates each SIU based on discharge and reporting requirements.

Local Limits

On March 1, 2017 a new NPDES permit for the Clinton Wastewater Treatment Plant went into effect. The permit required TRAC to review the local limits for the Clinton sewerage service area and to submit a report on its review to EPA within 180 days of the permit's effective date. Staff conducted an analysis and a report was submitted on August 9, 2017. In order to provide uniform limits and regulatory certainty for parameters that were previously regulated on a facility by facility basis, staff recommended establishment of local limits in line with those set for the Metropolitan sewerage service area:

- Eliminate all parameters regulated on a facility by facility basis (except formaldehyde, discussed above) and incorporate all parameters that do not have their own established limit or are prohibited into the Total Toxic Organics (TTO) list. Parameters on the TTO list cannot individually exceed 1 mg/L or in combination exceed 5 mg/L.
- Establish a formaldehyde limit of 9 mg/L. Formaldehyde is a limit currently regulated in the Clinton sewerage service area on a facility by facility basis. Formaldehyde can pose a fume toxicity risk to sewer workers in large enough quantities. Therefore, fume toxicity was used as the determining factor for establishing a formaldehyde limit, as the MWRA did in its Metropolitan Local Limits completed in 2001. The limit of 9.0 mg/l in the Metropolitan Sewerage Service Area was developed using the American Conference of Governmental Industrial Hygienists' short-term fume toxicity exposure level for formaldehyde in the air and converting that to an undiluted aqueous limit. This is the limit that is being proposed for the Clinton Local Limits also.
- Increase the fats, oils, and grease (FOG) limit from 100 mg/L to 300 mg/L. MWRA's Metropolitan sewerage service area local limit is 300 mg/L. There is a very low concentration of FOG at the Clinton Wastewater Treatment Plan and the plant can effectively remove current and increased concentrations of FOG.



Figure 3. Local limits sampling at the Intermediate Pump Station (IPS).

EPA issued the proposed Clinton sewerage service area local limits for a 30-day public comment period beginning September 28, 2018. All EPA-approved changes to the Clinton sewerage service area local limits will be incorporated in MWRA's Sewer Use Regulations (360 CMR 10.000).

Program Cost Recovery

MWRA's Incentive and Other Charges Program continues to recover a substantial portion of MWRA's costs of inspecting, monitoring, and permitting industrial sewer users. The total adjusted amount billed under the program in FY18 was \$2,201,980, a slight decrease from \$2,215,844 in

FY17. As of September 2018, collections for FY18 bills were at \$2,125,313 (compared to \$2,166,984 in FY17), approximately a 97% recovery of the adjusted amount invoiced.

Industrial Pretreatment Program Audit

On June 6 and 7, 2018, EPA Region 1 conducted an Industrial Pretreatment Program Audit at MWRA's Chelsea Facility. EPA staff reviewed nine permits; during the Audit debrief, EPA reviewed their minimal findings. A summary report documenting audit findings from EPA is still pending.

FY19 Initiatives

Sewer Use Regulations (360 CMR 10.000)

TRAC staff are in the process of reviewing and updating the Sewer Use Regulations (360 CMR 10.000). The primary driver for the review of the regulations is to incorporate EPA's dental effluent guidelines (40 CFR Part 441), promulgated on June 14, 2017. In the revisions, staff are proposing to create a new group permit for eligible dental practices: the Dental Discharges group permit. In addition to creating a new group permit for Dental Discharges, staff are reviewing existing permit and monitoring fees, at the Advisory Board's recommendation, and plan to incorporate changes into the revised regulations. The proposed regulation changes will also incorporate all EPA approved changes to the Clinton sewerage service area local limits, and other minor clarifications of the regulations to facilitate TRAC program implementation. Revised regulations will come before the Board for approval in early 2019.

Dental Discharges:

In FY19, TRAC will finalize proposed revisions to the Sewer Use Regulations (360 CMR 10.000) that incorporate a new Dental Discharges group permit and will begin to implement EPA's dental effluent guidelines. EPA's guidelines require publically owned treatment works (POTWs) with approved Pretreatment Programs to regulate dental offices with new or existing discharges of mercury amalgam. Pursuant to the federal rule, these dental facilities must submit certifications regarding their compliance with the rule. New facilities that start discharging after July 14, 2017, must submit these certifications within 90 days of beginning operations. Dental facilities operating prior to the July 14, 2017, are required to certify compliance prior to July 14, 2020. MassDEP currently manages a similar dental regulatory program within the Commonwealth of Massachusetts; the new federal regulations place the regulatory burden directly onto federally approved pretreatment programs, including MWRA. TRAC staff are in the process of developing its program to manage approximately 1,100 dental facilities in the service area and are working closely with the Massachusetts Dental Society, MassDEP and EPA to develop an appropriate regulatory program.

CROMERR Compliance:

TRAC and MIS will continue to work toward compliance with EPA's Cross Media Electronic Reporting Rule (CROMERR). MWRA's Pretreatment Information Management System (PIMS) is currently being upgraded to meet the requirements of CROMERR for data currently entered by permittees' contract laboratories. Data submitted electronically must meet certain authentication

and security requirements. MWRA is working with EPA and the PIMS vendor, Inflection Point Solutions, to utilize EPA's Shared CROMERR Services application to incorporate the additional functionality (electronic signature and Copy of Record requirements) into our current WebSMR electronic data submittal processes. MWRA anticipates that testing of the new system will begin in October 2018. A rollout of a new CROMERR compliant process will follow EPA's approval of MWRA's CROMERR application and the completion of system testing with WebSMR users. MWRA currently anticipates that the new CROMERR compliant process will be available late this calendar year.

BUDGET/FISCAL IMPACT:

TRAC's FY18 Current Expense Budget was \$4,459,617, approximately 49% (\$2,201,946) of which was recovered through permit charges and penalty collections, compared to 53% in FY17.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: October 17, 2018
SUBJECT: 2017 Deer Island Outfall Monitoring Overview



COMMITTEE: Wastewater Policy & Oversight

INFORMATION
 VOTE

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


David W. Coppes, P.E.
Chief Operating Officer

RECOMMENDATION:

For information only.

MWRA monitors the Deer Island Treatment Plant effluent, as well as the water, sediment, and health of fish and shellfish in Massachusetts and Cape Cod Bays. 2017 was the twenty-sixth consecutive year of monitoring. The Outfall Monitoring Overview annually summarizes and analyzes the results of MWRA’s monitoring for any environmental effects from Deer Island discharges. As in previous years, no adverse impacts were found. Under its current National Pollutant Discharge Elimination System (NPDES) permit for Deer Island, MWRA must submit this report to federal and state regulatory agencies by November 15th. This staff summary provides the Board with the highlights of MWRA’s Outfall Monitoring Overview for calendar year 2017. Additionally, this staff summary updates the Board on recent public outreach activities as well as efforts underway by the scientific committee that advises regulators on MWRA’s monitoring to review the scientific questions on which the monitoring is based.

DISCUSSION:

Monitoring the environment around MWRA’s Massachusetts Bay outfall is a requirement in the Deer Island Treatment Plant’s NPDES permit. Data from the monitoring studies are carefully analyzed to further the understanding of the Massachusetts Bay system and understand what, if any, impacts the outfall may have. Key monitoring results are also compared to 95 thresholds contained in MWRA’s Contingency Plan.¹ Required monitoring includes measurements of the Deer Island Treatment Plant’s effluent quality, and environmental measurements of water, sediments, and fish and shellfish. Other studies include modeling water quality and continuous monitoring of water quality using instruments on a buoy in Massachusetts Bay.

¹ The Contingency Plan is a requirement of MWRA’s NPDES discharge permit for the Deer Island Treatment Plant. It contains a series of more than 20 effluent thresholds and more than 70 numeric thresholds (for example, annual average chlorophyll levels near the outfall) calculated from MWRA’s environmental monitoring data. An exceedance of a threshold requires rapid notification of EPA, DEP, the Science Advisory Panel, and the public. Some exceedances (for example, red tide), can lead to enhanced sampling for further evaluation of the event.

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

2017 was the 17th year of monitoring since the outfall came on-line and was yet another year with no adverse effects from the discharge in the areas monitored. A single Contingency Plan threshold was exceeded for the abundance of cells of the algae associated with red tide in June and July. The cells did not reach shore in numbers sufficient to close shellfish beds, and there appears to be no connection between the event and the outfall discharge. Meanwhile, Boston Harbor continues to see substantial improvements.

Summary of Effluent Quality Monitoring

- In 2017, the Deer Island Treatment Plant earned a Platinum 11 Peak Performance Award from the National Association of Clean Water Agencies for eleven years of 100% compliance with permit effluent limits;
- After two years of drought in 2015 and 2016, rainfall in 2017 was about average for the area at just over 43 inches. Mean effluent flow from Deer Island in 2017 increased over the 281 MGD observed in 2016 to 328 MGD;
- Despite higher flows in 2017 than the previous two years, virtually all flow (99%) received full primary and secondary treatment;
- Total Suspended Solids loads from effluent were 15.5 tons/day in 2017, less than 10% of the solids load discharged in the early 1990s (Figure 1);
- Metals loads in Deer Island effluent also remained low in 2017 (Figure 2). Metals and organic contaminant (*e.g.*, PCBs) loads in MWRA effluent are much less than were projected by EPA in the late 1980s;
- Improved solids and contaminant removals at Deer Island since 2005 are mainly due to treatment process improvements made possible by the ability to pump sludge to the Pelletizing Plant (with the completion of the Braintree-Weymouth Tunnel); and
- The total effluent nitrogen load in 2017 (11,738 metric tons) was lower than that measured in 2016 (Figure 3). The 2016 load, at 12,448 metric tons was 99.6% of the Contingency Plan caution threshold, 12,500 metric tons. Monitoring results (for example, a lack of intense algal blooms and the maintenance of healthy dissolved oxygen levels) confirm that MWRA's nitrogen discharge has not had an adverse environmental impact in Massachusetts Bay. Permit-required computer modeling of water quality in Massachusetts Bay was conducted during 2017, artificially introducing a 20% increase in effluent nitrogen over the observed 2016 nitrogen loads. Modeling results indicated this would have negligible impacts. It is important to note that the caution threshold was arbitrarily set at 90% of an estimated nitrogen load for the year 2020 (14,000 metric tons/year), and actual loads remain well below that estimate.

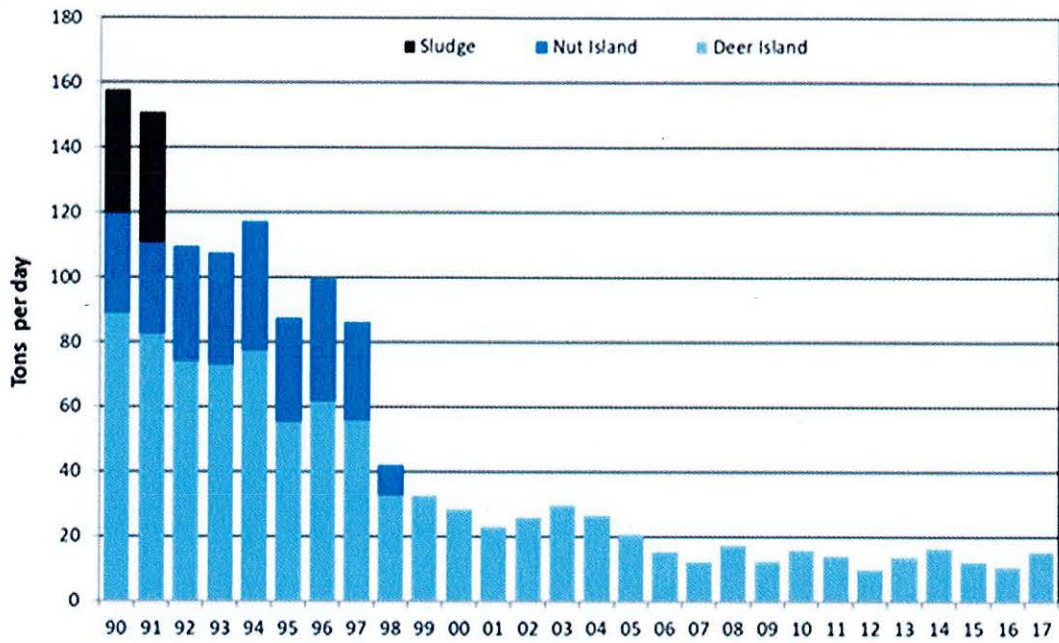


Figure 1. Annual solids discharges. Solids discharges remained extremely low during 2017.

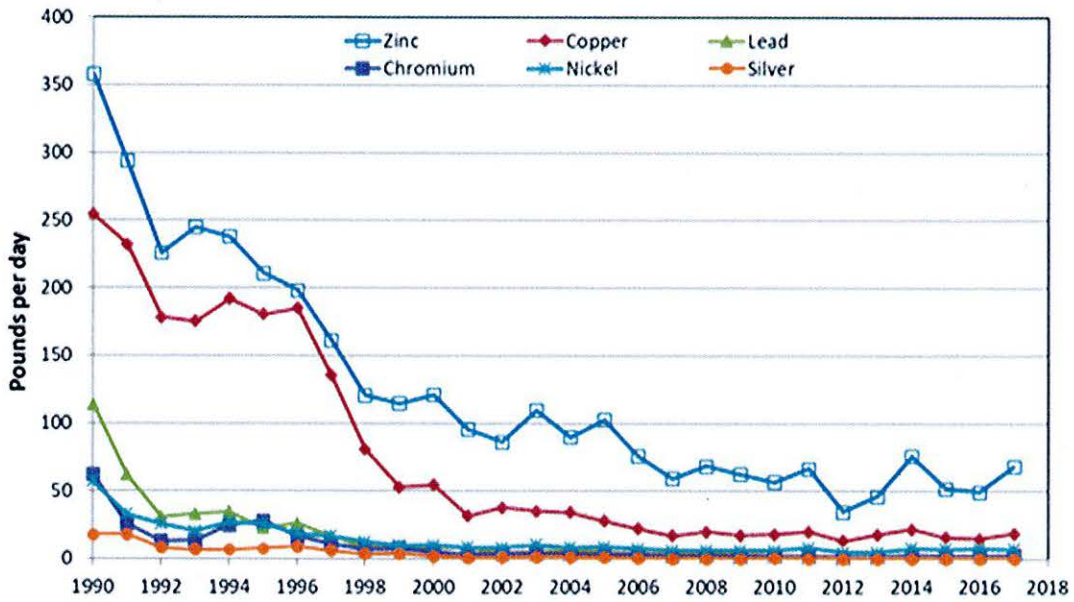


Figure 2. Annual effluent metals discharges. Loads of metals remained extremely low during 2017.

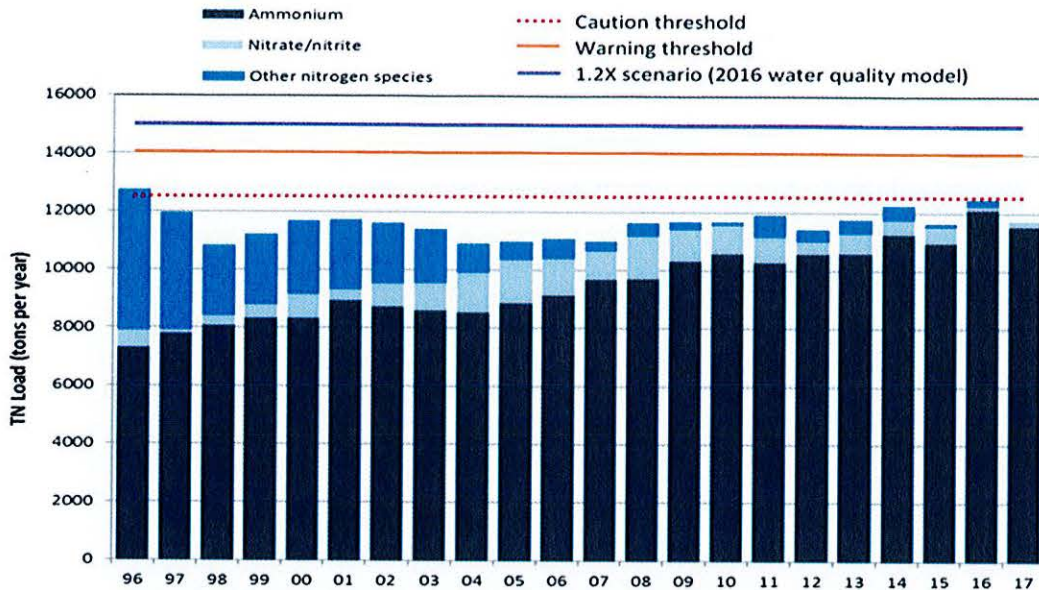


Figure 3. Annual nitrogen discharges. Effluent nitrogen loads were lower in 2017 than in 2016.

Outfall Monitoring Results

Results of 2017 monitoring in Massachusetts Bay found that:

- No adverse impacts of the outfall discharge on water quality were identified in Massachusetts or Cape Cod Bays;
- Plankton communities remain diverse and normal;
- Flounder liver disease remains low;
- The seafloor animal community is healthy and diverse; and
- Periodic (every third year) analyses of potentially toxic contaminants in sediments near the outfall document that contaminant concentrations are not increasing as a result of effluent discharge. For many contaminants, concentrations in 2017 were lower than those observed in previous years.

Water Quality Monitoring

Nutrients

Monitoring in the water column (Figure 4) focuses on the potential impact of nitrogen discharged by the outfall because only about 30% of nitrogen is removed during treatment. The monitoring was designed to address concerns about whether nitrogen could increase blooms of harmful algal species, change the types or amount of plankton (adversely impacting the food web), or cause excess algal growth, which could decrease the amount of oxygen in the water.

In 2017, plankton communities in the bays were normal, with no large phytoplankton blooms observed. A low-level offshore bloom of *Alexandrium catenella*, the algae responsible for red tides, was observed in June and July. While the cells apparently did not reach shore and did not result in Massachusetts Bay shellfish bed closures, abundances at stations near the outfall (the “nearfield”) were high enough to trigger a Contingency Plan threshold exceedance. There was no evidence the occurrence was related to the outfall discharge. All indications are that a small population of cells originating from Maine and New Hampshire waters was transported by winds and currents into offshore Massachusetts Bay, as has been seen in many years. Once present in offshore waters, the red tide cells persisted there for a few weeks while being kept offshore by favorable wind patterns.



Figure 4. Water quality sampling off Deer Island.

Dissolved Oxygen

Dissolved oxygen (DO) levels in the water near the outfall (See Figure 5) were healthy throughout 2017, with similar healthy oxygen levels observed throughout Massachusetts Bay. The decrease from winter into summer is normal, and in 2017 continued into October.

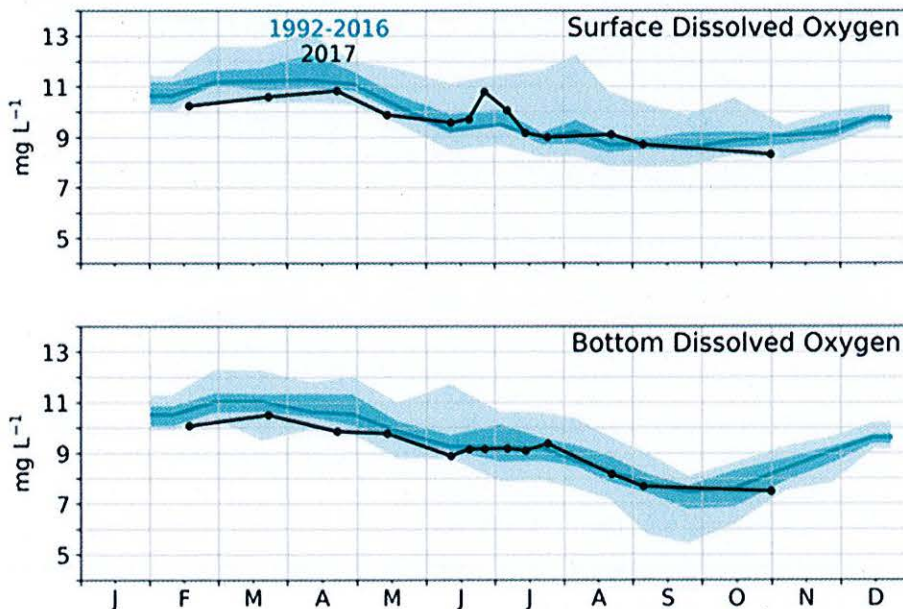


Figure 5. Dissolved oxygen in 2017 (black lines) at MWRA monitoring stations N18, approximately 1 kilometer from the outfall, compared to data since 1992. Results from 1992-2016 are in blue; blue line is the 50th percentile, the darker blue shading spans the 25th to 75th percentiles, and the lighter blue shading spans the range.

The Center for Coastal Studies in Provincetown is collaborating with MWRA to monitor nutrients and plankton in Cape Cod Bay, while independently continuing its decades-long studies of critically endangered northern Right Whales. 2017 was a discouraging year for the right whale population generally, with 17 confirmed deaths and only 5 calves born. However, observations in Cape Cod Bay increased over 2016 (Figure 6), including a record for the number of individual whales (198) identified on a single survey day in April 2017.

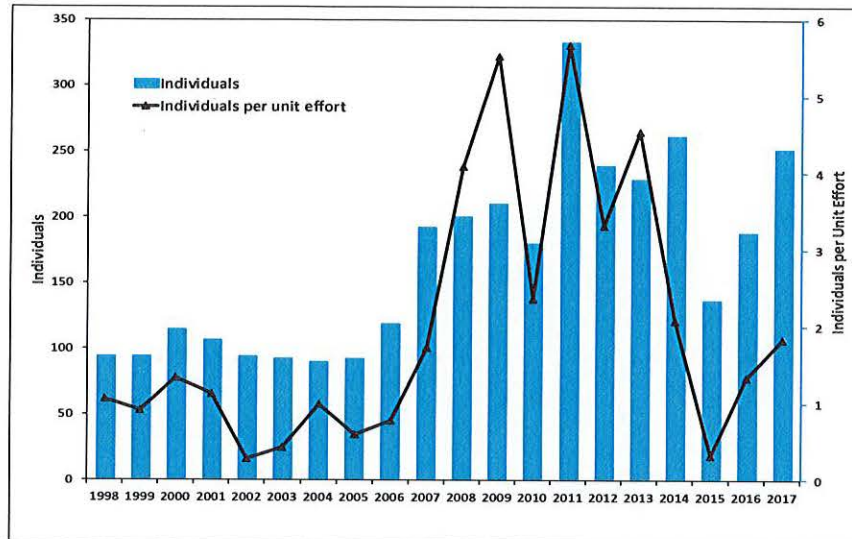


Figure 6. Right Whale sightings in Cape Cod Bay, 1998-2017. Figure from the Center for Coastal Studies. Bars represent the number of different whales observed in Cape Cod Bay each year. The Individuals Per Unit Effort line represents the numbers of whales observed per 100 kilometers of observation.

Focus on nutrient enrichment and impacts in Boston Harbor and Massachusetts Bay

Nutrients, especially nitrogen and phosphorus, are essential for the growth of all plants, including marine algae and seagrasses. In excess, nutrients, particularly nitrogen, can overstimulate marine plant growth, and when those algal cells die, they sink to the bottom, using up oxygen as they decompose. Excess phytoplankton growth and depressed levels of dissolved oxygen are the major impacts of nutrient over-enrichment, also known as eutrophication.

Prior to the Boston Harbor Cleanup Project, Boston Harbor suffered from very eutrophic conditions. Alleviating eutrophication in the harbor without initiating degraded conditions in Massachusetts Bay was a primary goal of the wastewater treatment improvements and outfall relocation.

The 2017 *Overview* contains a special chapter addressing eutrophication issues, documenting that the expected recovery in Boston Harbor has occurred without degrading offshore environments.

As shown in Figure 3, on Page 4, ammonium makes up the majority of nitrogen in MWRA's effluent. Figure 7 (see next page) documents that ammonium levels at stations in Boston's outer Harbor decreased by about 80% after the discharge moved offshore. As expected, increased concentrations were measured in the immediate vicinity of the outfall. Those increases in ammonium concentrations resulting from the Massachusetts Bay discharge have been limited in both magnitude and geographic extent. Large increases are confined to areas within a kilometer of the discharge (e.g. station N18), and changes are undetectable more than 10 or 20 kilometers from the discharge.

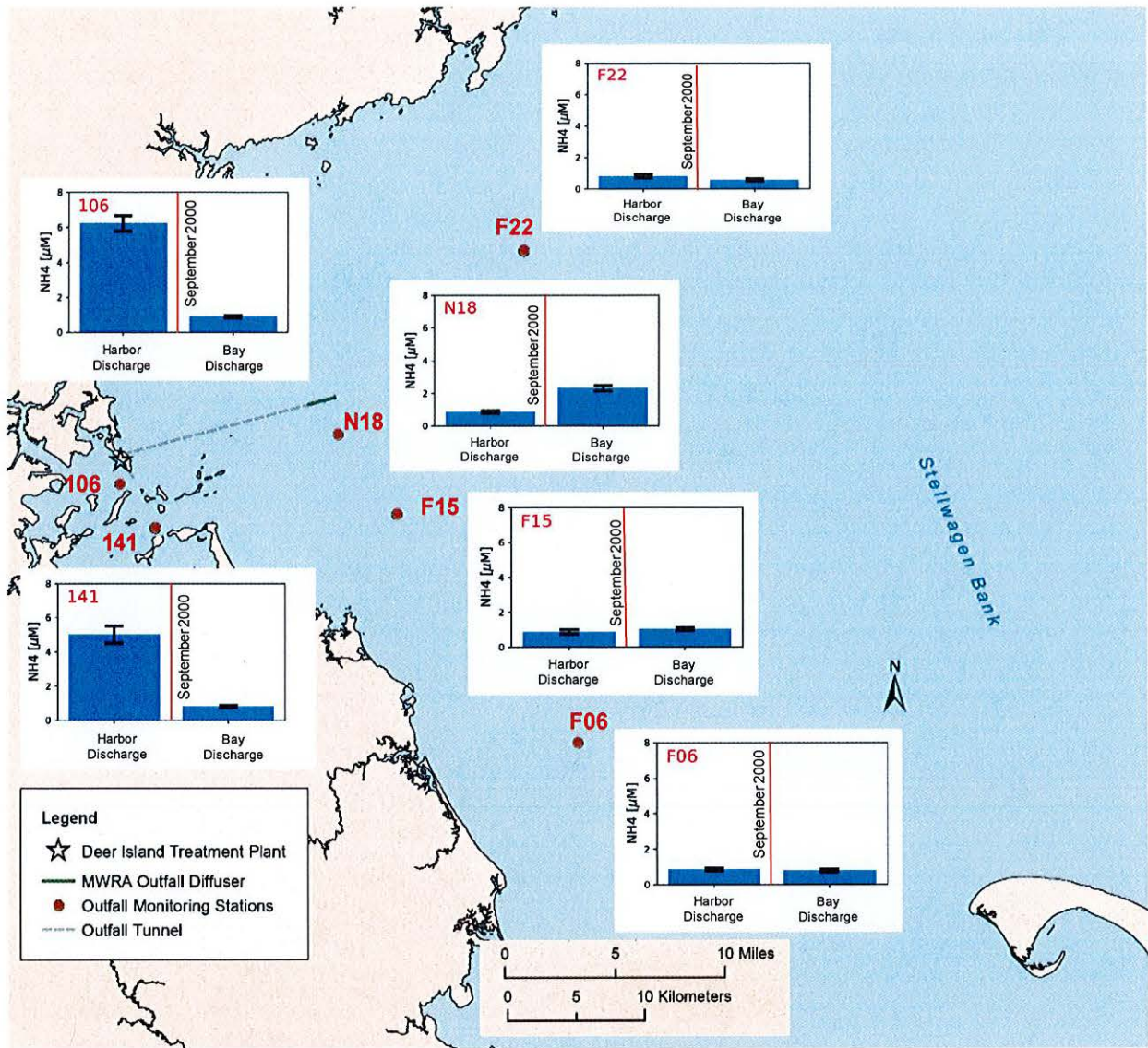


Figure 7. Average ammonium levels in 1992-September 2000, when MWRA's effluent discharge was in Boston Harbor, compared to average concentrations since the discharge moved to Massachusetts Bay. Error bars are +/- one standard error.

Through the 1990s when effluent discharge was still within Boston Harbor, one symptom of eutrophication was seen in strong summertime blooms of algae in the water column, which often discolored the water and persisted for weeks. As seen in Figure 8 (see next page), summertime chlorophyll, a measure of algal biomass, decreased in Boston Harbor after the discharge moved offshore. No changes in summer chlorophyll levels have been observed in Massachusetts Bay, where summer chlorophyll levels are naturally lower than in the shallow water of Boston Harbor.

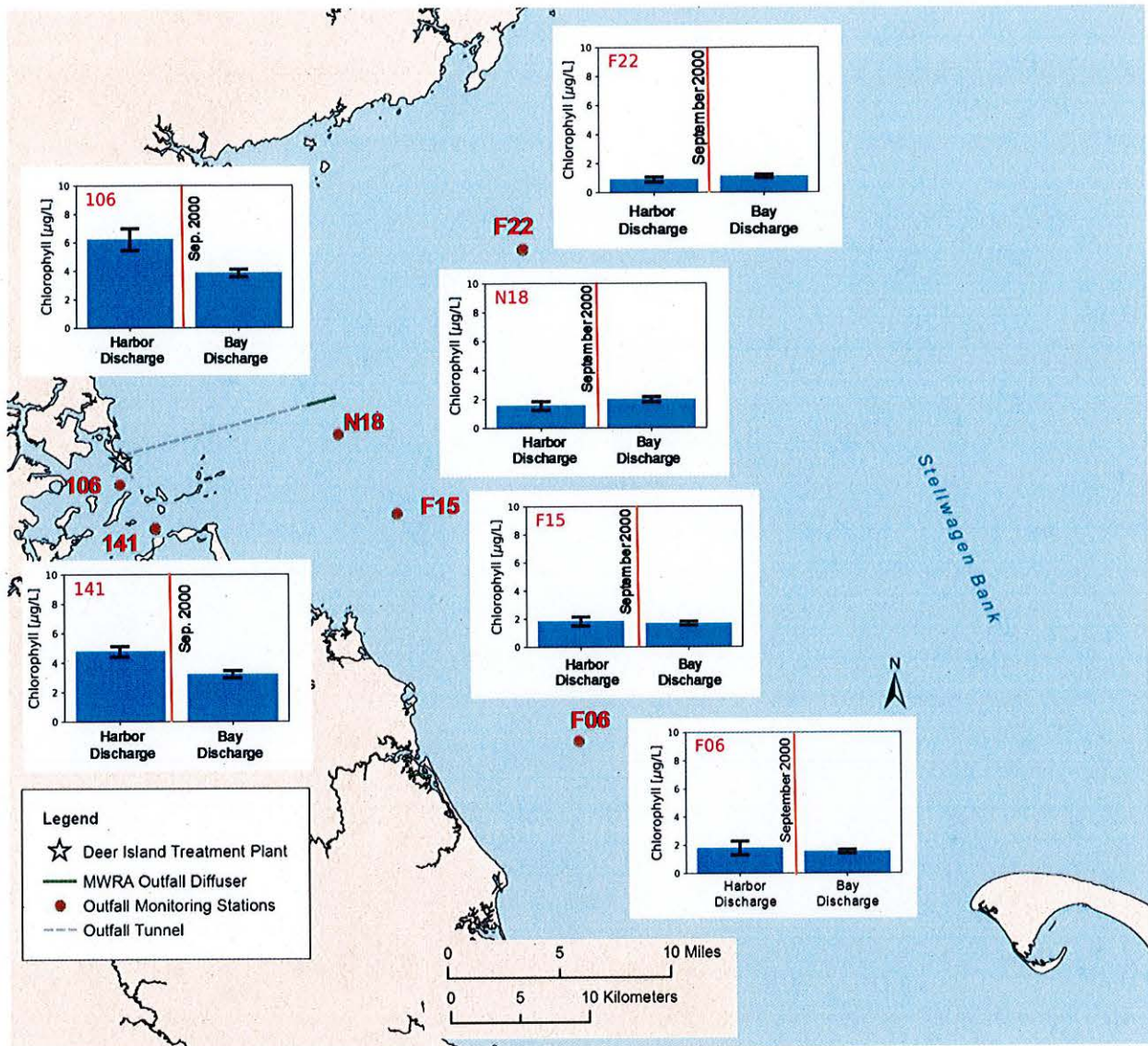


Figure 8. Average summer (May through August) chlorophyll levels in 1992-September 2000, when MWRA's effluent discharge was in Boston Harbor, compared to average concentrations since the discharge moved to Massachusetts Bay. Error bars are \pm one standard error.

Dissolved oxygen results (not shown) show similar patterns, with higher dissolved oxygen concentrations measured in Boston Harbor and no changes seen in Massachusetts Bay, even at stations nearest the outfall discharge.

Monitoring Sediments near the Outfall

Sea-floor habitat (the benthos) is a major component of a healthy marine ecosystem and is of particular interest in studies of pollutant effects because many contaminants ultimately end up in the sediments. MWRA's benthic (sea-floor) monitoring assesses the health of animal communities and the concentrations of toxic contaminants in sediments (Figure 9). Studies of the animal communities living in mud find healthy, diverse groups of animals (worms, mollusks, crustaceans) normal to New England. Similar conditions were observed in 2017 monitoring.

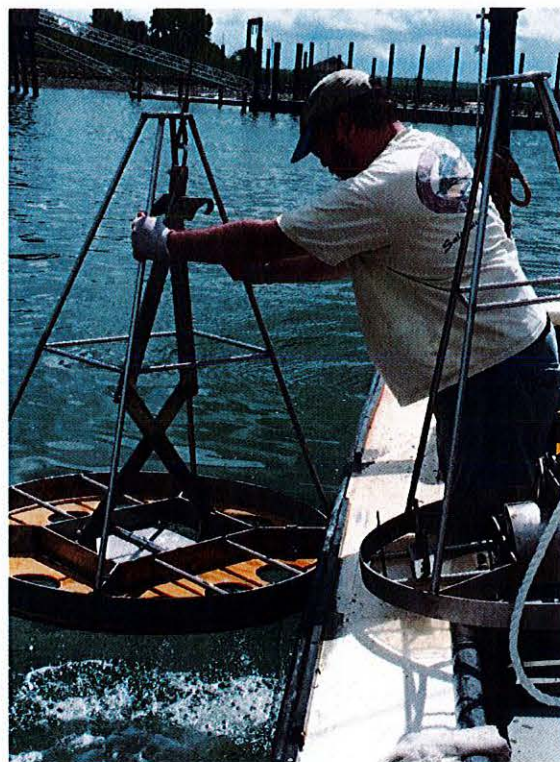


Figure 9. Collecting bottom sediment samples in Boston Harbor.

Contaminants are monitored in sediments every third year, including 2017. As has been seen in previous monitoring, higher levels of contaminants were associated with fine-grained sediments and with proximity to Boston Harbor, which is the historic contaminant source. Concentrations of most sediment contaminants in 2017 were lower than those in earlier years (Figure 10). In fact, for 22 of the 26 sediment contaminants for which Contingency Plan thresholds have been established, average 2017 concentrations in sediments in the vicinity of the discharge were lower than the lowest annual average measured there between 1992 and September 2000, when effluent discharges were still in Boston Harbor.

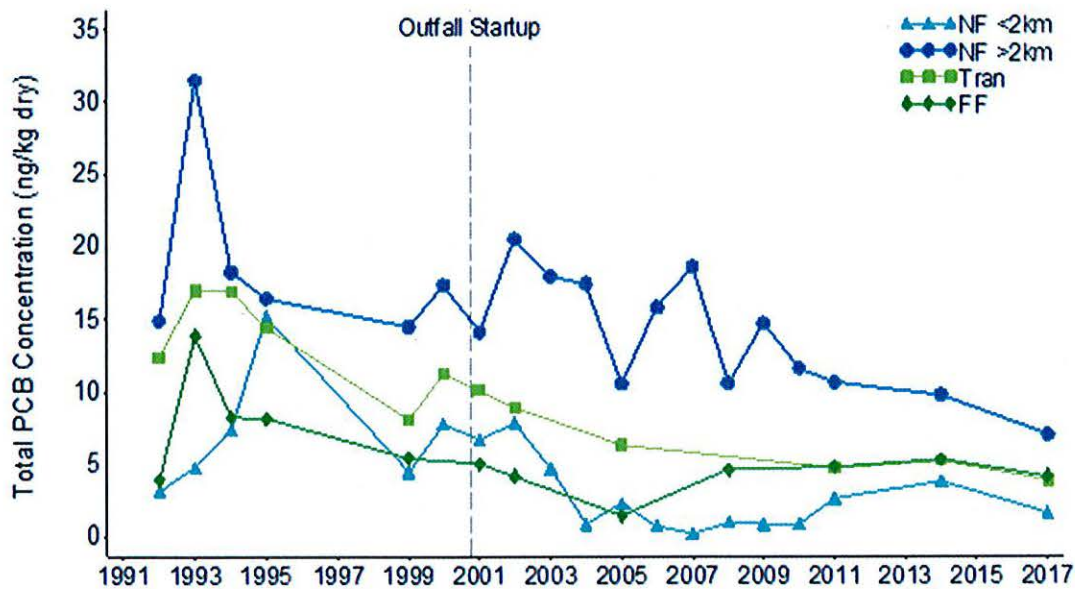


Figure 10. Average PCB concentrations in sediments have decreased since the early 1990s.

Flounder Monitoring

Because flounder live in close contact with the bottom sediments, their health, especially rates of liver disease, is an indication of the effects of contaminants in the sea floor. During the 1970s and 1980s, fin rot and liver disease associated with exposure to pollutants were common in winter flounder taken from Boston Harbor. That sampling program, adopted by MWRA (Figure 11), is ongoing, and has documented substantial declines in tumor precursors as the flounder population recovered in Boston Harbor, with no increases observed in fish caught near the Mass Bay outfall (Figure 12).



Figure 11. Processing flounder off Deer Island Light

Tumor precursors increased in flounder from Deer Island Flats in 2015 and 2016 while remaining relatively constant elsewhere. The reasons for the two-year increase in fish from Deer Island are unclear, but given that the Harbor discharge ended in 2000, are not attributable to the outfall. In 2017 and again in 2018 (not shown) the level of tumor precursors observed in Deer Island fish decreased to levels similar to those observed in 2012-2014. Actual liver tumors have not been observed in flounder from Boston Harbor since 2004, and tumors have never been observed in flounder caught near the outfall.

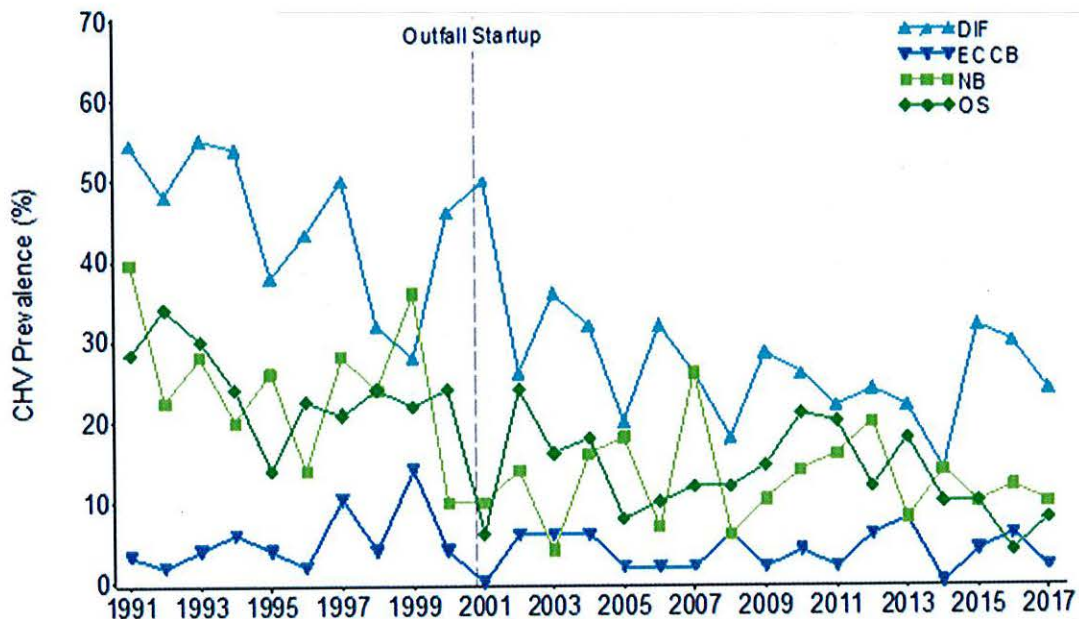


Figure 12. Prevalence of liver tumor precursors 1991-2017 in winter flounder from Deer Island (DIF), eastern Cape Cod Bay (ECCB), off Nantasket Beach (NB) and near MWRA's outfall (OS).

Contingency Plan Thresholds

Except for the red tide algae exceedance observed in May and June, all other Contingency Plan thresholds were met in 2017. This includes all effluent quality thresholds. The ambient monitoring measurements of algae biomass, dissolved oxygen, sediment oxygenation, and flounder liver disease were all normal. During 2017, regulators and the OMSAP agreed to MWRA's recommendation to delete the *Phaeocystis pouchetii* and high sediment diversity thresholds.

Information outreach efforts

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

- Presented beach and river monitoring results at a number of meetings of regional watershed associations and the Wastewater Advisory Committee;
- Presented monitoring results showing decreasing nutrient levels in Boston Harbor to an EPA-sponsored meeting of regional seagrass researchers;
- Met periodically with researchers and students from local universities (for example, UMass Boston and Northeastern University) and high school groups (for example, the Student Conservation Association) to share results of MWRA's monitoring, learn about current academic research, and discuss emerging issues of environmental concern (for example, climate change and ocean acidification);
- Participated in advisory and oversight committees for regional monitoring and outreach groups, including the MIT Sea Grant College program, the Massachusetts Bays National Estuaries Program, and the Northeast Regional Association of Ocean Observing Systems. Staff promote outreach and information gathering on issues important to MWRA;
- Participated in the development of the Stellwagen Bank National Marine Sanctuary 10-year condition report, which relies heavily on MWRA monitoring results to document excellent water quality in Massachusetts Bay and the Sanctuary;
- In November 2017 co-chaired (with scientists from other regions) a session on the restoration of urban estuaries at the Coastal and Estuarine Research Federation conference in Providence. Four presentations derived from MWRA's monitoring studies were presented;
- Presented a 25-year summary of MWRA nutrient monitoring at the 2018 Water Environment Federation Technical Exhibition and Conference (WEFTEC);
- Published an informational pamphlet (distributed to the Board in 2017), which summarizes MWRA bacterial monitoring.
- At the Board's request, staff produced a mailer "How Clean is Boston Harbor," which was distributed to households in the wastewater service area – in April 2018.

Ambient Monitoring Symposium

MWRA's NPDES permit for the Deer Island Treatment Plant and outfall chartered an Outfall Monitoring Science Advisory Panel (OMSAP) to advise EPA and DEP on technical topics related to Ambient Monitoring. OMSAP itself is advised on public response to environmental issues related to the outfall by the Public Interest Advisory Committee (PIAC), chaired by Save the Harbor/Save the Bay.

The 33 questions that the monitoring program was designed to address (*e.g.*, “Has the abundance of nuisance or noxious phytoplankton species changed in the vicinity of the outfall?”) were developed by regulators, MWRA, and the OMSAP’s predecessor Outfall Monitoring Task Force. Monitoring plan revisions spearheaded by MWRA in 2003-4 and 2009-10 documented that 9 of the questions had been fully addressed by existing monitoring data, and the relevant studies were ended.

Interest has been building in recent years in OMSAP and PIAC to review the remaining Ambient Monitoring Plan questions in light of the data that have been obtained since 2010, and also in light of environmental issues that have emerged since the early 1990s. The goals are to identify which questions have been fully addressed, for which associated monitoring might stop, as well as to identify new questions, related to potential impacts of MWRA’s outfall discharge, that are not currently addressed.

OMSAP, PIAC, EPA and DEP, with support from MWRA staff, are planning a public workshop on November 13, 2018, to bring together environmental scientists who have not been involved in the monitoring, to review the monitoring and emerging environmental issues, and start work on developing possible future monitoring questions. During the planning discussions for this workshop, the question of climate change and ocean acidification potentially changing the current minimal impacts of effluent discharge has been identified as a main topic for discussion. A second main topic will be emerging contaminants that are not addressed by current monitoring, for example microplastics and pharmaceuticals and personal care products.

BUDGET/FISCAL IMPACT:

In FY10, before the changes to the monitoring plan were implemented, the cost of professional services for a year of outfall monitoring was \$2.35 million. The FY19 Current Expense Budget for required harbor and outfall monitoring, including the water column, sediment, fish and shellfish, instrumented buoys, and water quality modeling, is \$1.4 million, reflecting the savings resulting from changes to the monitoring requirements.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: October 17, 2018
SUBJECT: Thermal and Hydro Power Plant Maintenance
Contract S578
IPC Lydon, LLC.



COMMITTEE: Wastewater Policy & Oversight


 INFORMATION

 X VOTE



Michele S. Gillen
Director of Administration

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



David W. Coppes, P.E.
Chief Operating Officer

RECOMMENDATION:

To approve the award of Contract S578, Thermal and Hydro Power Plant Maintenance, Deer Island Treatment Plant, to the lowest responsible and eligible bidder, IPC Lydon, LLC, and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of \$7,961,150 for a contract term of 730 calendar days from the Notice to Proceed.

DISCUSSION:

This contract includes furnishing all labor, Factory Authorized Representative services, materials, equipment and incidentals necessary to repair, maintain and replace as necessary all equipment related steam generation and heating systems at the Thermal Plant and hydroelectric turbines at the Deer Island Treatment Plant. In order to consolidate repair and maintenance of all MWRA-owned hydroelectric turbines into a single contract, this contract also includes the repair and maintenance of the hydroelectric turbines at the Loring Road Covered Storage Facility in Weston, the Cosgrove Intake Facility in Clinton, and the Oakdale Power Station in West Boylston.

The Thermal/Power Plant on Deer Island, which has been in service since 1998, contains two high-pressure power boilers that generate steam energy, which is used for facility heating, process heating, and electrical generation. Both boilers can be fired with digester gas (methane), No. 2 diesel fuel oil, or a combination of both. The high-pressure steam from the boilers is directed to the main 18-megawatt steam turbine generator and a 1.2-megawatt back-pressure steam turbine generator to generate electricity. The electric power generated by the steam turbines varies in relation to the plant's heating demand and digester gas production. The low-pressure exhaust steam from the steam turbines provides facility and process heating through Deer Island's hot water heat loop.

The two Deer Island Hydro turbines have been in service since 2001. They use treated plant effluent to generate electricity before the effluent falls down into the outfall tunnel. The electric power generated by the hydro turbines varies in relation to total plant flow and ocean tide levels.

The total annual economic benefit realized by MWRA (electric and thermal) from the steam turbine and hydroelectric turbines located on Deer Island is approximately \$17.5 million; economic benefit from the hydroelectric turbines located at the other facilities included in this contract is approximately \$500,000; for a total economic benefit of over \$18 million from the equipment maintained under this contract. This contract will provide the required maintenance services to ensure the overall reliability and operation of the equipment.

In addition, state regulations require that steam boilers and appurtenances be thoroughly inspected externally and internally at least once a year in accordance with the National Board Inspection Code. These required inspections, along with preventive maintenance of the boilers, steam turbine generators, hydro turbine generators and associated equipment, are essential to ensuring the continued safe and reliable operation of these critical systems, and their optimum performance.

The Contractor will provide scheduled annual inspection and maintenance services, emergency and non-emergency repair services, replacement parts and factory authorized vendor services at each of the facilities listed above. In addition, the following major work will be performed:

- Deer Island Thermal Plant Steam Turbine Generator: The existing Steam Turbine Generator (STG) has been in service for over 20 years. The STG is in need of a major overhaul to provide continued and safe operation. The contractor will perform a major overhaul on the STG and refurbish the associated STG trip throttle valve, both of which require factory representative oversight to complete this highly specialized work. The overhaul also includes replacement parts and labor, with an estimated value of \$2,200,000 in total. Staff are in the process of procuring consultant services to perform a combined heat and power evaluation which may change this equipment in the future. However, this maintenance is needed at this time to assure this important equipment will reliably operate until that time.
- Loring Road Covered Storage Facility: This facility has a 200kW Leffel hydro turbine with a Marelli generator that was installed in 2011. This contract will provide maintenance services as required.
- Cosgrove Intake Facility: The facility has two 1960s 1.2 MW Kaplan Style controllable pitch, Leffel turbines accompanied by 4160 Volt G.E generators. This contract will provide for cleaning of the G.E. generators using a less invasive dry-ice method accompanied by an overhaul of the turbines' gate shaft governors. Governor controls were upgraded in 2016 with a digital retrofit, but to assure the units' accuracy, a full disassemble, cleaning, and in-depth inspection of each governor with the replacement of worn parts will be performed by specially trained Factory Technicians. The cleaning and overhaul includes replacement parts and labor, with an estimated value of \$250,00 in total.
- Oakdale Power Station: The station contains a 3 MW Francis Morgan Smith turbine, circa 1940, and a Woodward governor. Under this contract, the Woodward governor will be updated with new digital controls. The new unit will allow better governor control, simplify

diagnostics, troubleshooting, and minimize maintenance. The contract also includes performance testing, final commissioning and training of MWRA staff. A full inspection and overhaul of the turbine's 48-inch pressure relief valve will also be performed under this contract. The control system update includes replacement parts and labor, with an estimated value of \$75,000 in total.

All the major work included above is considered a one-time cost as the work is required at the end of the useful life of the specified components (typically 10 to 20 years). The total one-time cost for the steam turbine and Hydro power generators listed above has an estimated cost of \$2.5 million.



Fig. 1: Two High-Pressure Steam Boilers

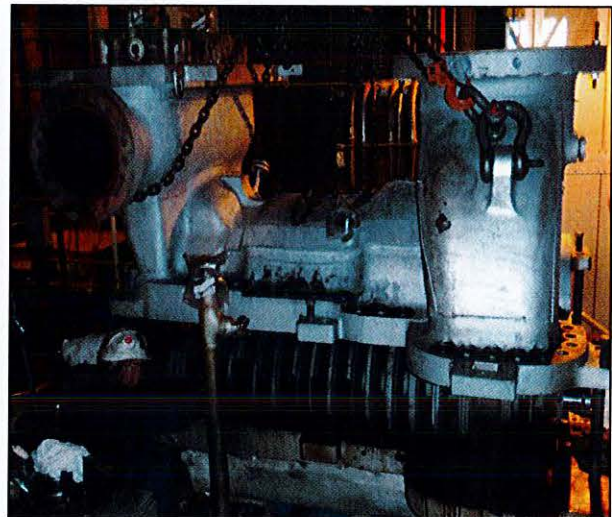


Fig. 2: 18 MW Main Steam Turbine Generator



Fig. 3: 1.2 MW Back-Pressure Steam Turbine Generator

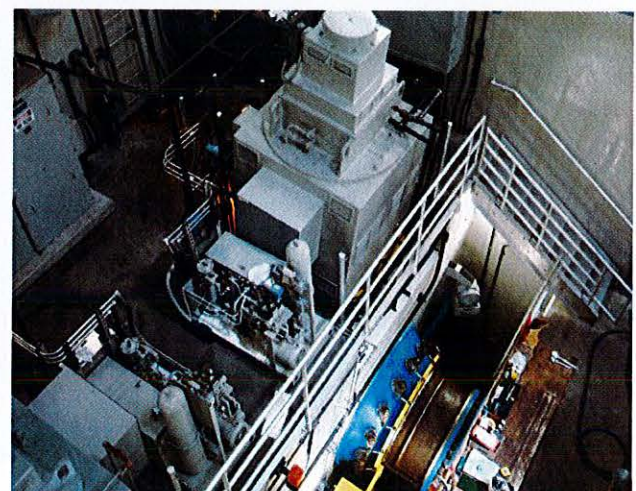


Fig. 4: Hydroelectric Turbine Generator



Fig. 5: Oakdale 3-MW Morgan Smith Turbine

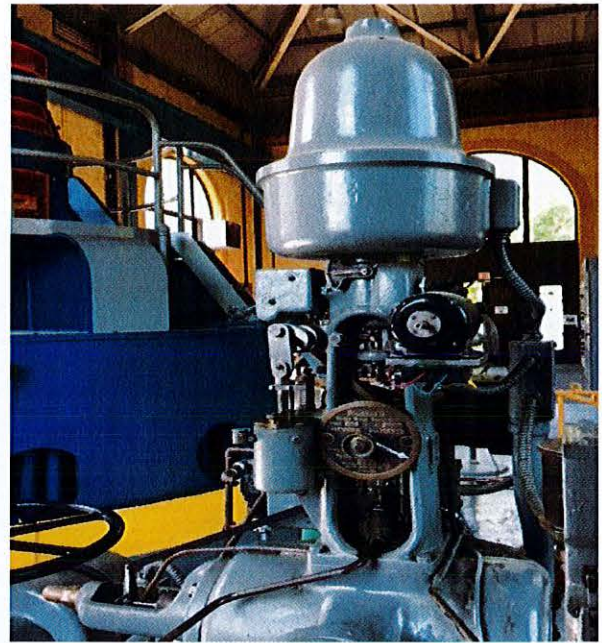


Fig. 6: G.E. Generator Mechanical Governor

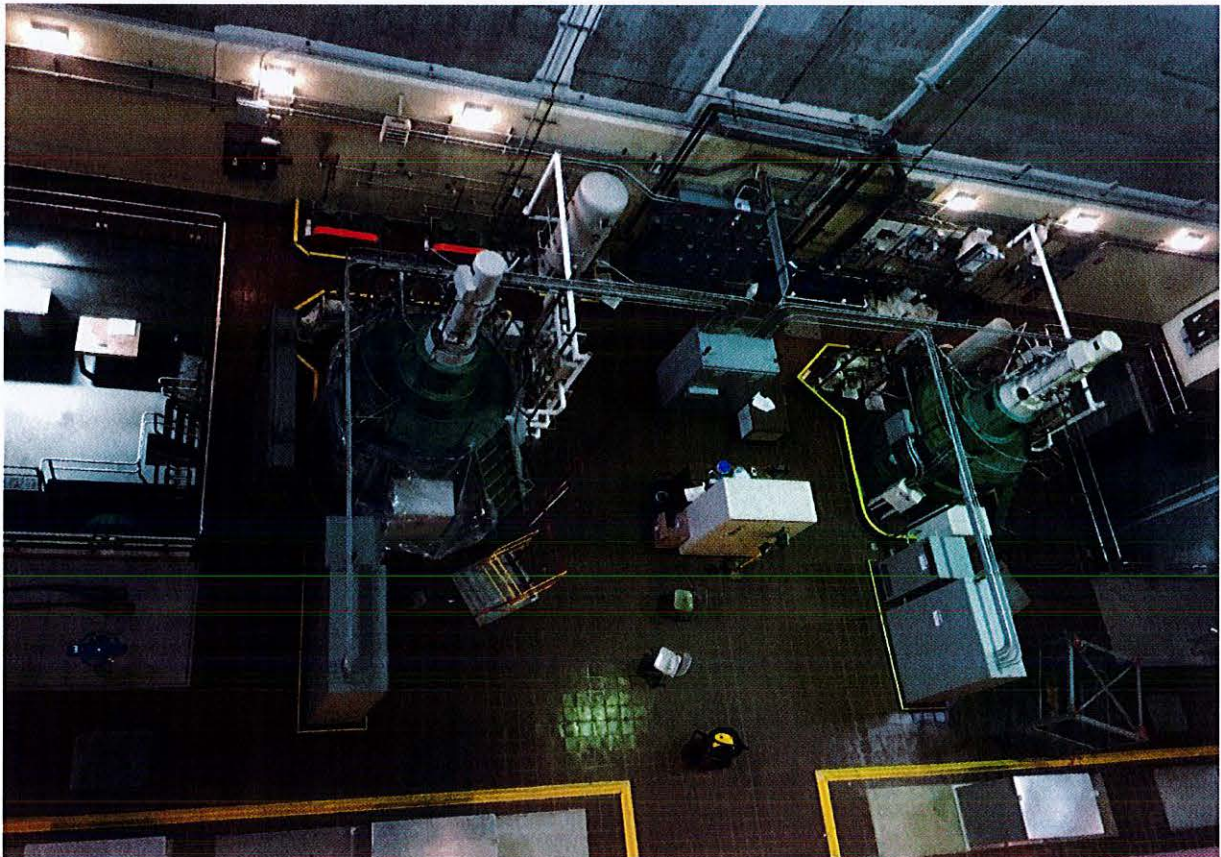


Fig. 7: Two 1.2 MW Kaplan Leffel-style Turbines

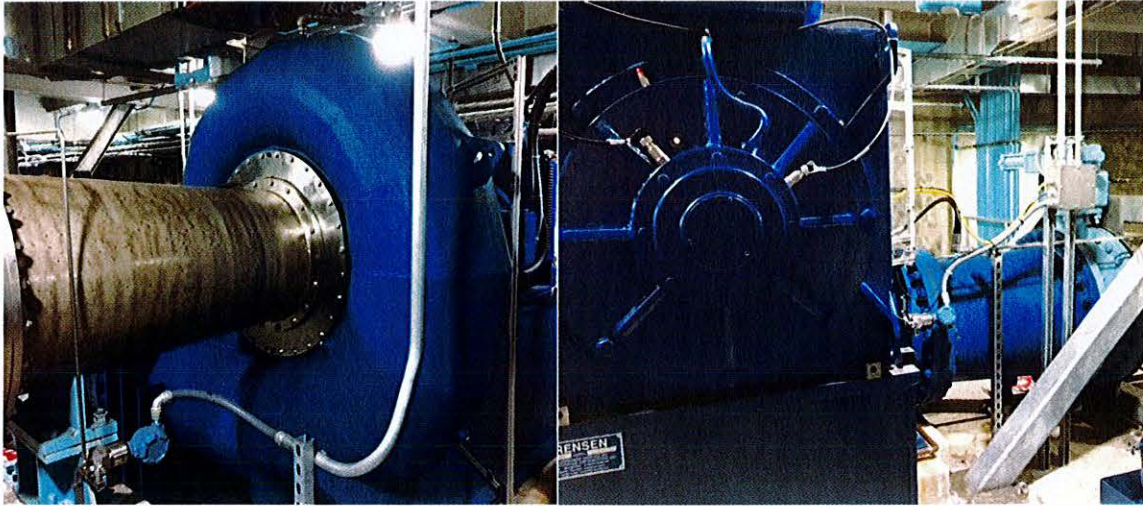


Fig. 8: 200kW Francis Turbine

The contract also includes several allowance items and unit price items that will be drawn down on an as-needed basis: emergency labor \$508,820 and non-emergency labor \$75,000; replacement parts \$1,273,800; authorized factory representative services \$380,000; and fire department detail services \$30,000, which are required when repairs are made that require welding. The maintenance scope and allowance items were developed based on reasonable assumptions and past usage from previous maintenance contracts for these systems.

Procurement Process

Contract S578 was advertised and bid in accordance Chapter 149 of the Massachusetts General Laws. Bids were opened on September 17, 2018; the results are presented below.

BIDDERS	BID PRICE
<i>Engineer's Estimate</i>	\$6,854,600
IPC Lydon, LLC	\$7,961,150
O'Connor Corporation	\$9,850,611

MWRA received two general bids as summarized above. IPC Lydon's bid was \$1,106,550 or 16.1% higher than the Engineer's Estimate. Staff determined that the major differences between the Engineer's Estimate and IPC Lydon's bid was primarily attributed to the following: cost difference received from the vendors for replacements parts for the 18MW Steam Turbine Generator (\$475,000), costs required to contract with specialized sub-contractor firms (\$130,000) and additional costs associated with performing work at the added Hydro facilities locations (\$125,000). IPC Lydon holds the current maintenance contract for the Deer Island maintenance items only, which has a two-year duration and is scheduled to expire on November 12, 2018.

References for IPC Lydon were checked and found to be favorable. Staff have determined that the bid price is reasonable, complete, and includes the payment of prevailing wages.

Staff have determined that IPC Lydon 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 IPC Lydon as the lowest responsible and eligible bidder.


BUDGET/FISCAL IMPACT:

Funding of \$1,500,000 is included in FY19 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. The FY19 CEB will realize an economic benefit of over \$18 million for the energy produced by this equipment.

MBE/WBE PARTICIPATION:

The MBE and WBE participation requirements for this contract were established at 7.24% and 3.60%, respectively.


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: October 17, 2018
SUBJECT: Supply and Delivery of Ferric Chloride to the Deer Island Treatment Plant
Kemira Water Solutions, Inc.
Bid WRA-4564

COMMITTEE: Wastewater Policy & Oversight


 INFORMATION

 X VOTE


Michele S. Gillen
Director of Administration

David Duest, Director, DIWWTP
Douglas J. Rice, Director of Procurement
Preparer/Title




David W. Coppes, P.E.
Chief Operating Officer

RECOMMENDATION:

To approve the award of Purchase Order Contract WRA-4564 for the supply and delivery of ferric chloride to the Deer Island Treatment Plant, to the lowest responsive bidder, Kemira Water Solutions, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said purchase order contract in an amount not to exceed \$1,840,000 for a period of one year, from January 1, 2019 through December 31, 2019.

DISCUSSION:

The operational performance of Deer Island's digesters has been hampered in the past by the build-up of struvite in the overflow piping, which results in constricted flow (as shown in the picture to the right). Struvite a by-product of anaerobic sludge digestion, is a crystalized compound that coats the interior surfaces of pipelines and valves.

To address this problem, staff have implemented an aggressive prevention program using chemical treatment (this contract) and a mitigation program using on-going specialized cleaning (awarded at the September 19, 2018 Board meeting).

Staff have investigated alternate chemicals and methods of treatment for use in the struvite prevention program, but have found no other viable alternatives that work either as effectively or as reliably. Staff have been using either ferrous or ferric chloride to reduce struvite formation in the digested sludge since 1998 and, in the past, have competitively bid contracts for both chemicals. Staff have determined over the years that either chemical works equally as well in the

prevention/treatment of struvite.

Currently, Deer Island uses between four and eight truckloads of ferrous chloride per week as part of its ongoing struvite prevention program. Staff estimate that approximately 2,000,000 pounds of iron will be needed during the one-year contract period.

Procurement Process

Bid WRA-4564 was advertised in the following publications: Boston Herald, Central Register, Goods & Services Bulletin, Dodge Reports, El Mundo, and Banner Publications. In addition, bids were made available for public downloading on MWRA’s e-procurement system (Event 3526) and six potential bidders were solicited through the e-Portal.

On August 28, 2018, Event 3526 closed with the following results:

Kemira Water Solutions, Inc.	Estimated dry pounds of iron	Chemical	Unit Price per dry pound of iron	Extended Bid Price
	2,200,000	Ferric Chloride	\$0.92	\$2,024,000.00*
	2,200,000	Ferrous Chloride	\$1.02	\$2,244,000.00
PVS Technologies, Inc.	Estimated dry pounds of iron	Chemical	Unit Price per dry pound of Iron	Extended Bid Price
	2,200,000	Ferric Chloride	\$1.09	\$2,398,000.00
	2,200,000	Ferrous Chloride	No Bid	No Bid

*During the review of bid results received under Bid WRA-4564, Deer Island staff determined that increased estimates from the existing contract, which were used for bidding purposes, exceeded Deer Island’s most recent current projections. Therefore, staff contacted Kemira and they agreed to lower the awarded quantity on this contract to 2,000,000 dry pounds of iron for the final award, reducing the contract cost to \$1,840,000.

Bid WRA-4564 was structured as a one-year contract similar to the existing contract, also with Kemira Water Solutions, Inc., which expires on December 31, 2018. Under the current contract, MWRA is paying a fixed unit price of \$0.745 per dry pound of iron for ferrous chloride for an annual cost of \$1,490,000. Compared to the existing contract, the cost has increased by \$0.175 per dry pound of iron (a 23.5% increase over the last contract).

This year’s price increase, according to Kemira, is a direct result of recent unprecedented increases in trucking and rail freight costs. These costs have increased between 3% to 10% since 2017 depending on the mode of transportation, carrier, and region. In addition, the supply and costs of key raw material feedstock continues to escalate and are compounded by global and regional market conditions linked to high demand for finished goods and raw material production constraints. More specifically, market prices of key raw materials for ferric and ferrous chloride have increased by up to 32% since 2017. Furthermore, the raw material cost escalation is expected

to continue for the remainder of 2018 and into 2019.

This contract award will be for the supply and delivery of ferric chloride although for the past two years, Kemira has supplied Deer Island with ferrous chloride. A representative from Kemira stated that due to different product sourcing and additional handling and storage, for this contract they elected to bid \$.10 per dry pound of iron less than ferrous chloride. The not-to-exceed amount of the contract is not a firm commitment of cost or a guarantee of purchase to the vendor; MWRA will only pay for product received.

Staff have reviewed Kemira Water Solutions, Inc.'s bid and have determined that it meets all of the requirements of the bid specifications. Therefore, staff recommend the award of this one-year purchase order contract to Kemira Water Solutions, Inc. as the lowest responsive bidder.

BUDGET/FISCAL IMPACT:

MWRA's FY19 Current Expense Budget includes \$1,336,440 based on projected quantities of approximately 1.7 million dry pounds of iron. Based on the proposed pricing of the new contract, if the usage will be at the budgeted level, there will be approximately a \$95,000 overspending for FY19. This overspending will be absorbed within the FY19 Operations CEB. Appropriate funding will be included the Proposed FY20 CEB for the remaining term of the contract.

MBE/WBE PARTICIPATION:

Kemira Water Solutions, Inc. is not a certified Minority- or Women-owned business.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director *FL*
DATE: October 17, 2018
SUBJECT: Braintree-Weymouth Pump Station Improvements, Design and Engineering Services During Construction
Wright-Pierce
Contract 7435

COMMITTEE: Wastewater Policy & Oversight

INFORMATION

VOTE

Michele S. Gillen
Michele S. Gillen,

Director of Administration

David W. Coppes
David W. Coppes, P.E.

Chief Operating Officer

Patrick E. Smith, P.E., Program Manager
John Colbert, Acting Chief Engineer
Preparer/Title

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to award Contract 7435, Braintree-Weymouth Pump Station Improvements, Design and Engineering Services During Construction to Wright-Pierce, and to authorize the Executive Director, on behalf of the Authority, to execute said contract in an amount not to exceed \$2,085,169.83, for a contract term of 60 months from the Notice to Proceed.

BACKGROUND:

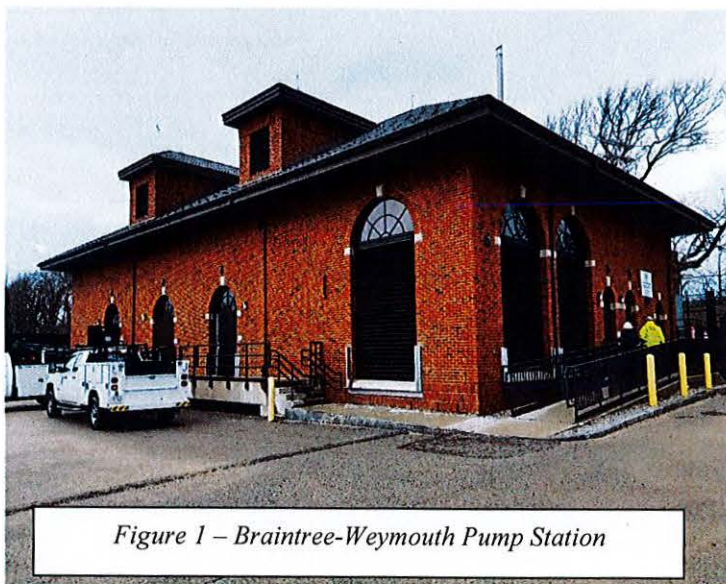


Figure 1 – Braintree-Weymouth Pump Station

The Braintree-Weymouth Pump Station, located on Kilby Street in Quincy, was constructed in 2008. This 4,600 square foot facility replaced the original 3,800 square foot Braintree-Weymouth Pump Station built in 1937. The 28 mgd peak design capacity facility lifts wastewater from the upstream Braintree-Weymouth Interceptor and local Quincy sewer into the High Level Sewer, which flows to the Nut Island Headworks. Major equipment components at the pump station (shown in Figure 1) include: two influent channels with hydraulic



Figure 2 – Manual Screens in lower Influent Room



influent sluice gates; two screenings grinders (to shred rags and debris before pumping); three 14 mgd submersible pumps (two required for peak operation); and a diesel-powered emergency generator. The facility was recently modified by staff to include flood mitigation measures.

Several operational and maintenance issues have surfaced including inadequate grinding/screening; reduced pump performance; challenges with equipment removal; and odor control limitations.

Ineffective grinding of screenings during wet weather events have led to clogged grinders and pumps, impacting the facility's capacity. To remedy this issue, staff designed and constructed manual screens as a temporary remedy (shown in figure 2). Installation of the manual screens is performed during storm events, requiring dedicated operational staff at the facility to raise and lower the screens into the influent flow and manually remove the screenings from the racks. This is very labor intensive, and improvements to the system and review of the pump operations are required.

High hydrogen sulfide (H_2S) levels in the facility periodically exceed the alarm limit requiring operations and maintenance staff to leave the grinder room until H_2S levels drop. This project will investigate and design improvements to the ventilation system to reduce these incidences. In addition, the single activated carbon adsorber (see figure 3), which removes odors from the ventilation air requires carbon change-out once or twice annually and has no redundancy. An evaluation to add redundant carbon adsorbers to prevent premature carbon breakthrough will be completed.

Pump removal at the facility is difficult as the pump hoist and monorail do not extend outside the facility. Pumps are removed using an external crane with difficult rigging required to tilt the pumps to clear the doorway. (see figure

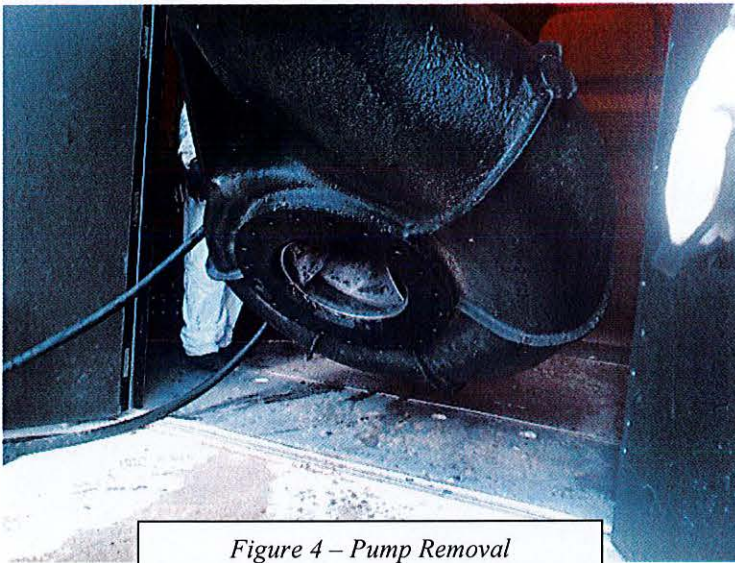


Figure 4 – Pump Removal

4).

The facility control panel is equipped with an Allen Bradley SLC 5/05 Programmable Logic Controller (PLC), which is approaching obsolescence. To improve the facility's control system reliability for the next 10 to 15 years and meet current SCADA standards, the existing PLC and Human Machine Interface (HMI) used to monitor and control the facility will be replaced as part of the project. Additional instrumentation upgrades to address aging instrumentation (level sensors,

etc.) and to address new standards and code requirements (gas alarm panel and monitoring systems) are also included in the project.

DISCUSSION:

Contract 7435 will provide design and engineering services during construction to address current facility issues, implement improvements and provide facility upgrades to meet current building codes. The contract includes evaluation, design and implementation of the following equipment and/or system improvements:

- Screenings removal and conveyance from Influent Lower Level Room;
- Pumping System and wet well configuration.
- Odor Control and Heating, Ventilation and Air Conditioning (HVAC) System improvements;
- Improved access for pump removals;
- Upgrade legacy SCADA system and associated instrumentation to meet current standards;
- Gas Monitoring System and indicating/alarm lights upgrades;
- MA Building Code Evaluation (all systems); and
- Sustainability initiatives for building energy management.

The project design will provide biddable contract documents for a single construction contract, to be publicly bid under Massachusetts General Laws Chapter 149.

Design and construction bidding services are estimated to take 24 months from Notice to Proceed. Construction is estimated to take 24 months plus a 12-month warranty period, for a project total of 60 months.

Procurement Process

On July 11, 2018, MWRA issued a one-step Request for Qualifications Statements/Proposals (RFQ/P) that was publicly advertised in the Central Register, Boston Herald, Banner Publications and El Mundo. In addition, notice was sent directly to over sixty engineering firms. Thirty-one firms requested the RFQ/P documents, seven of which were potential prime consultants.

The following criteria were used to evaluate each of the proposals: Cost (25 points), Qualifications and Key Personnel (23 points), Experience/Past Performance on Similar Non-Authority Projects and Past Performance on Authority Projects (22 points), Technical Approach (15 points), Capacity/Organization and Management Approach (10 points), and MBE/WBE Participation (5 points).

A pre-proposal meeting and site visit was held on August 1, 2018, and was attended by six firms, two of which were potential prime consultants. MWRA received two proposals on September 7, 2018, from Hazen & Sawyer, P.C. (Hazen and Sawyer) and Wright-Pierce.

The proposal costs are presented below:

	<u>Proposed Contract Cost *</u>	<u>Level of Effort *</u>
Wright-Pierce	\$2,085,169.83	14,454 hours
Hazen and Sawyer	\$2,114,077.26	12,900 hours
<i>Engineer's Estimate</i>	<i>\$1,860,000.00</i>	<i>11,036 hours</i>

* Contract cost and level of effort adjusted to correct errors.

The Selection Committee determined that Wright-Pierce presented very strong qualifications, experience/past performance, technical and management approach, and presented the best overall value of the two proposals. Wright-Pierce team will be led by a project manager with significant experience working on new and upgraded wastewater facilities. Wright-Pierce proposed a lower total cost than Hazen and Sawyer and included 1,554 (11%) additional hours, lower indirect cost rate, lower labor escalation rate and lower cost per hour. Wright-Pierce provided examples of highly relevant projects with comparable scope and size, and references for these projects were favorable with all interviewees indicating they would rehire the firm. The qualifications of the key personnel proposed are excellent overall, and include a very experienced team for the key technical roles for the project. The Technical Approach was thoughtful and anticipated potential solutions and evaluations of equipment including space concerns. The technical approach included potential design considerations for screenings, pump operations and equipment alternatives. Wright-Pierce exceeded the MBE participation requirement and met the WBE participation requirement.

Hazen and Sawyer proposed a slightly higher total cost, with lower total hours. The Selection Committee determined that Hazen and Sawyer presented a well-qualified team, provided good examples of relevant experience and indicated that it has the capacity to take on the project. The project manager proposed by Hazen and Sawyer has good experience and has previously worked on projects related to the Braintree-Weymouth Relief Facilities. Internal and external references

on projects related to the Braintree-Weymouth Relief Facilities. Internal and external references were found to be favorable and all indicated they would rehire the firm again. The description of the proposed technical approach was general, and could have included additional detail to demonstrate insight into the project's challenges. That said, the Selection Committee agreed that Hazen and Sawyer's proposal provided recognition of the need to maintain facility operations during construction. Hazen and Sawyer slightly exceeded the established MBE and WBE participation requirements.

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

	<u>Total Points</u>	<u>Order of Preference* Total Score</u>	<u>Final Ranking</u>
Wright-Pierce	410.40	6	1
Hazen and Sawyer	401.65	9	2

*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.

Staff determined that Wright-Pierce submitted an excellent proposal with a highly qualified team, proven experience on directly relevant projects, a detailed technical approach that reflected the Authority's goals, and an appropriate level of effort for the project.

Based on final rankings and the reasons set forth above, the Selection Committee recommends award of this contract to Wright-Pierce in an amount not-to-exceed \$2,085,169.83.

BUDGET/FISCAL IMPACT:

The Final FY19 CIP includes a budget of \$1,860,000 for Contract 7435. The contract award amount is \$2,085,169.83 or \$225,169.83 over budget. This amount will be absorbed within the five-year CIP spending cap.

MBE/WBE PARTICIPATION:

The minimum MBE and WBE participation requirements for this project were established at 7.18% and 5.77%, respectively. Wright-Pierce has committed to 14.47% MBE and 5.82% WBE participation.

STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: October 17, 2018
SUBJECT: Remote Headworks Upgrade
Arcadis U.S., Inc.
Contract 7206, Amendment 6



COMMITTEE: Wastewater Policy & Oversight

 INFORMATION
 X VOTE

John P. Colbert, P.E., Acting Chief Engineer
Margery J. Johnson, Program Manager
Preparer/Title



David W. Coppes, P.E.
Chief Operating Officer

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Amendment 6 to Contract 7206, Remote Headworks Upgrade, with Arcadis U.S., Inc., increasing the contract amount by \$683,000, from \$9,632,831 to \$10,315,831, with no increase in contract term.

BACKGROUND:

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

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

The Chelsea Creek Headworks was constructed in the 1960s and received its last significant upgrade in 1987. This project is a major upgrade of the entire facility and includes automation of the screenings collection and solids conveyance system. Climber screens are being replaced with catenary screens, and new influent and effluent sluice gates will be controlled with electric gate actuators. New HVAC and odor control systems will be installed, with redundancy added to both. A new emergency generator, fuel oil tank, and MWRA-owned transformer are included. Upgrade of instrumentation and control systems, a new communications tower and building, abatement of

hazardous building materials, flood protection measures to protect the facility to the 100-year flood elevation plus 2.5 feet, and upgrades to meet current code requirements are also included.

DISCUSSION:

The Board approved Amendment 1 to Contract 7206 on June 27, 2012, authorizing staff to proceed with Final Design and Construction Administration (CA) services for the Chelsea Creek Headworks only. This amendment included new scope identified during Preliminary Design and the addition of CA services originally intended to be provided by a Construction Management firm.

On June 18, 2013, the Executive Director approved Amendment 2, under delegated authority, to evaluate hurricane protection alternatives, wastewater heat recovery feasibility, and the technical feasibility of an alternative location for odor control equipment. Massachusetts Contingency Plan Phase I Services, in response to soil and groundwater contamination detected at the site, were also included.

Amendment 3 was approved by the Board on March 12, 2014 for the design of work identified as a result of the Amendment 2 evaluations. Design included incorporation of flood protection, relocation of the odor control equipment to the Congress Avenue Extension on the south side of the facility, relocation of a portion of MWRA water main Section 37 within the Congress Avenue Extension, and funding for a Massachusetts Contingency Plan Phase II Report and Risk Characterization.

The Board approved Amendment 4 on September 14, 2016. The Amendment included an increased level of effort for bidding services, e-Construction Software Services, and additional level of effort for engineering services during construction associated with the increased complexity of the Final Design.

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

Amendment 5 was approved by the Board on October 18, 2017. The Amendment included additional level of effort for meetings and e-Construction workflows, design for out of scope items, additional independent cost estimates, and additional level of effort for CA services.

This Amendment

Proposed Amendment 6 will increase the contract amount by \$683,000 from \$9,632,831 to \$10,315,831 with no increase in the contract term. The cost includes additional level of effort for CA services, out of scope design, and designs associated with unforeseen conditions encountered during construction.

Construction Administration Services \$540,000

CA services include, among other tasks, responding to contractor Requests for Information (RFIs) and review of submittals.

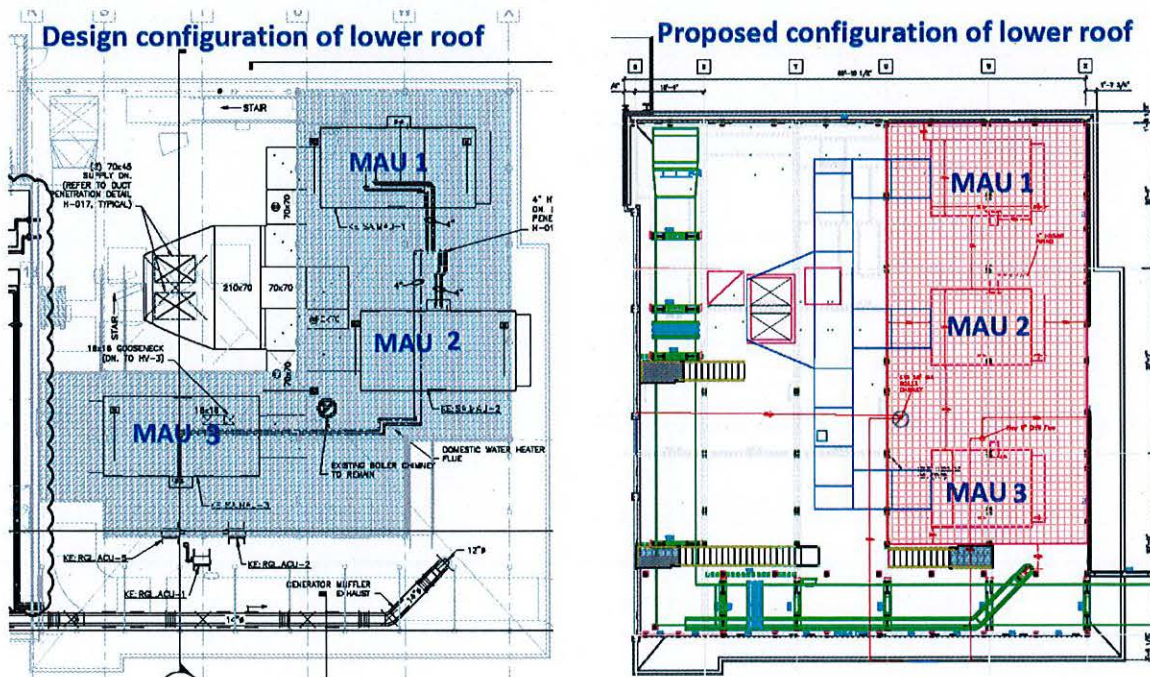
There are currently 563 RFIs in the contract, including 63 resubmittals. The number of RFIs was previously increased in Amendment 5 as the project had proven to be more complex than other MWRA construction projects. The obstacles being encountered during this rehabilitation project, and the sequencing of work to keep the facility fully operational during construction, have resulted in additional RFIs. This Amendment includes \$300,000 for the increased level of effort and costs associated with reviewing and advising on an additional 250 RFIs. Staff expect this sum will be sufficient to complete RFI reviews for the project.

The contract also includes review of 625 submittals, including 125 resubmittals. This number has not been increased since the onset of construction, and was based on previous MWRA projects. The number of submittals can be dependent on how a contractor and its subcontractors and suppliers choose to package them. The contractor is close to exceeding the 625 submittals and 125 resubmittals for this project. This Amendment includes \$240,000 for the level of effort and cost associated with reviewing an additional 170 submittals and 30 resubmittals that are expected to be sufficient to complete submittal reviews for this project.

Out of Scope Design

\$102,000

The layout of the three Makeup Air Units on the lower roof was designed to accommodate the largest of the three units specified in the contract documents. The unit selected by the contractor has a smaller footprint. This presents an opportunity to improve the layout of equipment and support frame (dunnage) on the roof, allowing for better long-term access for operation and maintenance of equipment. The change will also allow a consistent profile of ductwork on the roof, eliminating complicated transitions between round and rectangular sections. Design of the improved layout includes performance of a structural evaluation for the revised dunnage, architectural modifications, adjustments to the HVAC ductwork, plumbing modifications, and changes to 23 drawings, at a cost of \$60,000.



Improved Layout of Makeup Air Units (MAU) on Lower Roof

The scope for development and implementation of SCADA high performance graphics for Human Machine Interfaces (HMIs) is also included in this Amendment. MWRA's SCADA standards for HMIs have been revised since the start of this project. The new standards reduce complexity of the screens and presentation of equipment so that it is simpler for operators to monitor status and identify a problem. This work will ensure that the graphics are consistent with other HMI upgrades. This Amendment includes additional level of effort associated with this work at a cost of \$42,000.

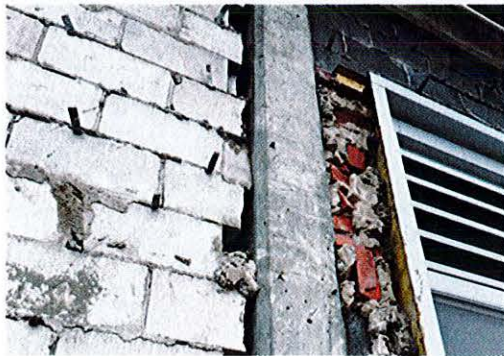
Design Associated with Unforeseen Conditions

\$41,000

Design associated with unforeseen conditions required additional out of scope level of effort, and is included in this Amendment at a cost of \$41,000.



Oil in Test Pit for Storm Drain



Unstable Conditions behind Siding

- A test pit dug to locate a portion of the City of Chelsea's 21-inch storm drain that was to be re-routed uncovered soil and groundwater contaminated with oil. A level of effort is included for Arcadis' Licensed Site Professional to evaluate the extent of contamination, determine the source of the oil, and evaluate reporting and remediation requirements. An agreement with the City of Chelsea to leave the storm drain in its current alignment and line it with a structural cured-in-place liner required Arcadis to evaluate the condition of the existing pipe and prepare the lining specification.

- Removal of finished surfaces from existing walls has revealed that a number of the existing walls are unstable and require demolition and replacement with new masonry walls. Additional details for repair and improvement of these walls are necessary.

- Preparation of Channel 1 for application of the specified epoxy lining system required the removal of more deteriorated concrete than anticipated.

A modified surface preparation process and thicker resurfacing system were necessary to achieve the conditions required for application of the lining system. Additional evaluations and site inspections of surface preparation and resurfacing products and procedures, and testing of the completed resurfacing were performed prior to application of the epoxy lining system.

- Meetings and evaluations of water main pressure testing procedures and thrust block design related to a change in construction sequence for the relocation of a portion of Section 37 water main were performed.
- Additional analyses and an evaluation of static load testing for the odor control and Section 37 water main piles were required to confirm pile designs, after low blow counts were encountered during installation of piles.

CONTRACT SUMMARY:

	<u>AMOUNT</u>	<u>TIME</u>	<u>DATED</u>
Original Contract:	\$6,682,531	2,494 Days	07/01/10
Amendment 1:	\$0	458 Days	10/05/12
Amendment 2*:	\$249,500	0 Days	10/22/13
Amendment 3:	\$957,600	0 Days	09/17/14
Amendment 4:	\$897,200	1,160 Days	04/06/17
Amendment 5:	\$846,000	0 Days	07/23/18
Proposed Amendment 6:	<u>\$683,000</u>	<u>0 Days</u>	Pending
Adjusted Contract Amount	\$10,315,831	4,112 Days	

*Approved under delegated authority

The percentage of amendments for this contract is 54% of the original contract value.

BUDGET/FISCAL IMPACT:

The FY19 CIP includes a budget of \$9,633,000 for Contract 7206. Including this amendment for \$683,000, the adjusted subphase total will be \$10,315,831 or \$682,831 over budget. This amount will be absorbed within the five-year CIP spending cap.

MBE/WBE PARTICIPATION:

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



MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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

WATER POLICY & OVERSIGHT COMMITTEE MEETING

to be held on

Wednesday, October 17, 2018

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

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

Time: Immediately following Wastewater Committee

REVISED AGENDA

A. Approvals

1. Update on the Consultant Support Structure for the Metropolitan Tunnel Redundancy Program

B. Information

1. Dedham-Westwood Water District Update

C. Contract Awards

1. Supply and Delivery of Soda Ash to the John J. Carroll Water Treatment Plant: Ciner Wyoming LLC, Bid WRA-4559

D. Contract Amendments/Change Orders

1. Southern Extra High Pipeline – Section 111 (Boston): P. Gioioso and Sons, Inc., Contract 6454, Change Order 5
2. Western Operations Marlborough Maintenance Facility: E. A. Colangeli Construction Co., Inc., Contract 6650B, Change Order 16

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the

Water Policy and Oversight Committee

September 19, 2018

A meeting of the Water Policy and Oversight Committee was held on September 19, 2018 at the Authority headquarters in Charlestown. Committee Vice Chair Peña presided. Present from the Board were Ms. Wolowicz and Messrs. Carroll, Cotter, Foti, Pappastergion, Vitale and Walsh. Mr. Flanagan was absent. Among those present from the Authority staff were Frederick Laskey, Steven Remsberg, David Coppes, Carolyn Fiore, Thomas Durkin, Corinne Barrett, Betsy Reilley, Vincent Spada and Kristin MacDougall. The meeting was called to order at 11:34 a.m.

Information

Update on Water Quality

Staff made a presentation about routine monitoring in community water systems under the Total Coliform Rule (TCR) from January through August 2018 and gave an update on a boil water order that occurred in Stoneham on September 14 and 15, 2018. There was brief discussion and question and answers.

Contract Awards

* Demolition of Section 56 Water Main, General Edwards Bridge: R. Zoppo Corporation, Contract 7536

The Committee recommended approval (ref. W B.1.)

Contract Amendments/Change Orders

* Northern Intermediate High Section 110 – Stoneham and Wakefield: Albanese D&S, Inc., Contract 7478, Change Order 13

The Committee recommended approval (ref. W C.1.)

* Committee recommendation approved by the Board on September 19, 2018

*Wachusett Aqueduct Pumping Station: BHD/BEC JV 2015, A Joint Venture,
Contract 7157, Change Order 51


Staff made a verbal update on the project. There was brief discussion and questions and answers.

The Committee recommended approval (ref. W C.2.)

The meeting adjourned at 12:17 a.m.

* Committee recommendation approved by the Board on September 19, 2018

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: October 17, 2018
SUBJECT: Update on the Consultant Support Structure for the Metropolitan Tunnel Redundancy Program

COMMITTEE: Water Policy and Oversight

 INFORMATION
 X VOTE

Frederick O. Brandon, P.E., Director, Design and Construction
Preparer/Title


Kathleen M. Murtagh, P.E.
Director, Tunnel Redundancy

RECOMMENDATION:

That the Board of Directors approve staff's recommendation to prepare and issue an RFQ/P for Program Support Services and an RFQ followed by an RFP (two-step) for Preliminary Design/ Geotechnical/MEPA review services to support the Metropolitan Tunnel Redundancy Program.

DISCUSSION:

In February 2017, the Board of Directors approved 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 proceed with preliminary design, geotechnical investigation, and Massachusetts Environmental Policy Act (MEPA) review of the project.

At this time, the Tunnel Redundancy Program is in the very early stages of planning/design. Over the next several years there is much work to be done in preparation for the final design and construction phases of the project. During these early years, many program-wide activities will need to be initiated including program-wide planning, risk management planning, quality management planning, health and safety planning, design criteria and standardization, document management and controls, work breakdown planning, procurement planning, construction package planning, field investigation procedures, rock core storage, critical path scheduling, and budget planning and management. In addition, the Preliminary Design Phase of the program will involve significant efforts on permitting, geotechnical investigations, alternatives evaluation, as well as community outreach.

Given the size and complexity of the Tunnel Redundancy Program, it is staff's recommendation that two initial consultant contracts be procured to perform necessary work over the next several

years for Program Support Services (PSS) and Preliminary Design Engineering. The staff of the Tunnel Redundancy Department, with support from other MWRA departments as appropriate, will oversee the Program including all work of the PSS and Preliminary Design Engineer. The proposed consultant organization chart is attached.

Engagement of a program-wide, independent consultant to support very large, long duration, complex projects is very common and generally consistent with past MWRA programs, such as the Lead Design Engineer and Program Manager/Construction Manager on the Boston Harbor Project, Design Management Support on the John J. Carroll Water Treatment Plant, and Owner's Representative on the Norumbega, Blue Hills and Spot Pond Covered Storage projects. It is typical for very large tunnel projects to include an independent consultant(s) in the form of an Owner's Representative, Owner's Advisor, Program Manager, Geotechnical Consultant, Tunnel Consultant, or Program Support Services.

Program Support Services Consultant

The PSS consultant firm will provide technical professional resources to the Tunnel Redundancy Department to support program-wide management, risk management, quality management, standardization, contract delivery and contract packaging. The PSS will include independent technical reviews, constructability reviews, critical path schedule evaluations, and cost estimating/opinions. The PSS will be especially helpful in providing early and essential consultation as well as preparing some early work products to ensure the Program moves forward properly as the Department adds key permanent staff.

The staff of the PSS consultant firm will consist mostly of senior professionals with significant experience in tunneling and complex underground construction to be used as needed to supplement the Tunnel Redundancy Department. Key personnel will include technical experts in the areas of program management, rock tunneling, geotechnical engineering, structural engineering, and cost estimating/scheduling with experience in the planning, design, and construction on similar complex rock tunneling and underground projects including mega projects (greater than \$1.0 billion).

The PSS consultant will also provide program-wide risk management/mitigation analysis as well as an in-depth understanding of the state of the practice and current trends in the tunnel construction industry. The PSS staff will have the necessary skills in the area of tunneling and complex underground construction required to properly execute the Tunnel Redundancy Program but would be difficult and not cost-effective for MWRA to hire as permanent staff.

Although the PSS consultant will provide a vital resource to the program, it is not envisioned at this time that the PSS will serve as an engineer-of-record or construction manager for the project. It is envisioned that the PSS will be precluded from participating directly in either the preliminary or final design, or the construction phase of the project. It is envisioned that the PSS contract will be procured under a one-step RFQ/P process for a duration of 5 years, with up to two 2-year renewals (for a total of 9 years). Selection of the PSS will follow the MWRA's existing evaluative procurement process. Staff are preparing an estimate of the costs for the PSS services over the 9-year contract.

Limiting the PSS's role by precluding the PSS firm from proposing on other consultant contracts for the project and establishing a reasonably long contract duration is intended to encourage interest and competition for the PSS contract. Furthermore, it encourages

independence from the interests of other program participants, and fosters a long-term commitment to the MWRA and the tunnel program.

Preliminary Design Engineering Contract

The Preliminary Design Engineering Contract will include the preliminary geotechnical investigation, preliminary route and shaft site alternative evaluations, preliminary design, and preparation of a comprehensive list of the environmental permits needed and preparation of required MEPA review for the project. This phase of the project will initiate the actual design of the program.

The Preliminary Design Engineering Contract is anticipated to include several significant project documents including a Preliminary Geotechnical Data and Design Report, Alternatives Evaluation and Preliminary Design Report, Environmental Impact Report and preliminary design drawings.

It is envisioned that the Preliminary Design Engineer will be procured under a two-step evaluative process (RFQ followed by an RFP issued only to the shortlisted respondents). At this time, it is anticipated that Preliminary Design can be accomplished within 3 years.

Next Steps

The next steps will be to develop a scope of work and procurement for a consultant to provide Program Support Services followed by development of a scope of work and procurement for a consultant to provide Preliminary Design Engineering. At this time, the goal is to issue the RFQ/P for the PSS by early 2019 and issue the Preliminary Design Engineering RFQ by the summer of 2019.

After the completion of the preliminary design, additional consultant contracts will be needed to support both final design and construction management of the program. Future staff summaries will provide details on the structure and scope of those contracts.

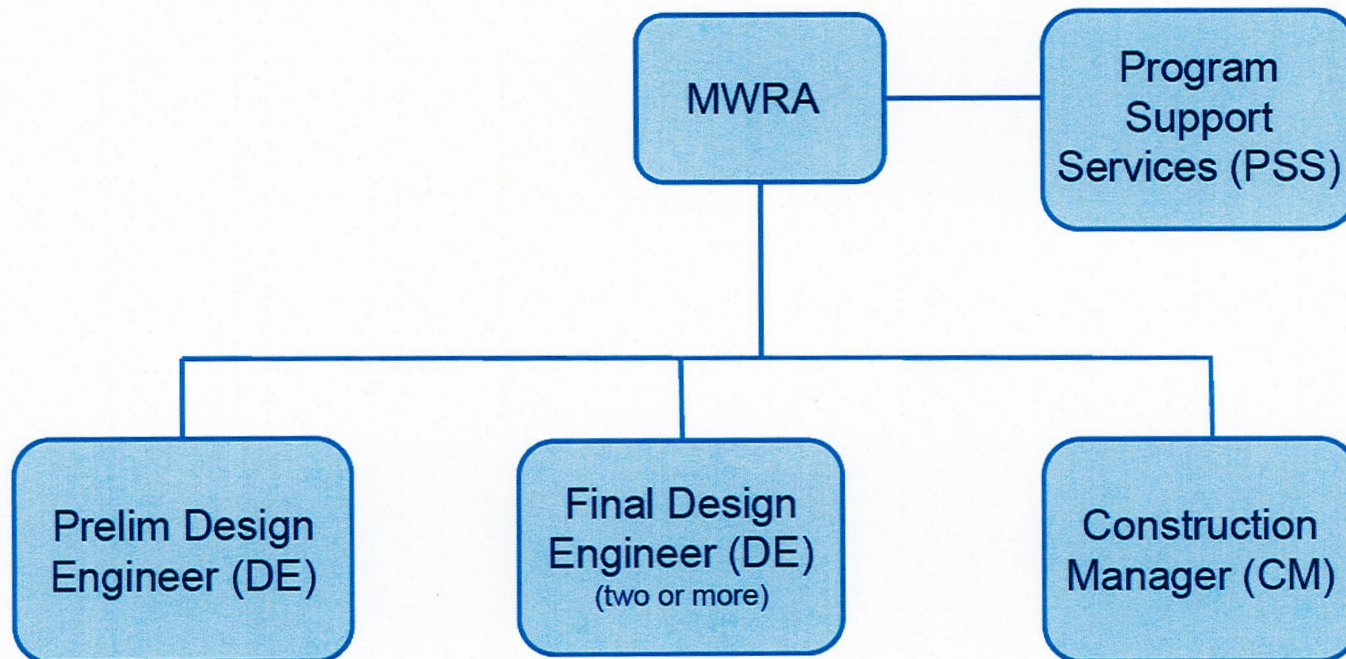
BUDGET/FISCAL IMPACTS:

No change to the total funding allocated for the Metropolitan Tunnel Redundancy Program is proposed to support the professional services recommended herein or as part of the FY2020 CIP. Although a Program Support Services contract is not specifically identified in the FY2019 CIP, it includes funds for "Administration, Legal and Public Outreach," which was envisioned to address such program-wide professional services. Refinement of the program budget will be conducted as part of the 2020 CIP process.

ATTACHMENT:

Consultant Organization Chart

Metropolitan Tunnel Redundancy Program – Consultant Organization



STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: October 17, 2018
SUBJECT: Dedham-Westwood Water District Update



COMMITTEE: Water Policy & Oversight

INFORMATION
VOTE

Beth Card, Director, Environmental and Regulatory Affairs
Preparer/Title


David W. Coppes, P.E.
Chief Operating Officer

RECOMMENDATION:

For information only.

DISCUSSION:

The Dedham-Westwood Water District (DWWD) was admitted to the MWRA Waterworks System in 2005 as a partially supplied community and is authorized to purchase 73 million gallons of water per year (200,000 gallons per day) on an annualized average basis. DWWD is in the process of upgrading its Bridge Street Treatment Plant, which is located in Dedham. Completion of the construction requires shutting down the treatment plant for five months December 2018 through April 2019. On September 10, 2018, DWWD formally requested approval from the MWRA and the MWRA Advisory Board, to temporarily increase its MWRA withdrawal by 150 million gallons (1 MGD for five months). The existing water supply agreement between the MWRA and DWWD has a provision for a temporary increase in volumes beyond 2 MGD and 73 million gallons on an annual basis without a written amendment to that agreement.

On September 10, 2018, DWWD also formally requested a MEPA opinion as to whether purchasing the increased volumes from the MWRA triggers a new MEPA review. The MEPA office confirmed on September 27, 2018, that the proposed expansion in withdrawal is not subject to review under MEPA and the submission of a new ENF is not required.

BACKGROUND:

Although its supply sources have been able to meet DWWD's demand the majority of the time, in the past, during dry conditions, DWWD encountered difficulties meeting its peak demand. DWWD's local water supply system is served by three groundwater supplies, two of which are in the Charles River Basin and one, the Fowl Meadow Well, which is in the Neponset River Basin.

Use of the Fowl Meadow Well is governed by both the Water Management Act and the Interbasin Transfer Act, and the latter requires DWWD to cease operation of the Fowl Meadow Well when flow in the Neponset River falls below a designated amount. Hydrologic and water demand modeling was conducted to identify the water deficit created by restricted use of the Fowl Meadow Well, and this deficit was projected in 2005 to be 0.1 mgd, which served as the basis of DWWD's original request to MWRA. Accordingly, under the terms of DWWD's admission to MWRA, DWWD was originally authorized to withdraw 36.5 million gallons annually or 100,000 gallons per day on an annual average day basis, with a typical maximum day withdrawal of 2 million gallons.

In 2014, DWWD encountered delays on maintenance work at one of its wells, creating a supply deficit and emergency situation that resulted in projected withdrawals from MWRA, which would far exceed their allowed annual use. In addition, anticipated growth in its service area created the need to increase the reliability of its water system in the event of groundwater pump failure. These factors prompted DWWD to increase its withdrawal limit from MWRA. In December 2014, MWRA and DWWD amended their water supply agreement to increase the authorized average withdrawal to 200,000 gallons per day or 73 million gallons a year. DWWD's maximum daily withdrawal of 2 million gallons did not change.

BUDGET/FISCAL IMPACT:

DWWD will continue to be assessed for water in accordance with MWRA's water assessment methodology and will reflect the impact of the increased water use during the construction period. Water provided in CY2018 will be used to determine the FY2020 assessment, and water provided in CY2019 will be used to determine the FY2021 assessment.

ATTACHMENTS:

Request Letter from DWWD
MEPA Opinion Regarding Increased Volumes



DEDHAM-WESTWOOD WATER DISTRICT

50 Elm Street • Dedham, MA 02026 (781) 329-7090 • Fax (781) 329-8737
www.dwwd.org

September 10, 2018

Mr. Frederick A. Laskey, Executive Director
Massachusetts Water Resources Authority
100 First Avenue, Charlestown Navy Yard
Boston, MA 02129

Mr. Joseph Favaloro, Executive Director
Massachusetts Water Resources Authority Advisory Board
100 First Avenue, Charlestown Navy Yard
Boston, MA 02129

Subject: Request to Temporarily Increase MWRA Withdrawal by 150 million gallons a year (1.0 mgd) between December 2018 through April 2019 during Construction at Bridge St WTP

Dear Messrs Laskey and Favaloro:

The Dedham Westwood Water District (DWWD) was admitted into the MWRA Waterworks System in 2005 and currently is authorized to purchase 73 million gallons of water per year (200,000 gallons per day on an annualized average basis). We are currently modernizing our Bridge St Treatment Plant in Dedham and the construction necessitates a shutdown of the Treatment Plant for five months beginning in December 2018 and through April 2019.

Pursuant to the existing Water Supply Continuation Agreement between MWRA and DWWD as well as the original terms of DWWD's admission to MWRA, any increase beyond 2 million gallons on a daily basis, and 73 million gallons on an average annual basis will require a written contract revision. Accordingly, DWWD is requesting a written contract revision or alternative agreement for this temporary water purchase related to its Treatment Plant construction.

In support of DWWD's request, please note that DWWD has satisfied requirements of the MWRA's regulations for Continuation of Contract Water Supply, MWRA # OP.10 Admission to MWRA Waterworks System, and MWRA's Enabling Act. In 2010, DWWD submitted a Supplementary Report to MWRA that reflected the following:

- 1) DWWD has maintained all reasonable conservation measures and has continued the implementation of its Water Conservation Plan submitted to DEP in 2005 as a condition of its MEPA Certificate for admission to MWRA.
- 2) DWWD has not abandoned any local source and substituted it for water from MWRA sources;

3) A local water supply source feasible for development has not been identified by either DWWD or DEP.

4) A water use survey has been completed that identified all large water users.

The above noted plans and statements remain true. The WRC previously determined it would not take jurisdiction under the Interbasin Transfer Act. Please see Attachment 1. An additional request for Advisory Opinion has been submitted to the MEPA Office but based on their previous determination in 2014 related to our request to purchase an additional 36.5 million gallons per year (100,000 gallons per day on an averaged annualized basis) beyond the original withdrawal in 2006, DWWD doesn't believe an ENF will be required.

DWWD looks forward to a continuing and cooperative relationship with the MWRA and the Advisory Board. Should you have any questions or desire further information, please do not hesitate to contact me at 781-461-2779 or ecommane@dwwd.org.

Sincerely,



Eileen Commane,
Executive Director

cc:

Bethany Card, MWRA



The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Charles D. Baker
GOVERNOR

Karyn E. Polito
LIEUTENANT GOVERNOR

Matthew A. Beaton
SECRETARY

Tel: (617) 626-1000
Fax: (617) 626-1081
<http://www.mass.gov/eea>

September 27, 2018

Eileen Commame
Dedham-Westwood Water District
50 Elm Street, PO Box 9137
Dedham, MA 02027-9137

Re: Request for Advisory Opinion
Increase in Water Withdrawal for Dedham-Westwood Water District

Dear Ms. Commame:

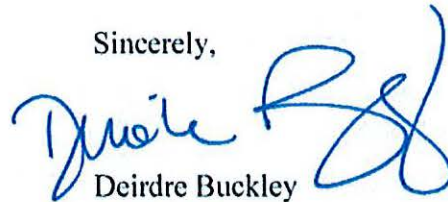
I am writing in response to your letter of September 10, 2018 in which you requested a determination as to whether review under the Massachusetts Environmental Policy Act (MEPA) would be required for the project referenced above.

According to your letter, the Dedham-Westwood Water District (DWWD) proposes to temporarily increase its water withdrawal from the Massachusetts Water Resources Authority (MWRA) by 1,000,000 gallons per day (gpd) for a period of 5 months. The request is relative to the need to take the Bridge St Water Treatment Plant in Dedham offline for a construction modernization project. DWWD's withdrawal from the MWRA was subject to a Mandatory Environmental Impact Report (EIR) pursuant to 301 CMR 11.03(4)(a)(4) in 2005 because it required a State Agency Action and consisted of new water service to a water district across a municipal boundary. At this time, the volume of water to be withdrawn was projected to be 100,000 gpd on an average annual basis, and up to 2,000,000 gpd on a maximum day basis. In 2014, you submitted a Request for Advisory Opinion where DWWD proposed to withdraw an additional 100,000 gpd from the MWRA for a total of 200,000 gpd on an average annual basis; the maximum day withdrawal of up to 2,000,000 gpd did not change, and did not require a new approval from the Water Resources Commission (WRC). On October 10, 2014, I issued a response that no additional MEPA review was required for the proposed expansion in withdrawal.

The applicable MEPA threshold at 301 CMR 11.03(4)(b)(1) states that an ENF would be required for a new withdrawal or expansion in withdrawal of 100,000 or more gpd from a water source that requires new construction for the withdrawal. As no new construction is proposed to be undertaken in this case, the proposed project will not trigger this threshold. In addition, I note that the WRC has not taken jurisdiction under the Interbasin Transfer Act because DWWD's predecessor was a named community under the enabling acts for the Metropolitan District Commission and the Massachusetts Water Resources Authority. Therefore, I hereby determine that the proposed expansion in withdrawal is not subject to review under MEPA and the submission of a new ENF is not required.


Please contact Eve Schlüter, Assistant Director of the MEPA Office, at (617) 626-1131 if you have any questions concerning this matter.

Sincerely,




Deirdre Buckley
MEPA Director


STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: October 17, 2018
SUBJECT: Supply and Delivery of Soda Ash to the John J. Carroll Water Treatment Plant
Ciner Wyoming LLC
Bid WRA-4559

COMMITTEE: Water Policy & Oversight

 INFORMATION
 X VOTE


Michele S. Gillen
Director of Administration

Mark H. Johnson, PE, Director, Waterworks
Douglas Rice, Director of Procurement 
Preparer/Title


David W. Coppes, P.E.
Chief Operating Officer

RECOMMENDATION:

To approve the award of Purchase Order Contract WRA-4559, for the supply and delivery of soda ash to the John J. Carroll Water Treatment Plant, to the lowest responsive bidder, Ciner Wyoming LLC, and to authorize the Executive Director, on behalf of the Authority, to execute said purchase order contract in an amount not to exceed \$11,520,000 for a period of three years, from January 1, 2019 through December 31, 2021.

DISCUSSION:

MWRA uses sodium carbonate, commonly referred to as soda ash, at the Carroll Plant for corrosion control. In combination with carbon dioxide, soda ash increases and stabilizes the alkalinity and pH of MWRA's water. MWRA takes delivery of soda ash in powder form. It is stored in six 120-ton vertical silos inside the Post-Treatment Building. It is then fed into the system by six gravimetric feeders with solution tanks.

A tangible result of the use of soda ash and one of the most significant benefits are reflected in the sampling results under EPA's Lead and Copper Rule. This requires that nine out of ten or 90% of the sampled homes must have lead levels below the Action Level of 15 parts per billion (ppb). Soda ash is also used for compliance with the Department of Environmental Protection's Optimal Water Quality Control Parameters program, which requires: a continuous finished water tap pH of greater than equal to 9.1, an alkalinity of greater than or equal to 37 mg/L, and a pH no less than 9.0 collected from 27 distribution system locations on a quarterly basis.

Procurement Process

Bid WRA-4559 was advertised in the following publications: Boston Herald, Goods and Services Bulletin, El Mundo, and Banner Publications. In addition, bids were made available for public downloading on MWRA's e-procurement system (Event 3509), and six potential bidders were solicited through the e-Portal.

On August 7, 2018, Event 3509 closed with the following results:

Item	Description	Ciner Wyoming LLC	Tata Chemicals Soda Ash Partners	Genesis Alkali Wyoming LP	DuBois Chemical Inc
1	11,520 Tons Year 2019	\$320.00 per ton = \$3,686,400	\$323.35 per ton = \$3,724,992	\$341.63 per ton = \$3,935,577.60	\$371.96 per ton = \$4,284,979.20
2	11,520 Tons Year 2020	\$335.00 per ton = \$3,859,200	\$333.35 per ton = \$3,840,192.	\$351.63 per ton = \$4,050,777.60	\$393.81 per ton = \$4,536,691.20
3	11,520 Tons Year 2021	\$345.00 per ton = \$3,974,400	\$345.35 per ton = \$3,978,432	\$361.63 per ton = \$4,165,977.60	\$416.66 per ton = \$4,799,923.20
	Total	\$11,520,000	\$11,543,616	\$12,152,332.80	\$13,621,593.60

The contract will provide up to 11,520-tons of soda ash each year during the three-year term of this contract and MWRA will only pay for product that is delivered and received.

Under the existing three-year contract with Tata Chemical Soda Ash Partners which expires on December 31, 2018, MWRA is paying \$326.63 per ton (third year pricing; similarly escalated, the first year's unit bid price was \$306.63 per ton and the second year's price was \$316.63 per ton)

The marketplace for soda ash is in a state of consistent strong demand. Soda ash is primarily used in the production of flat glass and detergents. There are four main soda ash producers in the United States, Ciner Wyoming LLC, Tata Chemicals Soda Ash Partners, Genesis Alkali, and Solvay Soda Ash. All of these producers have mines in Sweetwater County, Wyoming. U.S. producers of soda ash have been successful maintaining lower production costs than their main competitors in China. As a result, global users buy all of the soda ash that the Wyoming-based companies can produce. As evident from the bid results, MWRA received bids from all four major producers. Solvay Soda Ash contacted the Purchasing Unit and stated that DuBois Chemical, Inc. would be supporting them in this contract.

Staff have reviewed all bids and have determined that Ciner Wyoming LLC's bid meets all of the requirements of the specifications. Therefore, staff recommend the award of this purchase order contract to Ciner Wyoming LLC as the lowest responsive bidder.

BUDGET/FISCAL IMPACT:

There are sufficient funds in Operations' FY19 Current Expense Budget for the first portion of this contract. Appropriate funding will be included in subsequent CEB requests for the remaining term of this three-year contract.

MBE/WBE PARTICIPATION:

Ciner Wyoming LLC is not a certified Minority- or Women-owned business.

STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: October 17, 2018
SUBJECT: Southern Extra High Pipeline - Section 111 (Boston)
P. Gioioso and Sons, Inc.
Contract 6454, Change Order 5



COMMITTEE: Water Policy & Oversight

INFORMATION
 VOTE

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



David W. Coppes, P.E.
Chief Operating Officer

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Change Order 5 to Contract 6454, Southern Extra High Pipeline - Section 111 (Boston), for a lump sum amount of \$79,716.72, increasing the contract amount from \$12,671,214.71 to \$12,750,931.43, with no increase in contract term.

Further, to authorize the Executive Director to approve additional change orders as may be needed to Contract 6454 in an amount not to exceed the aggregate of \$75,000, in accordance with the Management Policies and Procedures of the Board of Directors.

DISCUSSION:

MWRA's Southern Extra High service area includes Canton, Dedham, Norwood, Stoughton, Westwood, portions of Brookline and Milton, and the Roslindale and West Roxbury sections of Boston. The five communities in the southern portion of the service area (Canton, Norwood, Dedham, Westwood, and Stoughton) are served by a single 36-inch diameter transmission main (Section 77), which is five miles long. Canton and Stoughton are served by a branch (Section 88) off of Section 77. Although several of these communities are partially supplied by MWRA, the loss of Section 77 would result in a rapid loss of service in Norwood and Canton, and potential water restrictions for Stoughton and Dedham-Westwood. Correction of this deficiency has been assigned a Priority One in MWRA's Water Master Plan due to the potential critical threat to public health that could result from a failure in this single transmission main.

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

Contract 6454, Section 111, which is the subject of this staff summary, is the first of three main pipeline construction contracts and consists of 11,000 linear feet of 36-inch water main, which is primarily located within DCR's Stony Brook Reservation in Boston.

This Change Order

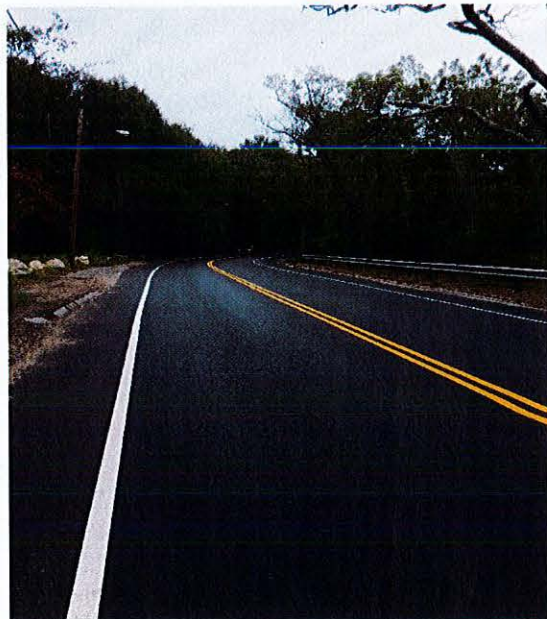
Change Order 5 consists of the following item:

Increase Diesel Fuel and Liquid Asphalt Price Adjustment Allowance \$79,716.72

The contract included an allowance in the amount of \$20,000 for price adjustments for diesel fuel, gasoline, liquid asphalt, and Portland cement contained in cast-in-place concrete. After the time of bid, the price of diesel fuel and liquid asphalt increased by more than 5% during some months and required a price adjustment per MGL Chapter 30 requirements. The other commodities did not exceed the 5% variance from the base prices or were not used on this project. The contract was awarded in July 2016 and included a cost of \$1.632 per gallon for diesel fuel oil and \$377.50 per gallon for liquid asphalt. By the time of substantial completion in July 2018, the rates for diesel fuel oil increased to \$2.552 (56%) and liquid asphalt to \$427.50 (13.25%) exceeding the 5% variance. A total increase of \$20,467.61 resulted for diesel fuel oil and a total increase of \$79,249.11 resulted for liquid asphalt. Therefore, the allowance must be increased by \$79,716.72.



Full width mill and overlay on Enneking Parkway



Paving on Enneking Parkway

The approved PCO for this item has been identified by staff as an overrun. Staff, the Consultant, and the Contractor have agreed to a lump sum amount of \$79,716.72 for this additional work with no increase in contract term. The Contractor proceeded with this work at its own risk in order to proceed with the remainder of the contract work.

CONTRACT SUMMARY:

	<u>Amount</u>	<u>Time</u>	<u>Dated</u>
Original Contract:	\$11,770,000.00	780 Days	06/16/16
Change Orders:			
Change Order 1	\$369,958.46	0 Days	08/24/17
Change Order 2*	\$226,387.33	0 Days	10/26/17
Change Order 3	\$78,353.57	0 Days	12/05/17
Change Order 4*	\$226,515.35	0 Days	05/09/18
Change Order 5	<u>\$79,716.72</u>	<u>0 Days</u>	Pending
Total of Change Orders:	\$980,931.43	0 Days	
Adjusted Contract:	\$12,750,931.43	780 Days	

*Approved under delegated authority

If Change Order 5 is approved, the cumulative value of all change orders to this contract will be \$980,931.43 or 8.3% of the original contract amount. Work on this contract is approximately 99% complete.

BUDGET/FISCAL IMPACT:

The FY19 CIP includes a budget of \$12,670,419 for contract 6454. Including this change order for \$79,716.72, the adjusted subphase total is \$12,750,931.43 or \$80,512.43 over budget. This amount will be covered within the five-year CIP spending cap.

MBE/WBE PARTICIPATION:

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

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: October 17, 2018
SUBJECT: Western Operations Marlborough Maintenance Facility
E. A. Colangeli Construction Co., Inc.
Contract 6650B, Change Order 16



COMMITTEE: Water Policy & Oversight

INFORMATION
 VOTE

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


David W. Coppes, P.E.
Chief Operating Officer

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Change Order 16 to Contract 6650B, Western Operations Marlborough Maintenance Facility, with E. A. Colangeli Construction Co., Inc., for a lump sum amount of \$31,213.00, increasing the contract amount from \$3,663,938.06 to \$3,695,151.06, with no increase in contract term.

DISCUSSION:



MWRA's former Interim Corrosion Control Facility (shown at left) was 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 and was formerly used for water treatment prior to the start-up of the Carroll Plant. Under this contract, the building was modified to include electrical, plumbing, mechanical, and SCADA trade shops, outside covered storage, and a supervisor's office space. The work included 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 codes. The work of this contract was prepared in 2007 and originally included three facility upgrades in one construction package, CP7. CP7 included the Marlborough Maintenance Facility, the Water Quality Laboratory Upgrade in Southborough, and the Cosgrove Facility Upgrade in Clinton. It was decided to separate the three facilities into three separate construction bid projects. The first one was the

Southborough Laboratory upgrade, which was bid in 2015 and completed in 2017. When the Maintenance Facility is complete, it will be followed by the Cosgrove Facility construction.

This Change Order

Change Order 16 consists of the following two items:

Demolish Four Existing Soda Ash Silos Utilizing Crane, Disposal Containers, and Truck Equipment of Shorter Length and Width \$25,000.00



Silo tanks



Cutting silo tanks in place

After commencement of the contract, the front entrance roadway used to access the site was reconstructed and reconfigured under the Wachusett Aqueduct Pump Station project. The reconstructed front entrance went from a roadway with a 24-foot wide travel way to two separate 12-foot wide travel lanes. This Contractor's means and methods were based on the use of a large crane with a 15-foot width, transported on a flatbed trailer 75 feet in length. The crane was to be used to remove the four 60-foot high former soda ash silos and for the building roof replacement. The Marlborough Maintenance Facility bid documents did not show the future reconfigured entranceway, nor were the bidders advised of the proposed entrance roadway restriction. At the time of the Marlborough Maintenance Facility bid opening, the roadway lane restriction work on the front entrance had not started. The Contractor modified the silo demolition work plan using smaller equipment, additional smaller disposal containers, and smaller trucks in order to access the site. The smaller equipment resulted in a longer duration for this work activity. Based on that restriction, the Contractor notified MWRA that it was now forced to use smaller equipment which would increase its time and cost. The Contractor claimed a differing site condition and indicated that a cost increase would be forthcoming. Once the work was completed, the Contractor submitted a cost proposal in the amount of \$185,000 which staff deemed excessive. During the course of the project construction, staff and the Contractor continued discussion on the cost increase. After several rounds of cost discussions, the Contractor offered a significantly lower cost amount of \$25,000. Staff reviewed the cost and determined it an acceptable amount for the differing site condition.

The approved PCO for this item has been identified by staff as a changed site condition. Staff and the Contractor agreed to a lump sum amount of \$25,000 for this additional work with no increase

in contract term. The Contractor proceeded with this work at its own risk in order to continue with the remainder of the contract work.

Furnish and Install Additional Fire Alarm Devices and Perform a Bi-directional Amplification Test

\$6,213.00



Fire Alarm Strobe on outside of the building

The contract documents require the installation of a fire alarm bell on the exterior wall and one fire alarm horn in both the men’s room and women’s room. Following a building inspection, the City of Marlborough Fire Chief required: that a fire alarm beacon be added to the exterior of the building, the fire alarm horns in the men’s room and women’s room be changed to a fire alarm beacon and horn, and a second fire alarm beacon and horn be added to the men’s locker room area. In addition, the Fire Chief also required that a bi-directional amplification test be conducted in the building to certify that the fire department’s radio signals are adequate throughout the building. These items had to be added, as directed by the City of Marlborough

Fire Chief, to be in compliance with the Massachusetts Building Code which was in effect at the time of the bid. The Contractor had to furnish and install the fire alarm beacons and horns and perform the required test to ensure code compliance before a building occupancy permit can be issued.

The approved PCO for this item has been identified by MWRA staff as a design error. Staff and the Contractor have agreed to a lump sum amount of \$6,213.00 for this additional work with no increase in contract term. The Contractor proceeded with this work at its own risk in order to continue with the remainder of the contract work.

CONTRACT SUMMARY:

	<u>Amount</u>	<u>Time</u>	<u>Dated</u>
Original Contract:	\$3,367,000.00	365 Days	05/02/17
Change Orders:			
Change Order 1*	\$24,332.00	0 Days	01/16/18
Change Order 2*	\$19,604.00	0 Days	01/31/18
Change Order 3*	\$19,019.00	0 Days	02/07/18
Change Order 4*	\$11,332.40	0 Days	04/19/18
Change Order 5*	\$23,034.00	0 Days	05/01/18
Change Order 6*	\$23,993.00	60 Days	05/03/18
Change Order 7*	\$24,184.00	0 Days	05/14/18
Change Order 8*	\$24,840.00	0 Days	05/21/18
Change Order 9*	\$22,323.00	0 Days	05/31/18
Change Order 10	\$29,346.00	0 Days	06/20/18
Change Order 11*	\$22,963.00	0 Days	07/03/18

Change Order 12*	\$17,357.00	0 Days	07/03/18
Change Order 13*	\$19,911.09	0 Days	08/29/18
Change Order 14*	\$9,633.57	0 Days	09/29/18
Change Order 15*	\$5,066.00	0 Days	10/03/18
Change Order 16	\$31,213.00	<u>0 Days</u>	Pending
Total of Change Orders:	\$328,151.06	60 Days	
Adjusted Contract:	\$3,695,151.06	425 Days	

*Approved under delegated authority

If Change Order 16 is approved, the cumulative value of all change orders to this contract will be \$328,151.06 or 9.8% of the original contract amount. Work on this contract is approximately 99% complete.

BUDGET/FISCAL IMPACT:

The Final FY19 Capital Improvement Program includes \$7,646,984 for Contract 6650, Modifications to Existing Waterworks Facilities (the original three-location contract), of which \$3,655,455 is for Contract 6650B. Contract 6650B, Western Operations Marlborough Maintenance Facility is the second phase of the three phases of Contract 6650. Including this change order for a lump sum amount of \$31,213, the adjusted sub phase total will be \$3,695,151.06 or \$39,696.06 over budget. This amount will be absorbed within the five-year CIP spending cap.

MBE/WBE PARTICIPATION:

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



MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

Telephone: (617) 242-600
Fax: (617) 788-489
TTY: (617) 788-497

PERSONNEL & COMPENSATION COMMITTEE MEETING

to be held on

Wednesday, October 17, 2018

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

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

Time: Immediately following Water Committee

AGENDA

A. Information

1. Update on Massachusetts Equal Pay Act

B. Approvals

1. PCR Amendments for October 2018
2. Appointment of Deputy Contracts Manager, Procurement

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the

Personnel and Compensation Committee

September 19, 2018

A meeting of the Personnel and Compensation Committee was held on September 19, 2018 at the Authority headquarters in Charlestown. Committee Chair Wolowicz presided. Present from the Board were Messrs. Carroll, Cotter, Foti, Pappastergion, Peña, Vitale and Walsh. Mr. Flanagan was absent. Among those present from the Authority staff were Frederick Laskey, Steven Remsberg, David Coppes, Carolyn Fiore, Thomas Durkin, Michele Gillen, Kathleen Murtagh, Andrea Murphy, Patterson Riley, Kathy Soni and Kristin MacDougall. The meeting was called to order at 10:15 a.m.

Approvals

* PCR Amendments – September, 2018

Staff recommended changes to the Position Control Register to add two new positions in the Tunnel Redundancy Program department and to change one job title to address Operations Division staffing needs. Mr. Foti joined the meeting during discussion.

The Committee recommended approval (ref. P&C A1.)

* Appointment of Director, Procurement

The Committee recommended approval (ref. P&C A.2.)

* Appointment of Manager, Occupational Health and Safety, Administration

Mr. Carroll joined the meeting during discussion.

The Committee recommended approval (ref. P&C A.3.)

* Appointment of Manager, Training and Development, Human Resources

* Committee recommendation approved by the Board on September 19, 2018

The Committee recommended approval (ref. P&C A.4)

* Appointment of Manager, Power Generation, Deer Island

The Committee recommended approval (ref. P&C A.5)

* Appointment of Senior Program Manager, Water Quality

The Committee recommended approval (ref. P&C A.6)

* Appointment of Director, Design and Construction, Tunnel Redundancy

The Committee recommended approval (ref. P&C A.7)

The meeting adjourned at 10:29 a.m.


* Committee recommendation approved by the Board on September 19, 2018

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: October 17, 2018
SUBJECT: Massachusetts Equal Pay Act (MEPA)



COMMITTEE: Personnel and Compensation


Andrea Murphy, Director of Human Resources
Patterson Riley, Special Assistant for Affirmative Action
Preparer/Title

INFORMATION

VOTE


Michele S. Gillen
Director of Administration

RECOMMENDATION:

For information only.

DISCUSSION:

A new state law, the Massachusetts Equal Pay Act (MEPA) went into effect July 1, 2018. The Act clarifies the already existing requirement that employers pay employees at the same rate of pay, without distinction by gender, for comparable work. MEPA defines “comparable work” as any work that requires substantially similar skill, effort and responsibility, and is performed under similar working conditions. A job description or job title standing alone does not determine what work is comparable. Rather, jobs as actually performed in the workplace must be compared. The law provides that even if a male employee and a female employee have different job titles, if those jobs are “comparable”, as defined by the law, an employee of one gender may not receive lesser wages than an employee of a different gender unless permitted by factors provided by the law.

Employers are permitted to pay employees at different pay rates for comparable work only when based on a limited number of factors such as a seniority system and/or the education, training or experience of a particular employee. In addition, MEPA prohibits employers from seeking wage or salary history information or an applicant’s current salary on an employment application. MWRA’s employment application has been updated so that it does not request salary history or current salary from an applicant nor does MWRA seek such information from candidates during an interview. MEPA also prohibits an employer from retaliating against an employee who complains or reports a violation of the law.

Under MEPA, an employee or applicant for employment who believes his or her rights have been violated under the law has three years from the date of the alleged violation to file a claim in court. There is no requirement that employees or applicants first file a complaint with the

Massachusetts Commission Against Discrimination. Employers who have been found to have violated MEPA may be liable for unpaid wages, an additional equal amount in liquidated damages, attorney fees and court costs. Any employer that violates the pay history or anti-retaliation provisions of the Act may also be liable for damages.

MEPA provides an affirmative defense to liability for employers if, within the prior three years and prior to the commencement of the employee action, the employer has completed a good-faith self-evaluation of its pay practices and has demonstrated that reasonable progress has been made toward eliminating any wage differentials based on gender identified by the self-evaluation.

MWRA chose to first conduct a self-evaluation of compensation paid to non-union managers. On July 9, 2018, MWRA executed a one-year contract with a pay equity consultant approved under the Executive Director's delegated authority at an estimated cost of \$27,500.

As part of MWRA's self-evaluation, positions are placed in comparable job groupings based on substantially similar skill, effort, responsibility, and working conditions. This part of the project is expected to be completed in the next few weeks. Individual employee compensation within each comparable job grouping will be reviewed in light of the permissible pay factors of seniority, education, training or experience. The consultant will then analyze any employee pay differences and make recommendations. Additionally, staff are working with the consultant to determine the extent of the law's application to organized employees represented by unions. Finally, the consultant may make recommendations regarding MWRA policies, programs and practices.

Staff anticipate returning to the Board with a project update by early in 2019.

STAFF SUMMARY


TO: Board of Director
FROM: Frederick A Laskey, Executive Director
DATE: October 17, 2018
SUBJECT: October PCR Amendments



COMMITTEE: Personnel and Compensation


Andrea Murphy, Director of Human Resources
Preparer/Title

 INFORMATION

 X VOTE

Michele S. Gillen
Director, Administration

RECOMMENDATION:

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

DISCUSSION:

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

October PCR Amendments

The five PCR changes include four positions in the Finance Division to accurately reflect the nature of the job duties. The Operations Division amendment reflects changing one position to address staffing needs.

The amendments are:

Finance Division Organizational Changes

1. Title change to two filled positions in the Comptroller's Department, Finance Division from Payroll Coordinator, Unit 1, Grade 19, to Payroll/Payables Coordinator, Unit 1, Grade 19 to provide consistency between the Accounts Payable Unit and Payroll Unit to reflect new responsibilities in both units.
2. Title and grade change to two positions (one filled, one vacant) in the Comptroller's Department, Finance Division from Payables Coordinator, Unit 1, Grade 16, to Payroll/Payables Coordinator, Unit 1, Grade 19 to provide consistency between the Accounts Payable Unit and Payroll Unit for similar work requiring similar qualifications and to reflect new responsibilities in both units.

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

Operations Organizational Changes

1. Title and grade change to a vacant position in the Engineering and Construction Department, Operations Division, Staff Engineer, Unit 9, Grade 19, to Senior Staff Engineer, Electrical, Unit 9, Grade 25 to meet staffing needs.

This amendment requires Board approval after review by the Personnel and Compensation Committee.

BUDGET/FISCAL IMPACT:

The annualized budget impact of this PCR amendment will range in cost from \$7,525 to a cost of \$59,672. The actual cost will depend on the salary rate for the new incumbents. Staff will ensure that the cost increase associated with these PCR amendments will not result in spending over the approved FY19 Wages and Salaries budget.

ATTACHMENTS:

Old Job Descriptions
New Job Descriptions

**MASSACHUSETTS WATER RESOURCES AUTHORITY
POSITION CONTROL REGISTER AMENDMENTS
FISCAL YEAR 2019**

PCR AMENDMENTS REQUIRING PERSONNEL & COMPENSATION COMMITTEE APPROVAL - October 17, 2018

Number	Current		Type	Current Title	UN	GR	Amended Title	UN	GR	Current/Budget	Estimated		Estimated Annual		Reason For Amendment	
	PCR #	V/F								Salary	New Salary	\$ Impact				
P6	4310019	F	T	Payroll Coordinator	1	19	Payroll/Payables Coordinator	1	19	\$74,841	\$74,841	\$74,841	\$0	\$0	To provide consistency between the Payroll Unit and the Accounts Payable Unit for similar work requiring similar qualifications.	
P7	4310024	F	T	Payroll Coordinator	1	19	Payroll/Payables Coordinator	1	19	\$55,905	\$55,905	\$55,905	\$0	\$0	To provide consistency between the Payroll Unit and the Accounts Payable Unit for similar work requiring similar qualifications.	
PERSONNEL & COMP COMMITTEE TOTAL=										5	SUBTOTAL:		\$0	-	\$0	

PCR AMENDMENTS REQUIRING BOARD APPROVAL- October 17, 2018

Number	Current		Type	Current Title	UN	GR	Amended Title	UN	GR	Current/Budget	Estimated		Estimated Annual		Reason For Amendment	
	PCR #	V/F								Salary	New Salary	\$ Impact				
B7	4310014	F	T, G	Payables Coordinator	1	16	Payroll/Payables Coordinator	1	19	\$50,311	\$55,905	\$55,905	\$5,594	\$5,594	To provide consistency between the Payroll Unit and the Accounts Payable Unit for similar work requiring similar qualifications.	
B8	4310013	V	T, G	Payables Coordinator	1	16	Payroll/Payables Coordinator	1	19	\$50,311	\$55,905	\$74,841	\$5,594	\$24,530	To provide consistency between the Payroll Unit and the Accounts Payable Unit for similar work requiring similar qualifications.	
B9	55250158	V	T, G	Staff Engineer	9	19	Senior Staff Engineer, Electrical	9	25	\$81,462	\$77,800	\$107,348	-\$3,662	-\$29,548	To better meet the department's staffing needs.	
BOARD TOTAL =										0	SUBTOTAL:		\$7,525	-	\$59,672	
GRAND TOTAL =										5	TOTAL ESTIMATED COSTS:		\$7,525	-	\$59,672	

**MWRA
POSITION DESCRIPTION**

OLD

POSITION: Payroll Coordinator

DIVISION: Finance

DEPARTMENT: Controller

BASIC PURPOSE:

Provides administrative support to Payroll Department for processing payroll transactions in accordance with MWRA policies and procedures.

SUPERVISION RECEIVED:

Works under the general supervision of the Deputy Payroll Manager.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Oversees timekeeping and payroll processing and audits data for compliance and accuracy.
- Maintains payroll personnel records.
- Acts as the on-site Payroll/HR contact and answers employee payroll and benefit questions.
- Assists in the dissemination and implementation of administrative policies and procedures.
- Handles all routine administrative functions including but not limited to answering telephones, recording internal and external messages, and opening and sorting the mail.
- Prepares letters, memos, reports, correspondence and performs other clerical duties including basic bookkeeping and maintaining files.
- Assists with the preparation, compilation, collation and disbursement of various reports, projects, etc as requested.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

- (A) A two (2) year degree in Accounting, Business Administration or a related field preferred: and
- (B) Understanding of a variety of administrative functions as acquired through three (3) to five (5) years experience in payroll and/or office administration. One (1) year experience in a supervisory position is preferred: or
- (C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Proficiency in Microsoft Word and Excel required.
- (B) Excellent communication and interpersonal skills are required.

SPECIAL REQUIREMENTS:

None

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

The employee must frequently lift and/or move up to 5 pounds and occasionally lift and/or move more than 10 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 works in an office environment where the noise level is low and moderately quiet.

November 2013

**MWRA
POSITION DESCRIPTION**



POSITION: Payroll/Payables Coordinator

PCR#:

DIVISION: Finance

DEPARTMENT: Controller

BASIC PURPOSE:

Provides administrative support to Payroll Department for processing payroll transactions in accordance with MWRA policies and procedures.

Expedites, audits, processes and maintains invoices vouched for payment on the automated accounts payable and procurement systems, researches vendor inquiries, resolves problems, tracks non-conforming invoices, generates reports and adheres to published processing deadlines and schedules.

SUPERVISION RECEIVED:

Works under the general supervision of the Deputy Payroll Manager or the Admin, Accounts Payable.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Oversees timekeeping and payroll processing and audits data for compliance and accuracy.
- Maintains payroll personnel records.
- Acts as the on-site Payroll/HR contact and answers employee payroll and benefit questions.
- Assists in the dissemination and implementation of administrative policies and procedures.

- Handles all routine administrative functions including but not limited to answering telephones, recording internal and external messages, and opening and sorting the mail.
- Prepares letters, memos, reports, correspondence and performs other clerical duties including basic bookkeeping and maintaining files.
- Assists with the preparation, compilation, collation and disbursement of various reports, projects, etc. as requested.
- Adheres to published schedules and deadlines for payment processing.
- Processes/generates documents in accordance with chart of accounts, agreement terms and applicable policies and procedures.
- Reviews and expedites payable-related information for accuracy and completeness.
- Maintains accurate payable documentation/reports as directed.
- Researches and resolves vendor/MWRA/system inquiries/discrepancies as requested.
- Generates and distributes payment-related tracking or status reports.
- Interacts and coordinates with divisional staff.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

- (A) A two (2) year degree in Accounting, Business Administration or a related field preferred; and
- (B) Three (3) to five (5) years of experience in payroll/accounts payable or related office activity. One (1) year experience in a supervisory position is preferred; and
- (C) One (1) year experience in the use of PC-based systems; or
- (D) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Demonstrated skills in Microsoft Office products including Word and Excel required.
- (B) Demonstrated ability to perform work assignments accurately with minimum supervision.
- (C) Excellent communication and interpersonal skills are required.
- (D) Ability to adhere to published processing deadlines and schedules.
- (E) Basic reading, writing, mathematical and oral communication skills.

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

PHYSICAL DEMANDS:

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

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

The employee must frequently lift and/or move up to 5 pounds and occasionally lift and/or move more than 10 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 works in an office environment where the noise level is low and moderately quiet.

October 2018

**MWRA
POSITION DESCRIPTION**

OLD

POSITION: Payroll Coordinator

DIVISION: Finance

DEPARTMENT: Controller

BASIC PURPOSE:

Provides administrative support to Payroll Department for processing payroll transactions in accordance with MWRA policies and procedures.

SUPERVISION RECEIVED:

Works under the general supervision of the Deputy Payroll Manager.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Oversees timekeeping and payroll processing and audits data for compliance and accuracy.
- Maintains payroll personnel records.
- Acts as the on-site Payroll/HR contact and answers employee payroll and benefit questions.
- Assists in the dissemination and implementation of administrative policies and procedures.
- Handles all routine administrative functions including but not limited to answering telephones, recording internal and external messages, and opening and sorting the mail.
- Prepares letters, memos, reports, correspondence and performs other clerical duties including basic bookkeeping and maintaining files.
- Assists with the preparation, compilation, collation and disbursement of various reports, projects, etc as requested.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

- (A) A two (2) year degree in Accounting, Business Administration or a related field preferred: and
- (B) Understanding of a variety of administrative functions as acquired through three (3) to five (5) years experience in payroll and/or office administration. One (1) year experience in a supervisory position is preferred: or
- (C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Proficiency in Microsoft Word and Excel required.
- (B) Excellent communication and interpersonal skills are required.

SPECIAL REQUIREMENTS:

None

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

The employee must frequently lift and/or move up to 5 pounds and occasionally lift and/or move more than 10 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 works in an office environment where the noise level is low and moderately quiet.

November 2013

**MWRA
POSITION DESCRIPTION**



POSITION: Payroll/Payables Coordinator

PCR#:

DIVISION: Finance

DEPARTMENT: Controller

BASIC PURPOSE:

Provides administrative support to Payroll Department for processing payroll transactions in accordance with MWRA policies and procedures.

Expedites, audits, processes and maintains invoices vouched for payment on the automated accounts payable and procurement systems, researches vendor inquiries, resolves problems, tracks non-conforming invoices, generates reports and adheres to published processing deadlines and schedules.

SUPERVISION RECEIVED:

Works under the general supervision of the Deputy Payroll Manager or the Admin, Accounts Payable.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Oversees timekeeping and payroll processing and audits data for compliance and accuracy.
- Maintains payroll personnel records.
- Acts as the on-site Payroll/HR contact and answers employee payroll and benefit questions.
- Assists in the dissemination and implementation of administrative policies and procedures.

- Handles all routine administrative functions including but not limited to answering telephones, recording internal and external messages, and opening and sorting the mail.
- Prepares letters, memos, reports, correspondence and performs other clerical duties including basic bookkeeping and maintaining files.
- Assists with the preparation, compilation, collation and disbursement of various reports, projects, etc. as requested.
- Adheres to published schedules and deadlines for payment processing.
- Processes/generates documents in accordance with chart of accounts, agreement terms and applicable policies and procedures.
- Reviews and expedites payable-related information for accuracy and completeness.
- Maintains accurate payable documentation/reports as directed.
- Researches and resolves vendor/MWRA/system inquiries/discrepancies as requested.
- Generates and distributes payment-related tracking or status reports.
- Interacts and coordinates with divisional staff.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

- (A) A two (2) year degree in Accounting, Business Administration or a related field preferred; and
- (B) Three (3) to five (5) years of experience in payroll/accounts payable or related office activity. One (1) year experience in a supervisory position is preferred; and
- (C) One (1) year experience in the use of PC-based systems; or
- (D) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Demonstrated skills in Microsoft Office products including Word and Excel required.
- (B) Demonstrated ability to perform work assignments accurately with minimum supervision.
- (C) Excellent communication and interpersonal skills are required.
- (D) Ability to adhere to published processing deadlines and schedules.
- (E) Basic reading, writing, mathematical and oral communication skills.

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

PHYSICAL DEMANDS:

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

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

The employee must frequently lift and/or move up to 5 pounds and occasionally lift and/or move more than 10 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 works in an office environment where the noise level is low and moderately quiet.

October 2018

**MWRA
POSITION DESCRIPTION**



POSITION: Payables Coordinator

PCR#:

DIVISION: Finance

DEPARTMENT: Controller

BASIC PURPOSE:

Expedites, audits, processes and maintains invoices vouched for payment on the automated accounts payable and procurement systems, researches vendor inquiries, resolves problems, tracks non-conforming invoices, generates reports and adheres to published processing deadlines and schedules. Provides administrative support for Payroll Unit, as needed.

SUPERVISION RECEIVED:

Works under the general supervision of the Payables Supervisor.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Adheres to published schedules and deadlines for payment processing.
- Processes/generates documents in accordance with chart of accounts, agreement terms and applicable policies and procedures.
- Reviews and expedites payable-related information for accuracy and completeness.
- Maintains accurate payable documentation/reports as directed.
- Researches and resolves vendor/MWRA/system inquiries/discrepancies as requested.
- Generates and distributes payment-related tracking or status reports.
- Interacts and coordinates with divisional staff.

- Performs payroll time entry and time sheet review at the direction of the Payroll Manager, or designee.
- Handles routine payroll administrative functions including, but not limited to, filing payroll records, answering telephones, recording internal and external messages and opening and sorting the mail.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) Two year college program or secretarial/business school in accounting, business administration or related field ; and
- (B) Three (3) to five (5) years experience in payroll/accounts payable or related office activity; and
- (C) One (1) year experience in the use of PC-based systems; or
- (D) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Demonstrated skills in Microsoft Office products including Word and Excel required.
- (B) Demonstrated ability to perform work assignments accurately with minimum supervision.
- (C) Ability to adhere to published processing deadlines and schedules.
- (D) Basic reading, writing, mathematical and oral communication skills.

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

PHYSICAL DEMANDS:

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

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 occasionally lift and/or move up to 10 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 must occasionally work near moving mechanical parts called Lektriever files.

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

November 2011

**MWRA
POSITION DESCRIPTION**



POSITION: Payroll/Payables Coordinator

PCR#:

DIVISION: Finance

DEPARTMENT: Controller

BASIC PURPOSE:

Provides administrative support to Payroll Department for processing payroll transactions in accordance with MWRA policies and procedures.

Expedites, audits, processes and maintains invoices vouched for payment on the automated accounts payable and procurement systems, researches vendor inquiries, resolves problems, tracks non-conforming invoices, generates reports and adheres to published processing deadlines and schedules.

SUPERVISION RECEIVED:

Works under the general supervision of the Deputy Payroll Manager or the Admin, Accounts Payable.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Oversees timekeeping and payroll processing and audits data for compliance and accuracy.
- Maintains payroll personnel records.
- Acts as the on-site Payroll/HR contact and answers employee payroll and benefit questions.
- Assists in the dissemination and implementation of administrative policies and procedures.

- Handles all routine administrative functions including but not limited to answering telephones, recording internal and external messages, and opening and sorting the mail.
- Prepares letters, memos, reports, correspondence and performs other clerical duties including basic bookkeeping and maintaining files.
- Assists with the preparation, compilation, collation and disbursement of various reports, projects, etc. as requested.
- Adheres to published schedules and deadlines for payment processing.
- Processes/generates documents in accordance with chart of accounts, agreement terms and applicable policies and procedures.
- Reviews and expedites payable-related information for accuracy and completeness.
- Maintains accurate payable documentation/reports as directed.
- Researches and resolves vendor/MWRA/system inquiries/discrepancies as requested.
- Generates and distributes payment-related tracking or status reports.
- Interacts and coordinates with divisional staff.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

- (A) A two (2) year degree in Accounting, Business Administration or a related field preferred; and
- (B) Three (3) to five (5) years of experience in payroll/accounts payable or related office activity. One (1) year experience in a supervisory position is preferred; and
- (C) One (1) year experience in the use of PC-based systems; or
- (D) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Demonstrated skills in Microsoft Office products including Word and Excel required.
- (B) Demonstrated ability to perform work assignments accurately with minimum supervision.
- (C) Excellent communication and interpersonal skills are required.
- (D) Ability to adhere to published processing deadlines and schedules.
- (E) Basic reading, writing, mathematical and oral communication skills.

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

PHYSICAL DEMANDS:

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

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

The employee must frequently lift and/or move up to 5 pounds and occasionally lift and/or move more than 10 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 works in an office environment where the noise level is low and moderately quiet.

October 2018

**MWRA
POSITION DESCRIPTION**

OLD

POSITION: Payables Coordinator

PCR#:

DIVISION: Finance

DEPARTMENT: Controller

BASIC PURPOSE:

Expedites, audits, processes and maintains invoices vouched for payment on the automated accounts payable and procurement systems, researches vendor inquiries, resolves problems, tracks non-conforming invoices, generates reports and adheres to published processing deadlines and schedules. Provides administrative support for Payroll Unit, as needed.

SUPERVISION RECEIVED:

Works under the general supervision of the Payables Supervisor.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Adheres to published schedules and deadlines for payment processing.
- Processes/generates documents in accordance with chart of accounts, agreement terms and applicable policies and procedures.
- Reviews and expedites payable-related information for accuracy and completeness.
- Maintains accurate payable documentation/reports as directed.
- Researches and resolves vendor/MWRA/system inquiries/discrepancies as requested.
- Generates and distributes payment-related tracking or status reports.
- Interacts and coordinates with divisional staff.

- Performs payroll time entry and time sheet review at the direction of the Payroll Manager, or designee.
- Handles routine payroll administrative functions including, but not limited to, filing payroll records, answering telephones, recording internal and external messages and opening and sorting the mail.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) Two year college program or secretarial/business school in accounting, business administration or related field ; and
- (B) Three (3) to five (5) years experience in payroll/accounts payable or related office activity; and
- (C) One (1) year experience in the use of PC-based systems; or
- (D) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

- (A) Demonstrated skills in Microsoft Office products including Word and Excel required.
- (B) Demonstrated ability to perform work assignments accurately with minimum supervision.
- (C) Ability to adhere to published processing deadlines and schedules.
- (D) Basic reading, writing, mathematical and oral communication skills.

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

PHYSICAL DEMANDS:

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

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 occasionally lift and/or move up to 10 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 must occasionally work near moving mechanical parts called Lektriever files.

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

November 2011

**MWRA
POSITION DESCRIPTION**



POSITION: Payroll/Payables Coordinator

PCR#:

DIVISION: Finance

DEPARTMENT: Controller

BASIC PURPOSE:

Provides administrative support to Payroll Department for processing payroll transactions in accordance with MWRA policies and procedures.

Expedites, audits, processes and maintains invoices vouched for payment on the automated accounts payable and procurement systems, researches vendor inquiries, resolves problems, tracks non-conforming invoices, generates reports and adheres to published processing deadlines and schedules.

SUPERVISION RECEIVED:

Works under the general supervision of the Deputy Payroll Manager or the Admin, Accounts Payable.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Oversees timekeeping and payroll processing and audits data for compliance and accuracy.
- Maintains payroll personnel records.
- Acts as the on-site Payroll/HR contact and answers employee payroll and benefit questions.
- Assists in the dissemination and implementation of administrative policies and procedures.

- Handles all routine administrative functions including but not limited to answering telephones, recording internal and external messages, and opening and sorting the mail.
- Prepares letters, memos, reports, correspondence and performs other clerical duties including basic bookkeeping and maintaining files.
- Assists with the preparation, compilation, collation and disbursement of various reports, projects, etc. as requested.
- Adheres to published schedules and deadlines for payment processing.
- Processes/generates documents in accordance with chart of accounts, agreement terms and applicable policies and procedures.
- Reviews and expedites payable-related information for accuracy and completeness.
- Maintains accurate payable documentation/reports as directed.
- Researches and resolves vendor/MWRA/system inquiries/discrepancies as requested.
- Generates and distributes payment-related tracking or status reports.
- Interacts and coordinates with divisional staff.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

- (A) A two (2) year degree in Accounting, Business Administration or a related field preferred; and
- (B) Three (3) to five (5) years of experience in payroll/accounts payable or related office activity. One (1) year experience in a supervisory position is preferred; and
- (C) One (1) year experience in the use of PC-based systems; or
- (D) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Demonstrated skills in Microsoft Office products including Word and Excel required.
- (B) Demonstrated ability to perform work assignments accurately with minimum supervision.
- (C) Excellent communication and interpersonal skills are required.
- (D) Ability to adhere to published processing deadlines and schedules.
- (E) Basic reading, writing, mathematical and oral communication skills.

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

PHYSICAL DEMANDS:

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

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

The employee must frequently lift and/or move up to 5 pounds and occasionally lift and/or move more than 10 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 works in an office environment where the noise level is low and moderately quiet.

October 2018

MWRA
POSITION DESCRIPTION



POSITION: Staff Engineer

PCR#:

DIVISION: Operations

DEPARTMENT: Engineering & Construction, Planning, Operations Engineering, Capital Engineering Deer Island, Metro Process Control

BASIC PURPOSE:

Participates in the development, execution, and management of various electrical engineering, engineering or construction engineering and maintenance projects. Provides engineering or electrical engineering expertise and data analysis for the planning, design, and construction of projects for wastewater and waterworks systems and facilities.

SUPERVISION RECEIVED:

Works under the general supervision of senior staff.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Works on tasks related to the evaluation, planning, design, electrical modification / replacement or construction of facilities or equipment for wastewater treatment plants, wastewater pumping stations, CSO facilities, headworks facilities, collection system components, water treatment facilities, water pumping stations, distribution and transmission lines, and support buildings and equipment.
- Participates in the preparation of concept and preliminary design reports, designs, and cost estimates. Participates in the development, implementation and monitoring of construction and service contracts, plans and specifications for proposed electrical modifications / replacements, permit applications and permits. Participates in shop drawing reviews.
- Utilizes Authority databases to gather and summarize facility and system operational data and assists senior engineering staff with evaluation and presentation of operational data.

- Participates in the development of calculations, design documents and the gathering of information for inclusion in engineering reports, construction activities, proposed electrical modifications / replacements, technical or planning studies, and system and facility evaluations.
- Participates in the engineering resolution and recommendations to electrical engineering problems.
- Participates in overseeing the work of professional engineering consultants, including electrical engineering consultants, as well as construction firms for quality and responsiveness of work products, budgets and schedules, and conformance to contract terms.
- Participates in the inspection of construction, electrical or maintenance work for conformance to plans and specifications, and makes minor revisions to meet local conditions encountered in field; plans sequence of work with contractors on jobs and submits progress reports. Acts as a Resident Engineer on minor construction projects.
- Requires participation in emergency response to any/all MWRA emergencies if assigned to Operations Engineering or Metro Process Control.
- Participates in contract administration tasks.

SECONDARY DUTIES:

- Drafts internal or external memoranda, correspondence, reports, and specifications.
- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A bachelors' degree in electrical engineering, engineering or related field required; and
- (B) One (1) to two (2) years of design, construction or electrical engineering experience preferred: or
- (C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Familiarity with computer software packages such as MS Word, Excel, and AutoCad.

(B) Demonstrated written and oral communication skills.

SPECIAL REQUIREMENTS:

Valid Mass Class D Drivers license for Operations Engineering and Construction Departments

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

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

WORK ENVIRONMENT:

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

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

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

February 2018

**MWRA
POSITION DESCRIPTION**



POSITION: Senior Staff Engineer, Electrical

PCR#: 5525019

DIVISION: Operations

DEPARTMENT: Engineering & Construction

BASIC PURPOSE:

Provides electrical engineering assistance in the review and design of projects related to the rehabilitation and capital improvement of waterworks and wastewater facilities and infrastructure from conceptual planning through construction. Assists Operations to resolve emergency problems arising from equipment failure or malfunction.

SUPERVISION RECEIVED:

Works under the general supervision of the Program Manager Electrical, Engineering and Construction.

SUPERVISION EXERCISED:

Provides direction to designers and drafters on assigned projects, and provides support to medium voltage technicians, and electrical staff as needed.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Assists in the in-house planning and design of various water and wastewater repair, improvement and replacement projects, and in the investigation and resolution of construction and operations problems.
- Provides electrical engineering support to the operating departments for the operations and maintenance programs of MWRA facilities.
- Participates in the design of in-house projects including development of project plans, specifications, cost estimates, schedules, proposals for bid and review of shop drawings.
- Establishes design criteria and applicable code requirements and performs analytical calculations for assigned work.

- Develops procedures to ensure safe and efficient operations, maintenance and testing practices.
- Provides technical review of consultant-prepared reports and design projects and contractor shop drawings.
- Participates in the preparation of standard specifications.
- Participates in field investigations in order to verify and obtain information on existing facilities, structures, systems and equipment.
- Prepares equipment and material quantity takeoffs for cost estimates.
- Develops and maintains records, drawings and maintenance listings as required.

SECONDARY DUTIES:

- Performs other related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) Knowledge of principles of and practices of electrical engineering as normally attained through a four (4) year college program in engineering or a related field; and
- (B) Demonstrated knowledge of electrical transmission and distribution equipment design as acquired through three (3) to five (5) years of experience; or
- (C) Any equivalent education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Working knowledge of variable frequency drives and programmable logic controllers required.
- (B) Clear understanding of the National Electric Code and Life Safety Code.
- (C) Proficiency with personal computers and knowledge of word processing, spreadsheets and engineering applications software required.
- (D) Understanding of and experience with CADD systems required.

(E) Excellent interpersonal, oral and written communication skills are required.

SPECIAL REQUIREMENTS:

Engineer-in-Training certificate preferred.

A valid Massachusetts Driver's License required.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

The physical demands described 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 and talk or hear. The employee is frequently required to use hands to finger, handle or operate objects, including office equipment, controls and reach with hands and arms. The employee is occasionally required to stand and walk.

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


WORK ENVIRONMENT:

The work environment characteristics described here are representative of those employee encounters while performing the essential functions of this job. There are no specific environmental conditions noted.



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

October 2018

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: October 17, 2018
SUBJECT: Appointment of Deputy Contracts Manager, Administration Division

COMMITTEE: Personnel & Compensation


Andrea Murphy, Director, Human Resources
Douglas J. Rice, Director, Procurement 
Preparer/Title

X VOTE
____ INFORMATION


Michele S. Gillen
Director of Administration

RECOMMENDATION:

To approve the appointment of Mr. Jesse Daly to the position of Deputy Contracts Manager, Administration Division (Unit 6, Grade 13) at an annual salary of \$117,774.18 commencing on a date to be determined by the Executive Director.

DISCUSSION:

The position of Deputy Contracts Manager became vacant upon the promotion of the incumbent. Organizationally, this position reports to the Director of Procurement.

The Deputy Contracts Manager works closely with all staff to facilitate the procurement of construction and professional and non-professional service contracts. The Deputy Contracts Manager implements Authority-wide policies and procedures, and applicable laws, for all elements of contracting, including the creation, review and/or evaluation of contract documents, RFQs, RFPs, proposals and bids, and the review and analysis of amendments, change orders and contract close-out documents. The Deputy Contracts Manager assists the Director of Procurement in the defense of contract claims and the dispute resolution process and advises the Law Division and Authority senior staff on contract matters as required. The Deputy Contracts Manager reviews, drafts and/or negotiates contract terms and conditions, oversees the preparation and updating of standard forms and other contract provisions and participates in the close-out and final payment stages of contracts. The Deputy Contracts Manager directs Assistant Contract Managers in the performance of similar duties and functions on certain projects.

Selection Process

This position was posted internally and one internal candidate was referred for an interview. The Director of Administration and Director of Procurement interviewed the candidate and determined that Mr. Daly was qualified to fill this position based on his experience, abilities, knowledge, and education.

Mr. Daly has been employed as an Assistant Contract Manager in MWRA's Procurement Department for 6 years. In his current role, Mr. Daly has worked closely with Deputy Contract Managers as well as staff agency wide, and has managed or assisted in the procurement of professional services, non-professional services, and construction contracts, from initial submission of contract requisition through advertisement, bidding, selection, award, and contract execution. He has worked on over seventy procurements and has a strong command of the Authority's policies and procedures. In addition, Mr. Daly has managed contract negotiations, submissions and amendments, and project close outs. Prior to his position at MWRA, Mr. Daly worked for the New York State Division of Budget as Senior Contract Manager. In that role he developed and managed procurements that supported the Division of the Budget and Executive Chamber's program initiatives and policy planning activities, including procurement of a multi-agency software development and implementation contract valued at \$45 million. Mr. Daly is well respected by MWRA management and his peers Authority wide.

Mr. Daly holds a Bachelors Degree in Media Studies from the University at Buffalo, State University of New York, and a Master of Science in Information Science from the University at Albany, State University of New York.

BUDGET/FISCAL IMPACT:

There are sufficient funds in the FY19 CEB for this position.

ATTACHMENTS:

Jesse Daly's Resume
Position Description
Procurement Department Organization Chart

Jesse M. Daly

EXPERIENCE

Massachusetts Water Resources Authority – Boston, MA

November 2012-present

Assistant Contracts Manager

- Manage the procurement process for construction contracts bid in compliance with MGL Chapter 30 and 149 (including filed sub bids) and for professional services contracts in a wide range of subject areas including engineering, legal services, training, environmental services, and other specialized projects such as the Co-Digestion Pilot Project and Emerging Technology RFI.
- Conduct contract negotiations to reduce cost and maintain protections for the Authority; draft and revise compensation terms; interpret terms in established contracts when questions arise or when preparing contract amendments.
- Guide colleagues on implementation of current departmental procedures and technologies; propose new approaches to streamline or otherwise improve current practices.
- Advise program staff on appropriate presentation of project scope and construction specifications for publication.
- Prepare all solicitation documents and define appropriate contract terms, including establishment of a compensation structure; draft amendments to existing contracts.
- Convene and facilitate selection committees to gather input on project scope and evaluation criteria, and discuss the qualities of proposals received leading to selection for award; instruct committee members and lead them through the procurement process.
- Review and refine staff summaries for the Executive Director and Board.
- Deliver Authority-wide training presentations for selection committee members.

New York State Division of the Budget – Albany, NY

July 2007-Nov 2012

Senior Contract Administrator

- Developed and managed procurements that supported the Division of the Budget and Executive Chamber's program initiatives and policy planning activities, including procurement of a multi-agency software development and implementation contract valued at \$45 million.
- Trained and oversaw contract office staff; reviewed colleagues' work product; supervised graduate student interns and trained incoming Procurement Team Lead).
- Administrated a \$100 million portfolio of active contracts for the Division of the Budget and Governor's Office.
- Managed concurrent procurement processes to meet scheduled milestones for multiple active procurements, including: creation of solicitation documents (such as RFPs), development of evaluation criteria, cost analysis, administration of the selection process, contract negotiation, drafting contract terms, and compilation of contract documents for the procurement record.

Jesse M. Daly

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- Documented and defended the validity of the evaluation and selection process for any procurement challenged by a bid protest, the press, public interest groups, or other members of the public.
 - Monitored and interpreted State Finance Law, procurement rules and regulations; developed and applied appropriate changes to improve the Division's procedures, such as policies for Equal Employment Opportunity and participation goals for Minority and Woman Owned Business Enterprises.
 - Communicated complex topics (e.g., compensation structure, contract terms, statutory regulations and policy requirements) on behalf of the Division and host agencies, including the Governor's Office, to diverse stakeholders: state auditors, legal counsel, vendors/contractors, internal program staff, agency partners and the public.

New York State Assembly Information Center – Albany, NY
Librarian/Research Specialist

January 2004-July 2007

- Performed policy and legal research for Assembly Majority central staff (Ways and Means Committee Tax/Fiscal, Budget, and Economics Groups; Program and Counsel; and the Program Development Group).
- Collected information utilizing online databases, subscription-based information services, legislative and state agency libraries, and direct requests from primary sources.
- Conducted staff training for using an internal database for 20 Ways and Means policy analysts.
- Managed library of statutory reports, vertical files, microfiche, and legislative reference materials.

EDUCATION

School of Information Science and Policy University at Albany, State University of New York
Master of Science in Information Science, May 2004

University at Buffalo, State University of New York
Bachelor of Arts in Media Study, February 1999

AWARDS & HONORS

Beta Phi Mu International Information and Library Studies Honor Society

Bachelor's Degree Awarded with Distinction

University at Buffalo Honors Program with Academic Scholarship

TRAINING

Inspector General – Massachusetts Certified Public Purchasing Official (MCPPO):

-Public Contracting Overview

-Design & Construction Contracting Seminar

Blue Print Reading – Review of contract drawings and architectural plans/elevations/details.

COMPUTER SKILLS

MWRA Supplier Portal, MS Office (high proficiency), Adobe Acrobat Pro, MGL Online Search, MA Corporate Database, SDO Database, LexisNexis, various scholarly online databases.

**MWRA
POSITION DESCRIPTION**

POSITION: Deputy Contracts Manager

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.

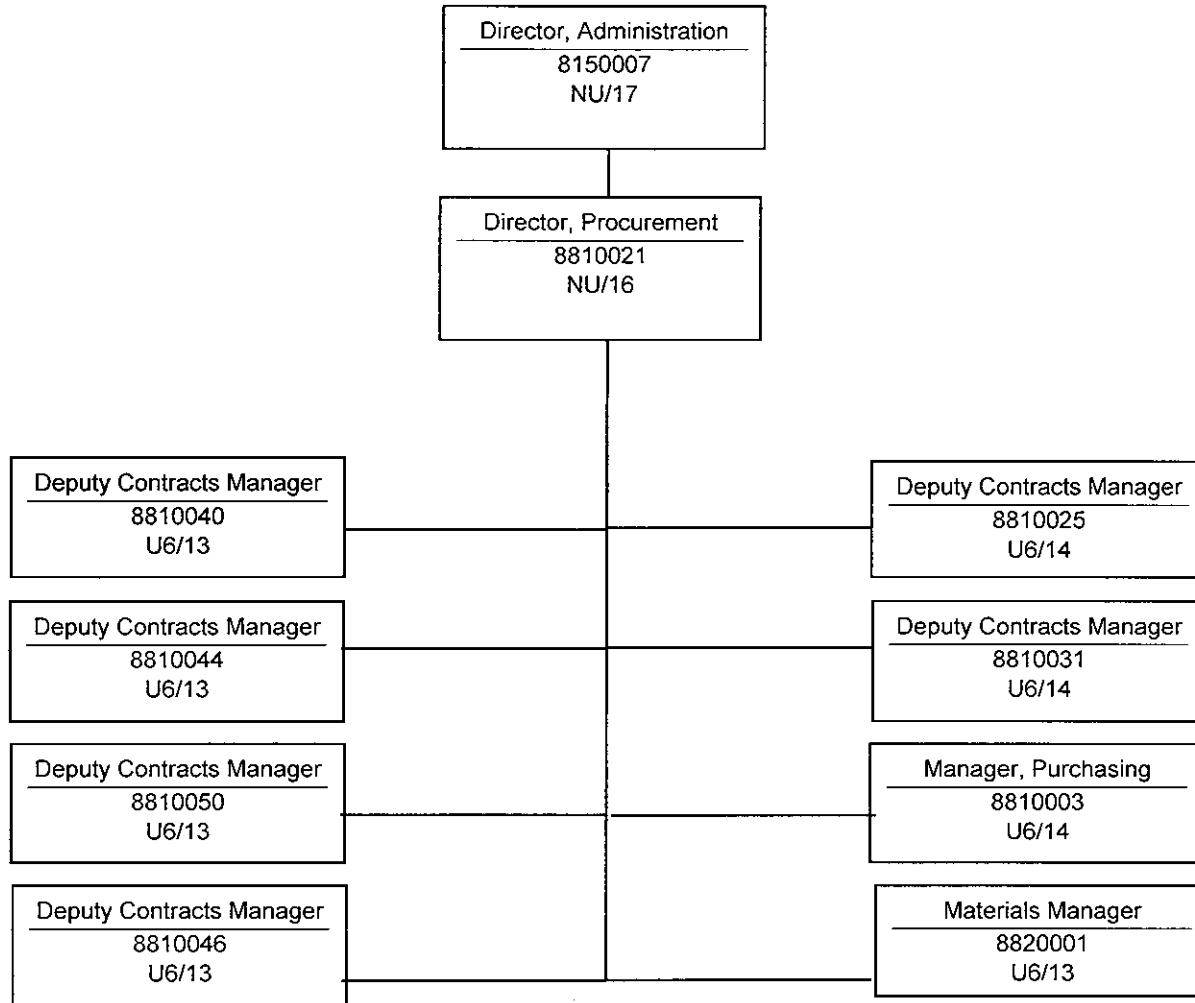
WORK ENVIRONMENT:

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

**Administration
Procurement**
October 2018





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

BOARD OF DIRECTORS' MEETING

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

to be held on

Wednesday, October 17, 2018

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

Time: 1:00 p.m.

REVISED AGENDA

I. APPROVAL OF MINUTES

II. REPORT OF THE CHAIR

III. REPORT OF THE EXECUTIVE DIRECTOR

IV. BOARD ACTIONS

A. Approvals

1. Update on the Consultant Support Structure for the Metropolitan Tunnel Redundancy Program (ref. W A.1)
2. PCR Amendments for October 2018 (ref. P&C B.1)
3. Appointment of Deputy Contracts Manager, Procurement (ref. P&C B.2)

B. Contract Awards

1. Thermal and Hydro Power Plant Maintenance, Deer Island Treatment Plant: IPC Lydon, Contract S578 (ref. WW B.1)
2. Supply and Delivery of Ferric Chloride to the Deer Island Treatment Plant: Kemira Water Solutions, Bid WRA-4564 (ref. WW B.2)
3. Braintree-Weymouth Pump Station Improvements, Design and Engineering Services during Construction: Wright-Pierce, Contract 7435 (ref. WW B.3)

4. Supply and Delivery of Soda Ash to the John J. Carroll Water Treatment Plant: Ciner Wyoming LLC, Bid WRA-4559 (ref. W.B.1)

C. Contract Amendments/Change Orders

1. Remote Headworks Upgrade: Arcadis U.S., Inc., Contract 7206, Amendment 6 (ref. WW C.1)
2. Southern Extra High Pipeline – Section 111 (Boston): P. Gioioso and Sons, Inc., Contract 6454, Change Order 5 (ref. W C.1)
3. Western Operations Marlborough Maintenance Facility: E. A. Colangeli Construction Co., Inc., Contract 6650B, Change Order 16 (ref. W C.2)

V. OTHER BUSINESS

VI. CORRESPONDENCE TO THE BOARD

VII. EXECUTIVE SESSION

VIII. ADJOURNMENT

MASSACHUSETTS WATER RESOURCES AUTHORITY
Meeting of the Board of Directors
September 19, 2018

A meeting of the Board of Directors of the Massachusetts Water Resources Authority was held on Wednesday, September 19 at the Authority headquarters in Charlestown. Vice Chair Carroll presided. Present from the Board were Messrs. Cotter, Foti, Pappastergion, Peña, Vitale and Walsh and Ms. Wolowicz. Chair Beaton and Mr. Flanagan were absent. Among those present from the Authority staff were Frederick Laskey, Executive Director, Steven Remsberg, General Counsel, David Coppes, Chief Operating Officer, Carolyn Fiore, Deputy Chief Operating Officer, Thomas Durkin, Director of Finance, Michele Gillen, Director of Administration, Andrea Murphy, Director of Human Resources, Ria Convery, Assistant Secretary, and Kristin MacDougall, Assistant to the Board of Directors. The meeting was called to order at 1:03 p.m.

REPORT OF THE EXECUTIVE DIRECTOR

Mr. Laskey recognized Steven Remsberg who will retire from his position as MWRA General Counsel.

APPROVAL OF SEPTEMBER 19, 2018 MINUTES

Upon a motion duly made and seconded, it was

Voted: to approve the minutes of the Board of Directors' meeting of September 19, 2018 as presented and filed with the records of the meeting.

APPROVALS

PCR Amendments for September 2018

Upon a motion duly made and seconded, it was

Voted: to approve amendments to the Position Control Register (PCR) for September 2018 as presented and filed with the records of the meeting.

Appointment of Director, Procurement

Upon a motion duly made and seconded, it was

Voted: to approve the appointment of Mr. Douglas Rice to the position of Director, Procurement (Non-Union, Grade 16) in the Administration Division, at an annual salary of \$147,556.00, commencing on a date to be determined by the Executive Director.

Appointment of Manager, Occupational Health and Safety, Administration

Upon a motion duly made and seconded, it was

Voted: to approve the appointment of Mr. Matthew Dam to the position of Manager, Occupational Health & Safety (Non-Union, Grade 14) in the Administration Division, at an annual salary of \$133,574.00 commencing on a date to be determined by the Executive Director.

Appointment of Manager, Training and Development, Human Resources

Upon a motion duly made and seconded, it was

Voted: to approve the appointment of Mr. Imad Sandakly to the position of Manager, Training & Development, (Non-Union, Grade 14) in the Administration Division, at an annual salary of \$117,300.00, commencing on a date to be determined by the Executive Director.

Appointment of Manager, Power Generation, Deer Island

Upon a motion duly made and seconded, it was

Voted: to approve the appointment of Mr. Vinh Nguyen to the position of Manager, Power Generation (Unit 6, Grade 12), at an annual salary of \$107,875.60, commencing on a date to be determined by the Executive Director.

Appointment of Senior Program Manager, Water Quality, ENQUAL

Upon a motion duly made and seconded, it was

Voted: to approve the appointment of Ms. Kimberly LeBeau to the position of Senior Program Manager, Water Quality (Unit 9, Grade 30), at an annual salary of \$130,406.12, commencing on a date to be determined by the Executive Director.

Appointment of Director, Design and Construction, Tunnel Redundancy

Upon a motion duly made and seconded, it was

Voted: to approve the appointment of Mr. Frederick Brandon to the position of Director, Design and Construction, Tunnel Redundancy Department (Non Union, Grade 16) at an annual salary of \$148,000.00 commencing on a date to be determined by the Executive Director.

Bond Defeasance of Future Debt Service

Upon a motion duly made and seconded, it was

Voted: to authorize the Executive Director or his designee, on behalf of the Authority, to enter into, execute and deliver all necessary agreements and other instruments and to take such other actions necessary to effectuate the redemption and defeasance of an aggregate principal amount of \$13,930,000 of outstanding MWRA senior bonds including to cause the escrow of cash and/or securities in an amount necessary to fund such redemption and defeasance, in order to reduce the debt service requirement by \$15,538,400 in the FY20 through FY22 timeframe.

Deer Island HEEC Cable Funding

Upon a motion duly made and seconded, it was

Voted: to authorize the Executive Director or his designee, on behalf of the Authority, to reach an understanding with Harbor Electric Energy Company (HEEC) regarding the application of progress payments as and when made by MWRA "on account" including prior to completion of the cable to keep HEEC's interim construction financing and borrowing costs to a minimum relative to HEEC's expenditures upon the new cross harbor electric cable, all consistent with the provisions of the parties' May 9, 2017 Memorandum of Agreement approved by the Board of Directors on May 8, 2017.

CONTRACT AWARDS

Supply and Delivery of Sodium Hypochlorite to the Deer Island Treatment Plant: Borden & Remington Corporation, Bid WRA-4552

Upon a motion duly made and seconded, it was

Voted: to approve the award of Purchase Order Contract WRA-4552, a one-year contract for the supply and delivery of sodium hypochlorite to the Deer Island Treatment Plant, to the lowest responsive bidder, Borden & Remington Corporation, and to authorize the Executive Director, on behalf of the Authority, to execute said purchase order contract in an amount not to exceed \$1,613,683.48 for a period of one year, from November 17, 2018 through November 16, 2019.

Supply, Delivery and Disposal of Regenerated Activated Carbon to the Deer Island Treatment Plant: Carbon Activated Corporation, Bid WRA 4554

Upon a motion duly made and seconded, it was

Voted: to approve the award of Purchase Order Contract WRA-4554, a three-year contract for the supply, delivery, and disposal of regenerated activated carbon for the Deer Island Treatment Plant, to the lowest responsive bidder, Carbon Activated Corporation, and to authorize the Executive Director, on behalf of the Authority, to execute said purchase order contract in an amount not to exceed \$1,110,750 for a period of three years, from December 11, 2018 through December 10, 2021.

Struvite, Scum, Sludge and Grit Removal Services at the Deer Island Treatment Plant: Moran Environmental Recovery, Bid WRA-4551

Upon a motion duly made and seconded, it was

Voted: to approve the award of Purchase Order Contract WRA-4551, a two-year contract to provide struvite, scum, sludge and grit removal services at the Deer Island Treatment Plant, to the lowest responsive bidder, Moran Environmental Recovery, LLC, and to authorize the Executive Director, on behalf of the Authority, to execute said purchase order contract in an amount not to exceed \$901,960 for a period of two years, from September 19, 2018 through September 18, 2020.

Demolition of Section 56 Water Main, General Edwards Bridge: R. Zoppo Corporation, Contract 7536

Upon a motion duly made and seconded, it was

Voted: to approve the award of Contract 7536, Demolition of Section 56 Water Main, General Edwards Bridge, to the lowest responsible and eligible bidder, R. Zoppo Corporation, and to authorize the Executive Director, on behalf

of the Authority, to execute said contract, in the bid amount of \$1,898,500, for a contract term of 150 calendar days from the Notice to Proceed.

CONTRACT AMENDMENTS/CHANGE ORDERS

Dental Insurance: Delta Dental of Massachusetts, Contract A613, Amendment 1

Upon a motion duly made and seconded, it was

Voted: to approve Amendment 1 to Contract A613, with Delta Dental of Massachusetts, exercising the first option to renew, increasing the contract amount by \$360,000, from \$352,000 for a total not-to-exceed amount of \$712,000, and extending the term for twelve months from January 1, 2019 to December 31, 2019.

Chelsea Creek Headworks Upgrade: BHD/BEC JV 2015, A Joint Venture, Contract 7161, Change Order 18

Upon a motion duly made and seconded, it was

Voted: to authorize the Executive Director, on behalf of the Authority, to approve Change Order 18 to Contract 7161, Chelsea Creek Headworks Upgrade, with BHD/BEC 2015, A Joint Venture, for an amount not to exceed \$400,000.00, increasing the contract amount from \$79,438,131.46 to \$79,838,131.46, with no increase in contract term.

Further, to authorize the Executive Director to approve additional change orders as may be needed to Contract 7161 in an amount not to exceed the aggregate of \$250,000, in accordance with the Management Policies and Procedures of the Board of Directors.

Northern Intermediate High Section 110 – Stoneham and Wakefield: Albanese D&S, Inc., Contract 7478, Change Order 13

Upon a motion duly made and seconded, it was

Voted: to authorize the Executive Director, on behalf of the Authority, to approve Change Order 13 to Contract 7478, Northern Intermediate High Section 110 – Stoneham and Wakefield, with Albanese D&S, Inc., for a net amount not to exceed \$5,132.00, increasing the contract amount from \$18,567,415.21 to \$18,572,547.21, with no increase in the contract term.

Further, to authorize the Executive Director to approve additional change

orders as may be needed to Contract 7478 in an amount not to exceed the aggregate of \$250,000, in accordance with the Management Policies and Procedures of the Board of Directors.

Wachusett Aqueduct Pumping Station: BHD/BEC JV 2015, A Joint Venture, Contract 7157, Change Order 51

Upon a motion duly made and seconded, it was

Voted: to authorize the Executive Director, on behalf of the Authority, to approve Change Order 51 to Contract 7157, Wachusett Aqueduct Pumping Station, with BHD/BEC JV 2015, A Joint Venture, for a lump sum amount of \$273,755.00, increasing the contract amount from \$50,144,832.03 to \$50,418,587.03, 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.

EXECUTIVE SESSION

It was moved to enter executive session to discuss real estate and litigation and thereafter to return to open session solely for the purpose of adjournment.

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Carroll		
Cotter		
Foti		
Pappastergion		
Peña		
Vitale		
Walsh		
Wolowicz		

Voted: to enter executive session for the purpose of discussing strategy with respect to real estate and litigation, in that such discussions may have a detrimental effect upon the negotiating positions of the Authority.

* * * *

EXECUTIVE SESSION

The meeting returned to open session at 1:22 p.m. and adjourned at 2:19 p.m.

Approved: October 17, 2018

Attest:

Andrew M. Pappastergion, Secretary

DRAFT