



MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard
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Frederick A. Laskey
Executive Director

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ADMINISTRATION, FINANCE & AUDIT COMMITTEE MEETING

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

to be held on

Wednesday, December 14, 2016

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

Time: 10:00 a.m.

AGENDA

A. Information

1. MWRA's Climate Change Strategy
2. Construction Site Safety
3. Delegated Authority Report – November 2016
4. FY17 Financial Update and Summary as of November 2016

B. Approvals

1. Transmittal of the FY18 Proposed Capital Improvement Program to the MWRA Advisory Board

C. Contract Awards

1. Janitorial Services at the Chelsea Facility: S.J. Services, Inc., Contract WRA-4302Q

D. Contract Amendments/Change Orders

1. Assignment and Assumption of Contract EXE-033 Security Guard Services for Various MWRA Facilities from AlliedBarton Security Services, Inc. to Universal Protection Service, LLC d/b/a Allied Universal Security Services; and Contract EXE-033, Amendment 1

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the
Administration, Finance and Audit Committee

November 16, 2016

A meeting of the Administration, Finance and Audit Committee was held on November 16, 2016 at the Authority headquarters in Charlestown. Chairman Vitale presided. Present from the Board were Ms. Wolowicz and Messrs. Carroll, Cotter, Pappastergion, Peña, and Walsh; Mr. Blackmon joined the meeting in progress. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Mike Hornbrook, Michele Gillen, Carolyn Francisco Murphy, Tom Durkin, Steve Estes-Smargiassi, Kathy Soni, John Vetere, Matt Horan, Andrew Hildick-Smith, and Bonnie Hale. The meeting was called to order at 10:15 a.m.

Information

MWRA's Climate Change Strategy – Energy Initiatives

This item was referred to the full Board for discussion.

First Quarter FY17 Orange Notebook

Staff gave a presentation focusing on Laboratory indicators. Fred Laskey said that Mike Delaney, Steve Rhode and the Laboratory staff are the unsung heroes of the MWRA, performing very important functions every day. In addition, with the School Lead Testing Program, they have stepped-up their efforts by testing thousands of water samples for schools throughout the MWRA service area and providing valuable information to them.

Delegated Authority Report – October 2016

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

FY17 Financial Update and Summary – October 2016

Staff gave a presentation on the financials, and there was general discussion and question and answer. Mr. Carroll suggested shortening the projected time frame for the lead service removal loan program.

Historical Overtime Spending Trends for MWRA

There was general discussion and question and answer.

(Mr. Blackmon joined the meeting.)

Approvals

***Approval of the Seventy-Fourth Supplemental Bond Resolution**

Staff provided a summary and there was question and answer. The Committee recommended approval of the 74th Supplemental Bond Resolution (ref. agenda item B.1).

Contract Awards

***Security Equipment Maintenance and Repair Services: Viscom Systems, Inc., Contract EXE-038**

There was general discussion and question and answer. The Committee recommended approval of the contract award (ref. agenda item C.1).

The meeting adjourned at 11:00 a.m.

* Approved as recommended at November 16, 2016 Board of Directors meeting.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: December 14, 2016
SUBJECT: MWRA's Climate Change Strategy



COMMITTEE: Administration, Finance & Audit

X INFORMATION
 VOTE

Carolyn Fiore, Deputy Chief Operating Officer
Lise Marx, Senior Program Manager
Daniel Nvule, Senior Program Manager
Stephen Estes-Smargiassi, Director, Planning
Preparer/Title


Michael J. Hornbrook
Chief Operating Officer

Both the Commonwealth and the City of Boston have issued comprehensive Climate Change strategies to ensure that agencies are taking measures to mitigate and reduce greenhouse gas emissions, and building resilience and adaptation to the impacts of climate change.

MWRA has also been a national leader with early and continued efforts to adapt to and mitigate climate change. At the November Board meeting, staff presented information on MWRA's considerable progress in renewable energy initiatives, improving energy efficiency, and reducing greenhouse gas emissions. This staff summary describes MWRA's efforts in adapting to the impacts of climate change and sea level rise.

RECOMMENDATION:

For information only. Staff will also provide a PowerPoint presentation at this meeting.

DISCUSSION:

MWRA has closely followed the evolving science of climate change over the past few years with the goal of fully understanding potential impacts to MWRA facilities and operations. At the direction of the Board, MWRA now has begun implementation of adaptation measures and strategies to protect MWRA facilities from the impacts of more severe weather and sea level rise. To summarize:

- MWRA staff have evaluated the potential impacts of sea level rise on 30 coastal or near-coastal wastewater and administrative/operational facilities. Thirteen facilities were determined to be within the most recent 100 year flood elevation as set by the Federal Emergency Management Agency (FEMA) or to be conservative, within one foot above the 100 year elevation. Three additional facilities were potentially impacted when 2.5 feet of sea level rise was added to the analyses; three more facilities would likely be affected only by a hurricane and eleven facilities were unlikely to be impacted.
- The design of the Deer Island WWTP incorporated anticipated sea level rise. Deer Island is designed to survive a direct hit from a Category 3 hurricane with minimal damage

limited to support systems only with no flooding in the DITP process areas. The plant was designed for a 100 year storm event plus two feet of sea level rise. Even with the newer FEMA maps, DITP's design and operations will not be impacted by flooding. During design, plant process tanks were raised almost two feet, and the outfall was increased from 24 to 24.5 feet in diameter to accommodate sea level rise without reducing the plant capacity.

- MWRA regularly assesses equipment and facility envelopes for repair and rehabilitation needs. After Super Storm Sandy in October, 2012, staff began an evaluation of coastal facilities to understand each facility's ability to withstand such a storm were it to make landfall in the Boston area. The most current information available on climate change scenarios and sea level rise has been and will continue to be incorporated into design and construction contracts to ensure hardening against potential impacts. Currently, Alewife Brook Pump Station, and the Chelsea Creek Headworks are undergoing significant facility renovations and design contracts were amended to incorporate the most recent FEMA 100 year flood elevation and sea level rise projection information. The recently completed Chelsea Creek Screenhouse included physical modifications to address sea level rise and flooding.
- Where major work is not occurring in the short-term, staff have identified immediate needs for flood proofing improvements; short-term measures have already been made at ten of the highest priority facilities, and three additional sites are in the process of design or procurement of materials.
- Evaluations of the impact of climate change on the water supply system indicate that MWRA's safe yield will likely increase slightly, while many neighboring communities will see reductions in reliability due to the more variable future precipitation patterns. MWRA will be able to provide both emergency and regular supply to more surrounding communities in the future.

SEA LEVEL RISE AND EXTREME CLIMATE ADAPTATION

MWRA has a pragmatic approach to climate change adaptation. Efforts have focused on the evaluation and implementation of measures to allow MWRA facilities to withstand a significant storm event that could occur in Eastern Massachusetts.

Staff looked at potential impacts on water supply, and wastewater transport and treatment facilities. Most water facilities are located inland and were found to have very limited exposure to coastal flooding. Wastewater facilities are, however, generally located closer to the coast and were the focus of staff investigations.

Record drawings were used to identify their lowest critical flood elevations. In many cases, this was the first floor elevation. However, it also included hatches and other access points on the facility exterior. Staff performed specific site inspections of all the facilities and took note of any major exterior equipment such as emergency power generators that might get damaged during a major storm. Using specialized software, staff then performed an inundation analysis that used

Figure 1: LiDar Based Simulated Inundation of the Chelsea Area at 100 Year Plus 2.5 Feet Flood Level



flood.

The second benchmark is the 100-year flooding elevation with an additional 2.5 feet added. Some regional organizations, such as Boston Harbor Association, as well as NYC Department of Environmental Protection, have adopted this benchmark as a reasonable and conservative estimate of mid-term sea level rise. These benchmarks can be seen on the photo of the Chelsea Creek Headworks to the right. Various climate models have varying estimates for the degree of rise anticipated by 2050 or 2100, and 2.5 feet generally falls in the middle of them. When compared to the recent Boston Research Advisory Group (BRAG¹) Sea Level Rise (SLR) projections, 2.5 feet appears to provide protection to a little beyond 2070 even for the highest CO₂ emissions scenarios. Staff are using this benchmark as an appropriately conservative measure of vulnerability, addressing issues of both storm intensity and sea level rise. Staff will also continue to monitor the evolving science and consensus on sea level rise and change benchmarks as appropriate.

the three-dimensional elevation data that was recently collected by the Commonwealth through Light Detection and Ranging (LiDAR). These data are approximately ten times more accurate than the old data that were based on the two dimensional topographical maps.

The critical flooding elevations were compared to two benchmarks. The first benchmark is the existing 100-year flooding elevation from the most recent Federal Emergency Management Agency (FEMA) flood maps. To be conservative, staff evaluated facilities whose first floor elevation was within a foot above the 100-year

Figure 2: Flood Elevations At Chelsea Creek Headworks



Once facilities were evaluated against these benchmarks and the risk of flooding under different scenarios was established, staff evaluated the service impacts associated with each location. Staff could then evaluate the appropriate mitigation measures to protect the facility from damage. These measures could include short-term measures such as installation of

¹ The Boston Research Advisory Group (BRAG) was established in 2015 to develop a consensus on the possible climate changes and sea level rise (SLR) that the City of Boston will face in the future by 2030, 2050, 2070, and 2100

stop log grooves at doors or other openings (as shown on Figure 3 to the right), or pre-storm deployment of sandbags or barriers to protect sensitive equipment or facilities. Most of the highest priority sites have had initial flood protection measures installed (see Table 1 on page 7). If the facilities were expected to undergo significant rehabilitation within a short term, that design of facility improvements will address the identified flood risks through changes in facility design, installation of permanent barriers or relocation of key equipment. This is being currently done with the rehabilitation of the Chelsea Creek Screenhouse (recently completed), Chelsea Creek Headworks and the Alewife Brook Pump Station.

Figure 3: Stoplogs At The Alewife Pump Station



It is important to note that the Deer Island Treatment Plant, which represents MWRA's single largest infrastructure investment, is extremely flood resistant due to its 1986 design that took into consideration sea level rise before it became a mainstay issue. The elevation of the treatment plant and process tanks, almost two feet higher than conventional planning would have called for, and increase in diameter of the outfall, is often cited nationally as the first actual physical climate change adaptation effort.

MWRA Hurricane/Severe Weather Emergency Action Plan

Climate change will likely increase storm intensity and frequency as well as cause sea level rise. Staff updated MWRA's hurricane/severe weather Emergency Action Plan (EAP) that deals with deployment of personnel and equipment for continuous operation (to the extent feasible) and maintaining critical functions during a severe storm. In addition to the possibility of flooding at wastewater pump stations and headworks, the Chelsea and Charlestown facilities may be either inaccessible due to road flooding or have low-level facility flooding. MWRA's revised Hurricane/Severe Weather EAP includes redeployment of key operational and maintenance response functions such as valve crews, pipe repairs, equipment maintenance crews, engineering and SCADA staff to alternative sites for the duration of the storm so as to respond effectively to system emergencies following such an event.

Beyond severe weather, the further possibility of a direct hit from a Category 2 or above hurricane to Boston Harbor also required EAP updates for a worst case contingency where Chelsea Maintenance Facility and Charlestown Navy Yard would need to be fully evacuated. The 2013 EAP changes include planning for a full evacuation of both MWRA's Chelsea Maintenance and Charlestown Navy Yard facilities (approximately 550 Chelsea staff and 170 CNY staff) and reconstitution at alternative sites for continuity of operations while the flooded, and possibly fouled, sites are being restored to active status. The EAP also includes discussion

of a triggering plan that evaluates hurricane path and strength and the inherent uncertainties that need consideration so as to make an evacuation decision in enough time to act.

Other details of a full Chelsea site evacuation include transfer of over 300 MWRA Chelsea based vehicles from the potential flood zone, protection of buildings, and movement of critical records and equipment stored below the flood elevations. Staff have evaluated available temporary flood barriers and are considering longer term flood protection improvements to alleviate the need to fully evacuate the Chelsea facility.

In the event of an evacuation, a backup Operation Control Center (OCC) was created and will allow SCADA control of both the water and wastewater systems to be switched from Chelsea to a mirrored site at the Carroll Water Treatment Plant. DITP PICS is a stand alone from MWRA's SCADA system by design. It was also designed with multiple backup control rooms in many facilities across the island. The treatment plant has one main control room in the Primary Operations building controlling all functions of the treatment plant operation. There are six backup control rooms spread throughout the facility, each in a different process area. Each control room is fully redundant to the main control room in its capability. Drills on the use of the back-up OCC are conducted regularly.

Charlestown Navy Yard has received a similar review and the elevation of MIS equipment above expected flood levels and relocation of MWRA first floor staff to higher floors has greatly reduced MWRA flood risk concerns at the site.

MWRA has purchased additional large portable pumps for dewatering facilities that could be flooded and has held training exercises for staff on the deployment and set up of these emergency pumps and associated suction/discharge piping.

MWRA Is an Essential Component of a Regional Water Supply Adaptation Strategy

Cooperating with other partners that included the Water Research Foundation, the National Center for Atmospheric Research, the Stockholm Environment Research Institute, Tufts University and UMass, staff have evaluated the potential impact of a changing climate on MWRA's water system safe yield. While many locally supplied communities can anticipate diminished yields of their sources, MWRA's system is likely to see a modest increase in its Safe Yield from the increased but more varied precipitation due to the sheer size of its reservoir storage, thereby setting the stage for MWRA to potentially provide water to these communities during periods of stress or more regularly.

Indeed, during the 2016 drought, the MWRA has provided emergency water supply to Worcester, Cambridge and Burlington.

Other On-Going Climate Change-Related Efforts

Due to the anticipated increased intensity of storms and the possibility of flooding communities downstream of supply reservoirs, staff are researching more effective ways of operating these reservoirs. Specifically, given the best storm forecasts available and antecedent soil moisture

conditions, the analysis would identify the optimal reservoir releases shortly before and during the storm. Likewise, the sewer collection system may be affected by both more intense storms and higher tidal effects. Nationally, this has been recognized as a potential issue, but the reliability of the shorter time interval data needed to tackle the analysis is still generally regarded too low for useful evaluations. Staff are continuing to track the efforts of other systems, including efforts by BWSC, to gain from their experiences and studies.

MWRA Cooperation with Regional Stakeholders and Other Agencies

Staff are continuing to work with the State, along with regional organizations and academic institutions, to identify how MWRA's existing long-term environmental data sets can be used to help assess projected impacts of climate change. On May 13, 2015, the Metro Mayors Climate Preparedness Summit convened at the UMass Boston campus to sign the Metro Boston Climate Preparedness Commitment, a regional agreement with the goal of establishing a common policy framework to prepare for the impacts of climate change. As an active participant in discussions held among the fourteen municipalities that constitute the Metropolitan Mayors Coalition (MMC), and as one of seventeen regional leaders to sign the Commitment, MWRA has pledged to emphasize regionalism and work collectively with stakeholders to tackle the challenge of climate change resiliency. MWRA participated in the second Metro Mayors Climate Preparedness Summit on November 17th, at which the regional mayors pledged to move their communities toward a goal of being "carbon-neutral" by 2050. Staff are integrating this framework of sustainability into planning initiatives and project reviews to align MWRA's planning with long-term goals.

Staff continue to work with key stakeholders (including MassPort, UMass Boston, City of Boston, BWSC, EEA, DCAMM, and Trust for Public Land) to share progress on vulnerability assessments underway and contribute to the regional climate conversation. Staff also regularly attend Metro Boston Climate Preparedness Taskforce meetings, facilitated by the Metro Area Planning Council (MAPC), and participate in Metro Mayors Technical Advisory Team (TAT) meetings as well as area specific local groups such as the Alewife Flood Resilience Focus Group.

Table 1: Flood Ranking and Impact Risk of MWRA Coastal Facilities

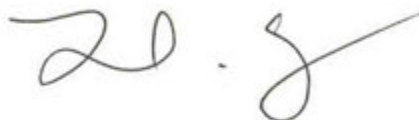
	Rank	Facility Name	Mitigation Actions Comments
Likely Affected By 100 Yr Storm	1	PELLETIZING PLANT	Barrier around backup generator and transformers erected. (*)
	2	HOUGHS NECK PUMP STATION	Stop plank barriers installed in entryways. (*)
	3	SQUANTUM PUMP STATION	Stop plank barriers installed in entryways. (*)
	4	ALFORD ST FACILITY	Sand bags will be used for flood protection. Future work under review.
	5	QUINCY PUMP STATION	Stop plank barriers installed in entryways. (*)
	6	CHELSEA CREEK SCREENHOUSE	Installed retaining wall to protect generator and main power panel; stop log barriers at all doors and roll-up doors; sump pumps inside building; two isolation gates to protect facility; raised ventilation louver above required elevation; led panels to protect all windows to required elevation; all new electrical installed above required elevation where feasible
	7	BRAINTREE-WEYMOUTH PUMP STATION	Stop plank barriers installed in entryways. (*)
	8	SOUTH BOSTON CSO TUNNEL VENTILATION BLDG	Flood protection plan drafted, flood protection specs designed, requisition for materials purchase submitted.
Likely Affected By Storm Within 1 ft below a 100 Yr Storm	9	SOUTH BOSTON CSO PUMP STATION	Flood protection design specs from vendor being reviewed in-house.
	10	CHARLESTOWN NAVY YARD FACILITY	MIS equipment and staff moved to upper floors.
	11	ALEWIFE BROOK PUMP STATION	Contractor installing flood protection system. Moving most critical equipment above flood level.
	12	CHELSEA CREEK HEADWORKS	Construction contract in progress to add stop log barriers at all doors including overhead coiling doors. Openings in façade being filled and moved above EL 119. Escape hatches, loading hatch and shaft opening being protected to EL 119. Valves being added to ductwork on mezzanine to isolate shafts upstream of influent gates.
	13	UNION PARK DETENTION & TREATMENT FACILITY	Operating Contractor designing specs which call for using sand bags at entry ways and isolating facility if required.
Likely Affected By a 100yr+2.5ft Storm	14	MYSTIC RIVER GATEHOUSE	No adverse impact if flooded.
	15	CHELSEA ADMINISTRATION FACILITY	Flood protection plan drafted, flood protection specs designed, material specs out on street for quote Flood protection design specs from Vendor being reviewed in-house and modified due to requirement changes.
	16	CHELSEA MAINTENANCE FACILITY	Flood protection plan drafted, flood protection specs designed, material specs out on street for quote Flood protection design specs from Vendor being reviewed in-house and modified due to requirement changes.
Likely Affected By a Hurricane Only	17	DEER ISLAND TREATMENT FACILITY	Plant processes designed to withstand a Category 3 Hurricane to allow uninterrupted facility operation. Some support facilities and access may be impacted.
	18	WIGGINS PUMP STATION	Will include flood plain protection in upcoming capital replacement project.
	19	COTTAGE FARM CSO FACILITY	
Very Unlikely To be Affected	20	DELAURI PUMP STATION	
	21	CARUSO PUMP STATION	
	22	PRISON POINT CSO FACILITY	
	23	SOMERVILLE MARGINAL CSO FACILITY	
	24	COLUMBUS PARK HEADWORKS	
	25	SOMERVILLE SAMPLING BUILDING	
	26	WARD STREET HEADWORKS	
	27	INTERMEDIATE PUMP STATION	
	28	LITTLE MYSTIC CHANNEL CSO FACILITY	
	29	HINGHAM PUMP STATION	
	30	NUT ISLAND HEADWORKS	

Projects have been prioritized from the top of the chart (most immediate risk) down through the rankings.

* In some cases specifications are being revised due to more recent updates to the FEMA flood maps. Future modifications to protection measures will be made as necessary.


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: December 14, 2016
SUBJECT: Construction Site Safety



COMMITTEE: Administration, Finance and Audit

INFORMATION
 VOTE


Michael J. Hornbrook
Chief Operating Officer

Cori Barrett, Director, Construction
Carolyn Francisco Murphy, Director, Procurement
Karen Gay-Valente, Director, Human Resources
Preparer/Title


Michele S. Gillen
Director, Administration

Two recent fatal accidents in the Greater Boston area prompted staff to review MWRA's safety protocols for construction sites. The serious nature of these events, which occurred in trenches where pipe was being installed, reminded us all of the dangers of working in and around construction sites in close proximity to live pipes often under pressure. This staff summary outlines MWRA's construction safety program and training efforts to minimize dangerous working conditions. MWRA recently held trench safety training classes for MWRA and community staff. The training was well attended with 106 participants and two additional classes have been scheduled in December.

RECOMMENDATION: For information only.

DISCUSSION:

Construction is a high-hazard industry and preventing worker fatalities and injuries on MWRA construction sites (both in-house and private contractor) is staff's highest priority. Workers on MWRA construction sites are entitled to a safe work site. Statutes, regulations, contract terms and conditions, worker safety training, and other programs and best practices guide MWRA and contractors working for MWRA as they strive for safe construction work sites and conditions.

MWRA Employee Construction Work:

MWRA has a comprehensive worker safety program that is designed to provide all MWRA employees, including employees who do construction work, with the training, knowledge, skills, tools and equipment needed to be safe at work. That program requires certain staff to have safety

certifications and it provides a rigorous and comprehensive safety training curriculum. The safety training program includes the following components:

- U.S. Occupational Safety and Health Administration OSHA 10 and OSHA 40¹;
- confined space entry;
- lockout/tag out;
- safety awareness;
- electrical safety for non-electricians;
- hot works welding safety;
- MBTA and Keolis track safety;
- construction zone traffic safety
- employee right to know; and
- excavation safety.

Many MWRA job descriptions require specific training, licenses and certificates (OSHA 10 and 40). Currently 322 MWRA employees have an OSHA 10 certification and 90 employees have an OSHA 40 Certification. Additionally, key supervisors in water and wastewater pipeline have excavation Safety Certificates.

All field staff receive an MWRA-issued Safety Bag which includes hard hats, safety glasses, safety vests, hearing protection, as well as additional items added by field managers depending on the work to be performed. MWRA's warehouses also stock personal protective gear including hard hats, protective glasses, protective ear muffs, gloves and safety vests. MWRA also provides steel toe boots and prescription safety glasses as non-stock items.

MWRA continuously reviews its safety training program to ensure that employees receive updated information and maintain their certifications.

A few years ago, MWRA initiated a new safety awareness training program for all employees. This program addressed safety practices and policies, a review of the MWRA Safety and Health Manual and personal protection equipment. This training is included as part of the New Hire Orientation presentation. Additionally, MWRA added a hot works welding safety training for all welding shop employees.

Finally in response to the recent accidents, MWRA provided Excavation Safety/Competent Person training in November 2016 for 54 field employees. Member communities were also invited to participate and 17 communities sent 51 employees to the training. Due to the overwhelming response, two days of additional training are scheduled for December 2016 and at this time 10 communities have 44 employees scheduled to attend along with 68 MWRA employees.

¹ OSHA 10 refers to OSHA training and certification in Construction Industry Safety and Health Training that emphasizes hazard identification, avoidance, control and prevention. OSHA 40 refers to Hazardous Waste Site Worker Training.

MWRA Construction Contractor Work:

While subject to statutory and regulatory safety requirements, provisions and oversight as well as MWRA contract terms and conditions, site safety of MWRA construction work by private contractors is the sole responsibility of the contractors.

Consistent with the Massachusetts statutes governing public construction by private contractors, all of MWRA's construction bid documents require contractors to certify in the general bid form that all employees that will be employed by the contractor at the worksite will have successfully completed a course in construction safety and health approved by the U.S. Occupational Safety and Health Administration (OSHA) and are OSHA 10 certified. The contractor is further required to furnish documentation of successful completion of such course with its first certified payroll report for each employee.

On Chapter 149 (building) projects on which only DCAMM certified contractors are eligible to bid, contractors must submit an Update Statement with their bid which includes information regarding OSHA violations. The contractor's original Application for Certification to DCAMM also includes self-reported information regarding OSHA violations. Pursuant to its bid documents and DCAMM's regulations, MWRA may consider this information in determining whether a contractor is eligible for award of a project.

DCAMM's Application for Certification and Update Statement are not applicable to Chapter 30 projects (non-buildings such as pipeline repair, rehabilitation or replacement). Rather, MWRA has wide discretion in its bid documents to conduct investigations and request any information necessary to determine the qualifications of a contractor and its ability to perform the work of a project. The information may include: similar projects completed; whether the bidder has failed to complete any projects; identification of equipment, forces and financial resources available to the contractor; and any other information related to the contractor's experience, ability and financial and business status. Consistent with DCAMM's Application for Certification and Update Statement, MWRA has specifically added the identification of OSHA violations as one of the information items it may request from a contractor to determine its qualifications and ability to perform the work of the project.

Construction contractors must also comply with all applicable OSHA standards and reporting requirements and failure to do so may result in OSHA fines or other follow up actions.

MWRA Permitting Program for Work on or near MWRA Infrastructure

MWRA issues permits pursuant to Section 8m of the Acts of 1984 (MWRA's Enabling Legislation) to public and private entities performing work in the vicinity of MWRA-owned infrastructure, including water and wastewater pipelines. As a result of these recent safety incidents, staff have added language to the application and the permit to remind permittees that their work must be in accordance with federal, state and local safety regulations. The applications must include plans signed and stamped by a Registered, Professional Engineer licensed in Massachusetts, specifically with respect to support of excavation and support of MWRA pipelines.

Applications for 8m permits are reviewed in-house by MWRA's operations and engineering staff to be sure that the proposed work will not adversely impact MWRA infrastructure. Issues identified in the review process are thoroughly vetted and frequently result in modifications of the engineering plans until MWRA staff are fully satisfied that the work includes appropriate safeguards for the infrastructure in the vicinity of the proposed projects. Site work and the implementation of safety plans during the construction are solely the responsibility of the permittee.

BUDGET/FISCAL IMPACT:

The MWRA Current Expense Budget includes adequate funding to provide training and protective equipment for staff.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: December 14, 2016
SUBJECT: Delegated Authority Report – November 2016




COMMITTEE: Administration, Finance & Audit

INFORMATION
 VOTE


Michele S. Gillen

Director, Administration

Barbara Aylward, Administrator A & F
Preparer/Title


Carolyn Francisco Murphy
Director of Procurement

RECOMMENDATION:

For information only. Attached is a listing of actions taken by the Executive Director under delegated authority for the period November 1 – 30 , 2016.

This report is broken down into three sections:

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

BACKGROUND:

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

Construction Contract Awards:

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

Change Orders:

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

Professional Service Contract Awards:

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

Non-Professional Service Contract Awards:

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

Purchase or Lease of Equipment, Materials or Supplies:

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

Amendments:

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

Amendments to the Position Control Register:

Amendments which result only in a change in cost center.

BUDGET/FISCAL IMPACT:

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

CONSTRUCTION/PROFESSIONAL SERVICES DELEGATED AUTHORITY ITEMS NOVEMBER 1 - 30, 2016

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMEND/CO	COMPANY	FINANCIAL IMPACT
C-1.	11/03/16	INSTRUMENTATION SYSTEMS SERVICES AWARD OF CONTRACT TO THE LOWEST RESPONSIVE BIDDER THE SCHEDULED PROCESS INSTRUMENTATION SYSTEMS SERVICES, NON-EMERGENCY AND EMERGENCY ON-CALL SERVICES AND REPLACEMENT PARTS FOR INSTRUMENTATION EQUIPMENT LOCATED AT TWENTY-EIGHT VARIOUS FACILITIES FOR A TERM OF 730 CALENDAR DAYS.	OP-330	AWARD	APOLLO SAFETY, INC.	\$203,510.00
C-2.	11/10/16	NORTHERN INTERMEDIATE HIGH SECTION 110 - READING AND WOBURN FURNISH AND INSTALL 6-INCH BYPASS DUCTILE IRON PIPING AND TWO WELDED OUTLETS AT FIVE LOCATIONS TO CORRECT A DESIGN ERROR.	7471	6	ALBANESE D & S, INC.	\$97,015.00

PURCHASING DELEGATED AUTHORITY ITEMS OCTOBER 1 - 31, 2016

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-1.	11/03/16	ROOFTOP AIR CONDITIONING UNITS AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE PURCHASE OF THREE ROOFTOP AIR CONDITIONING UNITS TO BE INSTALLED BY IN-HOUSE STAFF AT THE CHELSEA FACILITY.	WRA-4267		STEBBINS DUFFY, INC.	\$62,475.00
P-2.	11/10/16	ULTRA LOW SULFUR DIESEL FUEL AWARD OF A PURCHASE ORDER, UTILIZING A STATE BLANKET CONTRACT, FOR THE SUPPLY AND DELIVERY OF UP TO 378,000 GALLONS OF ULTRA LOW SULFUR, #2 DIESEL TO BE DELIVERED TO THE DEER ISLAND TREATMENT PLANT OVER A ONE WEEK PERIOD.	ENE40		DENNIS K. BURKE, INC.	\$604,800.00
P-3.	11/14/16	PORTABLE ULTRASONIC FLOW METERS AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE PURCHASE OF TWO PORTABLE ULTRASONIC METERS FOR THE DEER ISLAND TREATMENT PLANT. THE DUAL-CHANNEL TECHNOLOGY OF THE NEW METERS WILL MEASURE VOLUMETRIC FLOW RATES ON DEER ISLAND.	WRA-4283Q		M.A. SELMON COMPANY, INC.	\$29,500.00
P-4.	11/14/16	PREVENTIVE AND CORRECTIVE MAINTENANCE FOR PURGE AND TRAP INSTRUMENTS AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER TO PROVIDE PREVENTIVE AND CORRECTIVE MAINTENANCE ON THE DEPARTMENT OF LABORATORY SERVICES' PURGE AND TRAP INSTRUMENTS, FOR A PERIOD OF THREE YEARS.	WRA-4293Q		THE REMI GROUP, LLC	\$31,868.55
P-5.	11/14/16	THIRTY TWO NEW GENERAL MOTORS VEHICLES AWARD OF TWO SEPARATE PURCHASE ORDERS TO THE LOWEST RESPONSIVE BIDDERS FOR THE PURCHASE OF THIRTY TWO NEW GENERAL MOTORS VEHICLES IN ACCORDANCE WITH THE MWRA'S VEHICLE REPLACEMENT POLICY.	WRA-4272		LIBERTY CHEVROLET, INC. MHQ MUNICIPAL VEHICLES	\$910,561.00 \$133,000.00
P-6.	11/18/16	TELECOMMUNICATION EQUIPMENT - QUABBIN POWER AND SECURITY IMPROVEMENTS AWARD OF A PURCHASE ORDER, UTILIZING A STATE BLANKET CONTRACT, FOR THE PURCHASE OF TELECOMMUNICATION EQUIPMENT, INSTALLATION SERVICES, MAINTENANCE AND SUPPORT SERVICES ASSOCIATED WITH THE SECURITY IMPROVEMENTS UNDER MWRA CONTRACT NO. 7338 - QUABBIN POWER AND SECURITY IMPROVEMENTS, AWARDED TO EWING ELECTRICAL COMPANY, INC., ON DECEMBER 16, 2015.	ITT46		VERIZON BUSINESS NETWORKS SERVICES, INC.	\$32,857.42
P-7.	11/18/16	MAXIMO ANNUAL MAINTENANCE AND SUPPORT AWARD OF A PURCHASE ORDER, UTILIZING A STATE BLANKET CONTRACT FOR MAXIMO SOFTWARE ANNUAL MAINTENANCE AND SUPPORT FOR THE SERVICE PERIOD OF JANUARY 1, 2017 THROUGH DECEMBER 31, 2017.	ITS41		IBM CORPORATION	\$249,047.80
P-8.	11/23/16	TWO 36-INCH VERTICAL DOUBLE DISC VALVES AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE PURCHASE OF TWO 36-INCH VERTICAL DOUBLE DISC VALVES TO REPLENISH THE INVENTORY IN CHELSEA.	WRA-4268		BILLERICA WINWATER WORKS COMPANY	\$103,820.00
P-9.	11/28/16	TWO FREESTANDING MODULAR MEZZANINE UNITS AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE PURCHASE OF TWO FREESTANDING MODULAR MEZZANINE UNITS FOR THE CHELSEA MAINTENANCE FACILITY.	WRA-4286		WARNER SPECIALTY PRODUCTS, INC.	\$43,256.00

POSITION CONTROL REGISTER (PCR) LOCATION CHANGES NOVEMBER 2016

<u>DATE OF CHANGE</u>	<u>POSITION TITLE</u>	<u>CURRENT PCR#</u>	<u>CURRENT COST CENTER</u>	<u>NEW PCR #</u>	<u>NEW COST CENTER</u>	<u>REASON FOR CHANGE</u>
11/28/2016	Program Manager, Security / Safety	8520007	Labor Relations	1710009	Office of Emergency Preparedness	To meet Office of Emergency Preparedness staffing needs
11/28/2016	Program Manager, Security / Safety	8520009	Labor Relations	1710008	Office of Emergency Preparedness	To meet Office of Emergency Preparedness staffing needs

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: December 14, 2016
SUBJECT: FY17 Financial Update and Summary



COMMITTEE: Administration, Finance & Audit



Kathy Soni, Budget Director


Louise L. Miller, Budget Manager

Preparer/Title

X INFORMATION

 VOTE


Thomas J. Durkin
Director, Finance

RECOMMENDATION:

For information only. This staff summary provides the financial update and variance highlights through November 2016, comparing actual spending to the budget.

DISCUSSION:

Total year-to-date budget variance is \$9.0 million, with total expenses lower than budgeted by \$7.3 million or 2.6% and total revenues higher than budgeted by \$1.7 million or 0.5%.

FY17 Current Expense Budget

The expense variances through November 2016 by major budget category were:

- Net Lower Direct Expenses of \$1.9 million or 2.1%. Spending is lower for Wages and Salaries, Other Services, Utilities, Worker's Compensation, Fringe Benefits, and Professional Services. This is offset by higher spending for Maintenance, Chemicals, Other Materials, Training & Meetings, and Overtime.
- Lower Indirect Expenses of \$106,000 or 0.6% for lower Watershed reimbursements and Insurance costs.
- Lower Debt Service expenses of \$5.3 million or 3.0% mostly related to the favorable short-term variable interest rate, the impact of the August 2016 refunding, and not receiving the budgeted replacement loans as part of the State Revolving Fund (SRF) program.

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

	FY17 Budget YTD	FY17 Actual YTD	\$ Variance	% Variance
Direct Expenses	\$89.6	\$87.7	-\$1.9	-2.1%
Indirect Expenses	\$16.7	\$16.6	-\$0.1	-0.6%
Debt Service	\$179.7	\$174.3	-\$5.3	-3.0%
Total	\$285.9	\$278.6	-\$7.3	-2.6%

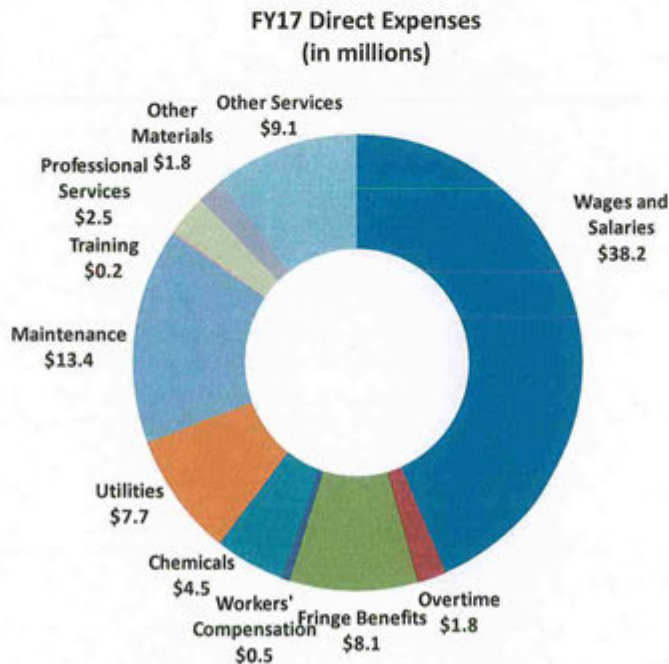
Totals may not add due to rounding.

Total Revenues of \$307.0 million were \$1.7 million over budget reflecting \$1.3 million receipt for water usage related to the summer drought; \$299,000 for a class action lawsuit settlement for derivative agreements; \$164,000 from sale of surplus equipment; and \$100,000 TRAC penalty.

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

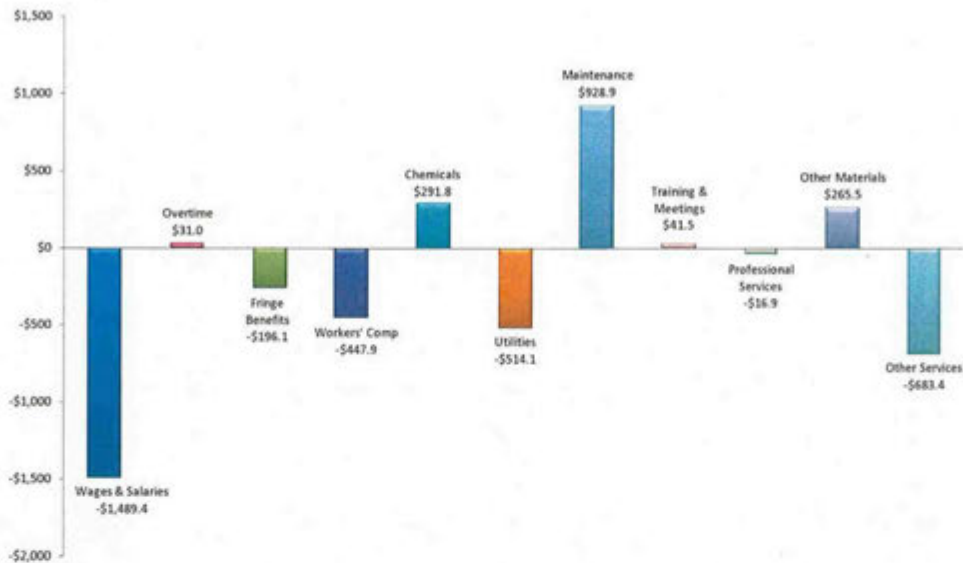
Direct Expenses

Year-to-date direct expenses totaled \$87.7 million, \$1.9 million or 2.1% less than budgeted.



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

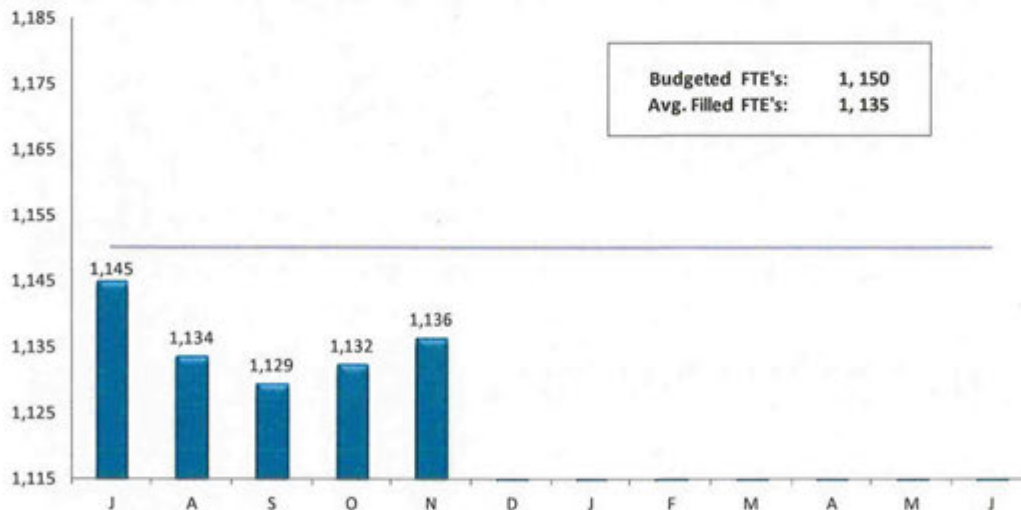
**FY17 Direct Expense Variance
(in 000's)**



Wages and Salaries

Wages and Salaries were underspent by \$1.5 million or 3.8% mainly as a result of lower average Full Time Equivalent positions (FTEs) than budgeted, the timing of backfilling vacant positions, and the salary mix differential between staff retiring and new hires. The average FTEs through November were 1,135, which was 15 positions lower than the 1,150 FTEs budgeted.

FY17 MWRA Full Time Equivalent (FTE) Position Trend



Other Services

Other Services spending was lower than budget by \$683,000 or 7.0% due to lower spending of \$353,000 for sludge pelletization services because of lower year to date quantities; \$183,000 for Space/Lease Rentals due to lower escrow payments at the Chelsea Facility for taxes and insurance, and lower pass-through maintenance cost at the Charlestown Navy Yard Facility; \$113,000 for Grit and Screenings disposal services primarily due to lower quantities; and \$62,000 for Other Services primarily for timing of community lead testing assistance.

Utilities

Utilities were underspent by \$514,000 or 6.3%, due to lower electricity costs of \$327,000, primarily for lower than budgeted pricing at Deer Island Treatment Plant, and lower expenses of \$145,000 for diesel fuel primarily for Deer Island Treatment Plant and Wastewater Operations, and lower natural gas expenses of \$41,000 primarily for the Carroll Water Treatment Plant.

Workers' Compensation

Workers' Compensation expenses were lower than budget by \$448,000 or 45.9% based on lower medical expenses of \$243,000 and compensation payments of \$215,000. In November, actual spending was \$50,000 over budget. The majority of lower expenses are due to reserve decreases earlier in the fiscal year associated with a few cases.

Fringe Benefits

Fringe Benefits spending was lower than budgeted by \$256,000 or 3.1% primarily for lower Health Insurance costs of \$233,000 due to fewer than budgeted participation, and the mix change between family and individual plans.

Maintenance

Maintenance expenses were higher than budgeted by \$929,000 or 7.4%. The Nut Island fire incident accounts for \$410,000 of the variance. The rest is primarily related to timing of the expenditures of funds budgeted in later months. Some projects include sewer system manhole rehabilitation, paving of in-house maintenance projects, and maintenance under the Deer Island cryogenic facility; boiler STG & hydro plant; and centrifuge contracts.

Chemicals

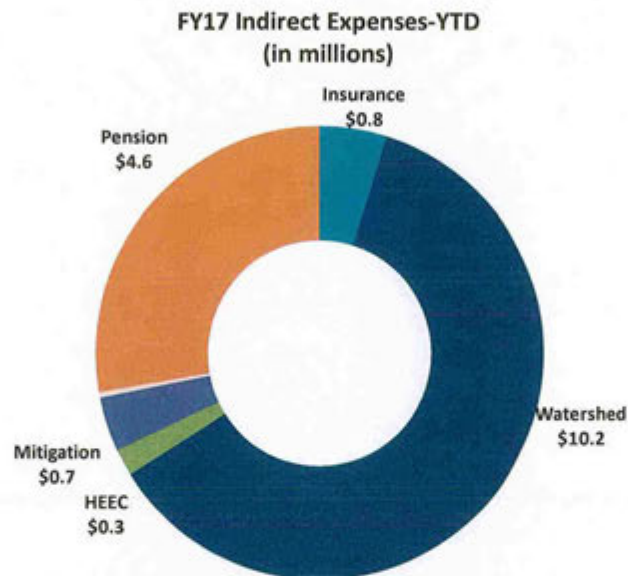
Chemicals expenses were higher than budgeted by \$292,000 or 7.0% primarily for Activated Carbon of \$165,000 at DITP due to increased odor control via carbon as opposed to wet scrubbers; and Sodium Hypochlorite of \$65,000.

Other Materials

Other Materials were higher than budget by \$266,000 or 17.8% mainly due to timing of Vehicle Purchases of \$185,000; Other Materials of \$66,000 primarily for gravel at the Clinton Landfill, and Computer Hardware of \$60,000. This is offset by lower Vehicle Expenses of \$133,000 due to lower fuel prices.

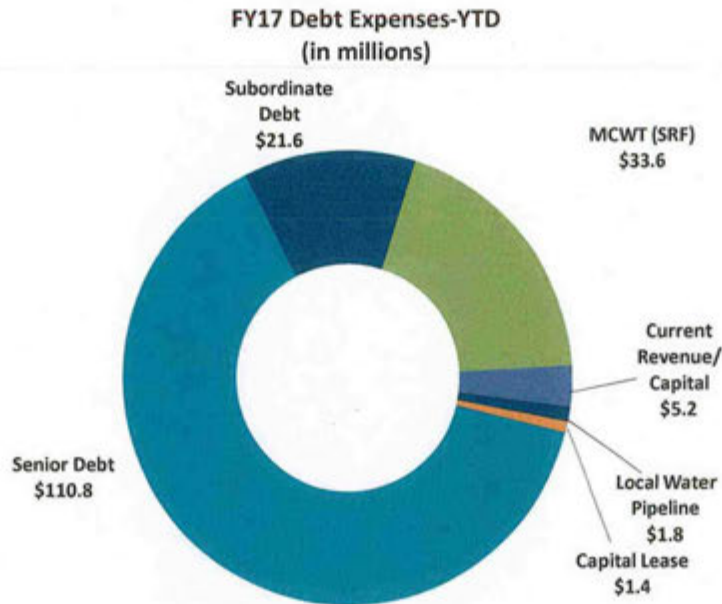
Indirect Expenses

For the fiscal year, Indirect Expenses totaled \$16.6 million, \$106,000 or 0.6% lower than budget, related to lower than budgeted insurance claims and an over-accrual in FY16 for Watershed management operating expenses.



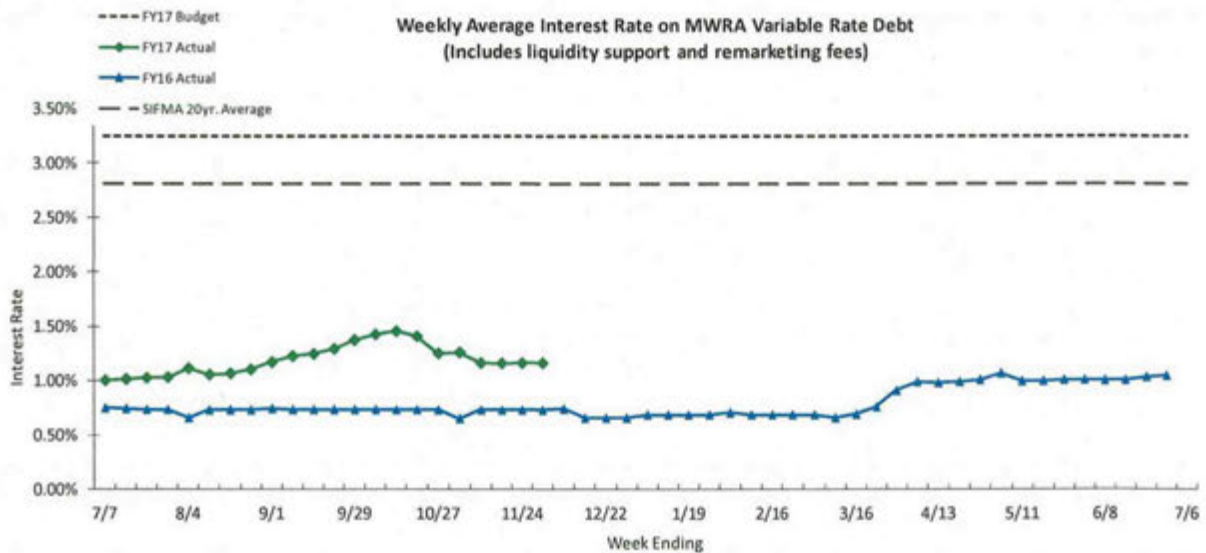
Debt Service

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



Debt Service expenses for the fiscal year totaled \$174.3 million, which was \$5.3 million or 3.0% lower below budget, reflecting lower variable rate of \$4.7 million, and \$432,000 for the impact of the August 2016 refunding.

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



Revenue & Income

Total Revenue for the fiscal year totaled \$307.0 million, \$1.7 million or .5% higher than budget.

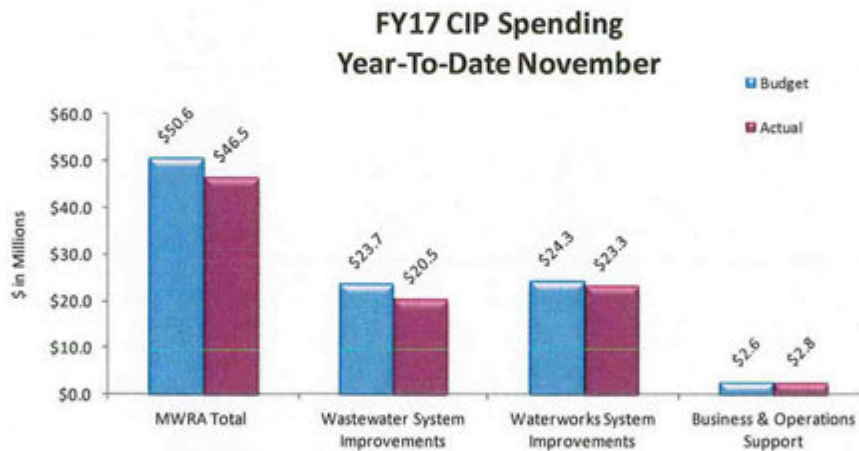
Higher than budget non-rate Revenue was driven by higher Other Revenue of \$1.9 million, of which \$1.3 million was for receipt for water usage related to the summer drought, \$299,000 for settlement related to a class action lawsuit settlement for derivative agreements, \$164,000 for higher than budgeted sale of surplus equipment, and \$100,000 for TRAC penalty. This is offset by lower Investment Income of \$284,000 for unanticipated calls re-invested at lower rates.

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

FY17 Capital Improvement Program

Capital expenditures in FY17 total \$46.5 million through the end of November, \$4.1 million or 8.1% less than budget.

After accounting for programs which are not directly under MWRA's control, most notably the Inflow and Infiltration (I/I) program, the Local Water Pipeline program, and the community managed Combined Sewer Overflow (CSOs) projects, total capital spending was \$39.9 million, \$1.9 million or 5.1% over budget.



Totals may not add due to rounding.

Overall underspending reflects the combined underspending of Wastewater Improvements and Waterworks Improvements of \$3.3 million and \$1.0 million, respectively, partially offset by Business and Operations Support overspending of \$0.2 million.

Spending By Program:

\$ in Millions	Budget	Actuals	\$ Var.	% Var.
Wastewater System Improvements				
Interception & Pumping	7.3	6.4	(0.9)	-12.0%
Treatment	5.9	8.2	2.3	38.4%
Residuals	0.0	0.0	0.0	N/A
CSO	5.7	3.0	(2.7)	-47.0%
Other	4.8	2.9	(2.0)	-40.6%
Total Wastewater System Improvements	\$23.7	\$20.5	-\$3.3	-13.7%
Waterworks System Improvements				
Drinking Water Quality Improvements	1.1	0.5	(0.7)	-59.1%
Transmission	11.1	10.0	(1.2)	-10.6%
Distribution & Pumping	6.6	9.1	2.5	37.3%
Other	5.3	3.7	(1.6)	N/A
Total Waterworks System Improvements	\$24.3	\$23.3	-\$1.0	-4.2%
Business & Operations Support	\$2.6	\$2.8	\$0.2	6.0%
Total MWRA	\$50.6	\$46.5	-\$4.1	-8.1%

Totals may not add due to rounding.

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

Combined Sewer Overflow: Net underspending of \$2.7 million

- \$2.8 million for Cambridge Sewer Separation Project due to less than anticipated progress on final restoration work.

Wastewater Treatment: Net overspending of \$2.3 million

- \$1.5 million for Deer Island Power System Improvements and \$0.5 million for Clinton Phosphorus Reduction Construction due to contractor progress, and \$0.3 for Electrical Upgrades Construction 4 due to timing of final work.
- The overspending was partially offset by underspending on Butterfly Valve Replacement of \$0.8 million due to equipment delivery delays

Water Distribution and Pumping: Net overspending of \$2.5 million

- \$1.4 million for Spot Pond Supply Mains due to additional work for Webster Avenue Pipeline Construction and \$1.2 million for Section 89/29 Redundancy Phase 1B Construction and \$0.3 million for Southern Extra High Section 111 Construction 1 due to contractor progress.
- The overspending was partially offset by underspending on Weston Aqueduct Supply Mains Section 36/C/S9-A11 Valve of \$0.5 million due to timing of work.

Other Wastewater: Net underspending of \$2.0 million

- \$2.0 million for Community Infiltration/Inflow (I/I) due to less than anticipated requests for loans and grants.

Waterworks Other: Net underspending of \$1.6 million

- \$1.3 million due to less than anticipated local water pipeline loans.
- \$0.6 million for Beacon Street Line Repair due to issues with vaults at access pits.

- The underspending was partially offset by overspending of \$0.4 million for Quabbin Power, Communication & Security due to contractor progress.

Waterworks Transmission: Net underspending of \$1.2 million

- \$1.0 million for Long Term Redundancy primarily due to less than anticipated progress due to construction issues for the Wachusett Aqueduct Pump Station Construction.
- \$0.9 million caused by less than anticipated progress for the Sudbury/Weston Aqueduct Repairs.
- The underspending was partially offset by overspending \$0.5 million for the Hatchery Pipeline Construction due to contractor progress.

Interception & Pumping: Net underspending of \$0.9 million

- \$1.7 million on Caruso Pump Station Improvements Construction due to construction delays.
- \$0.7 million for Chelsea Creek Upgrades Construction and Engineering Services for a later Notice-to-Proceed than budgeted.
- The underspending was partially offset by \$0.9 million for Alewife Brook Pump Station Rehab Construction due to contractor progress, and \$0.7 million for Chelsea Screenhouse Upgrades due to timing of final work.

Drinking Water Quality Improvements: Net underspending of \$0.7 million

- \$0.3 million for Southborough Water Quality Upgrades and Spot Pond Storage Facility Design/Build of \$0.4 due to timing of final work.

Construction Fund Balance

The construction fund balance was at \$83.4 million as of the end of November. Commercial Paper availability was at \$222.0 million to fund construction projects.

Attachment 1 – Variance Summary November 2016

Attachment 2 – Current Expense Variance Explanations

Attachment 3 – Capital Improvement Program Variance Explanations

ATTACHMENT 1

	November 2016 Year-to-Date					
	Period 5 YTD Budget	Period 5 YTD Actual	Period 5 YTD Variance	%	FY17 Approved	% Expended
EXPENSES						
WAGES AND SALARIES	\$ 39,680,590	\$ 38,191,158	\$ (1,489,432)	-3.8%	\$ 101,588,897	37.6%
OVERTIME	1,771,588	1,802,623	31,035	1.8%	4,192,676	43.0%
FRINGE BENEFITS	8,374,883	8,119,041	(255,842)	-3.1%	20,242,323	40.1%
WORKERS' COMPENSATION	976,746	528,803	(447,943)	-45.9%	2,344,190	22.6%
CHEMICALS	4,161,035	4,452,841	291,806	7.0%	9,110,407	48.9%
ENERGY AND UTILITIES	8,191,321	7,677,227	(514,094)	-6.3%	21,541,077	35.6%
MAINTENANCE	12,496,206	13,425,112	928,906	7.4%	31,080,642	43.2%
TRAINING AND MEETINGS	126,831	158,581	31,750	25.0%	435,481	36.4%
PROFESSIONAL SERVICES	2,563,504	2,528,675	(34,830)	-1.4%	6,531,939	38.7%
OTHER MATERIALS	1,495,413	1,760,954	265,541	17.8%	6,219,630	28.3%
OTHER SERVICES	9,752,499	9,069,146	(683,353)	-7.0%	22,974,855	39.5%
TOTAL DIRECT EXPENSES	\$ 89,590,616	\$ 87,714,161	\$ (1,876,456)	-2.1%	\$ 226,262,117	38.8%
INSURANCE	\$ 845,264	\$ 802,934	\$ (42,330)	-5.0%	\$ 1,997,898	40.2%
WATERSHED/PILOT	10,277,075	10,221,755	(55,320)	-0.5%	24,291,268	42.1%
BECo PAYMENT	327,402	324,990	(2,412)	-0.7%	773,859	42.0%
MITIGATION	659,154	652,723	(6,431)	-1.0%	1,558,000	41.9%
ADDITIONS TO RESERVES	(70,968)	(70,968)	-	0.0%	(167,742)	42.3%
RETIREMENT FUND	4,632,624	4,632,624	-	0.0%	4,632,624	100.0%
POST EMPLOYEE BENEFITS	-	-	-	---	4,876,050	0.0%
TOTAL INDIRECT EXPENSES	\$ 16,670,551	\$ 16,564,058	\$ (106,493)	-0.6%	\$ 37,961,957	43.6%
STATE REVOLVING FUND	\$ 33,870,218	\$ 33,643,799	\$ (226,419)	-0.7%	\$ 86,971,915	38.7%
SENIOR DEBT	111,204,970	110,772,676	(432,295)	-0.4%	268,472,556	41.3%
CORD FUND	-	-	-	---	-	---
DEBT SERVICE ASSISTANCE	-	-	-	---	(873,804)	---
CURRENT REVENUE/CAPITAL	5,161,538	5,161,538	-	0.0%	12,200,000	42.3%
SUBORDINATE MWRA DEBT	26,296,810	26,296,810	-	0.0%	69,997,992	37.6%
LOCAL WATER PIPELINE CP	1,755,449	1,755,449	-	0.0%	4,149,242	42.3%
CAPITAL LEASE	1,361,063	1,361,063	-	0.0%	3,217,060	42.3%
DEBT PREPAYMENT	-	-	-	---	10,994,960	0.0%
VARIABLE DEBT	-	(4,664,217)	(4,664,217)	---	-	0.0%
DEFEASANCE ACCOUNT	-	-	-	---	-	---
TOTAL DEBT SERVICE	\$ 179,650,048	\$ 174,327,118	\$ (5,322,931)	-3.0%	\$ 455,129,921	38.3%
TOTAL EXPENSES	\$ 285,911,216	\$ 278,605,337	\$ (7,305,880)	-2.6%	\$ 719,353,995	38.7%
REVENUE & INCOME						
RATE REVENUE	\$ 293,987,058	\$ 293,987,058	\$ -	0.0%	\$ 694,878,500	42.3%
OTHER USER CHARGES	3,974,663	4,012,318	37,655	0.9%	8,752,834	45.8%
OTHER REVENUE	3,607,799	5,508,697	1,900,898	52.7%	6,519,171	84.5%
RATE STABILIZATION	-	-	-	---	-	---
INVESTMENT INCOME	3,780,532	3,496,534	(283,998)	-7.5%	9,473,490	36.9%
TOTAL REVENUE & INCOME	\$ 305,350,051	\$ 307,004,607	\$ 1,654,555	0.5%	\$ 719,623,995	42.7%

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY17 Budget YTD November	FY17 Actuals YTD November	FY17 YTD Actual vs. FY17 Budget		Explanations
			\$	%	
Direct Expenses					
Wages & Salaries	39,680,590	38,191,158	(1,489,432)	-3.8%	Underspending is mainly the result of lower average Full Time Equivalent positions (FTEs) than budgeted, the timing of backfilling vacant positions and the salary mix differential between staff retiring and new hires. The average FTEs for the fiscal year was 1,135, which was 15 positions lower than the 1,150 FTEs budgeted.
Overtime	1,771,588	1,802,623	31,035	1.8%	
Fringe Benefits	8,374,883	8,119,041	(255,842)	-3.1%	Lower than budget mainly due to Health Insurance of \$233,000, due to fewer than budgeted participation and the mix change between family and individual plans.
Worker's Compensation	976,746	528,803	(447,943)	-45.9%	Underspending due to lower medical payments of \$243,000 and compensation payments of \$215,000. In November actual spending was \$50,000 over budget. It is important to note that spending on this line item can change significantly depending on future claims and severity of cases.
Chemicals	4,161,035	4,452,841	291,806	7.0%	Overspending on Activated Carbon of \$165,000 at DITP for odor control; Sodium Hypochlorite of \$63,000; Polymer of \$37,000; Carbon Dioxide of \$30,000, Soda Ash of \$30,000; Ferric Chloride of \$21,000; and Hydrogen Peroxide of \$21,000. This is offset by lower spending on Liquid Oxygen of \$29,000; and Other of \$23,000.

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY17 Budget YTD November	FY17 Actuals YTD November	FY17 YTD Actual vs. FY17 Budget		Explanations
			\$	%	
Utilities	8,191,321	7,677,227	(514,094)	-6.3%	Underspending in Electricity of \$327,000 primarily at DITP due to lower prices and Wastewater facilities partially for not using wet scrubbers at NI and lower flows throughout the system. This is offset by higher spending at waterworks facilities attributed to pumping more water to Bedford and higher than anticipated demand charges at the new Spot Pond Pump Station. Diesel Fuel is underspent by \$145,000 primarily for Wastewater Operations and DITP. Natural Gas is underspent \$41,000 primarily at JCWTP, B/W IPS and Chelsea Facility.
Maintenance	12,496,206	13,425,112	928,906	7.4%	Services were overspent by \$1.1M and Materials were underspent by \$87,000. Nut Island fire remediation efforts have costs \$410,000 in FY17 for both materials and services. The rest is primarily related to timing of the expenditures of funds budgeted in later months. Some projects include sewer system manhole rehab, paving of in-house maintenance projects, and maintenance under the Deer Island cryo; boiler STG & hydroplant; and centrifuge contracts.
Training & Meetings	126,831	158,581	31,750	25.0%	Overspending primarily in FOD and MIS due to timing.
Professional Services	2,563,504	2,528,675	(34,829)	-1.4%	Lower spending on Other Services of \$92,000 primarily in Treasury and Op Admin; \$33,000 for Resident Inspection; \$10,000 in Security; and \$10,000 for Audit Services. This is offset by higher spending for Legal Services of \$118,000 in the Law Department.
Other Materials	1,495,413	1,760,954	265,541	17.8%	Higher than budget spending of \$185,000 due to timing of Vehicle Purchases/ Replacements; \$66,000 for Other Materials primarily for gravel for Clinton landfill; \$60,000 for Computer Hardware in MIS; \$38,000 for Equipment/Furniture primarily in EnQual Water; \$33,000 for Health/Safety; and \$20,000 for Lab & Testing. This is offset by underspending of \$133,000 in vehicle expenses primarily due to lower fuel prices.
Other Services	9,752,499	9,069,146	(683,353)	-7.0%	Lower than budgeted spending of \$353,000 for sludge pelletization services for lower year to date quantities; \$183,000 for Space Lease/Rentals due to lower escrow for Chelsea taxes and insurance and pass through maintenance cost at CNY; \$113,000 for Grit and Screenings disposal services primarily due to lower quantities; and \$62,000 for Other Services primarily for timing of community lead testing assistance.
Total Direct Expenses	89,590,616	87,714,161	(1,876,455)	-2.1%	

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY17 Budget YTD November	FY17 Actuals YTD November	FY17 YTD Actual vs. FY17 Budget		Explanations
			\$	%	
Indirect Expenses					
Insurance	845,264	802,934	(42,330)	-5.0%	Lower Claims than budgeted of \$46,000 offset by higher premiums of \$4,000.
Watershed/PILOT	10,277,075	10,221,755	(55,320)	-0.5%	Lower Watershed Reimbursement due to over accrual at the end of FY16 as compared to actual invoiced paid.
HEEC Payment	327,402	324,990	(2,412)	-0.7%	
Mitigation	659,154	652,723	(6,431)	-1.0%	Actual inflation rate was 1.5% vs. 2.5% used for the budget.
Addition to Reserves	(70,968)	(70,968)	-	0.0%	
Pension Expense	4,632,624	4,632,624	-	0.0%	
Post Employee Benefits	-	-	-		
Total Indirect Expenses	16,670,551	16,564,058	(106,493)	-0.6%	
Debt Service					
Debt Service	179,650,049	174,327,118	(5,322,931)	-3.0%	Lower variable rate of \$4.7 million.
Debt Service Assistance	-	-	-		
Total Debt Service Expenses	179,650,049	174,327,118	(5,322,931)	-3.0%	
Total Expenses					
Total Expenses	285,911,216	278,605,337	(7,305,879)	-2.6%	
Revenue & Income					
Rate Revenue	293,987,057	293,987,058	-	0.0%	
Other User Charges	3,974,663	4,012,318	37,655	0.9%	
Other Revenue	3,607,799	5,508,697	1,900,898	52.7%	\$1.3M for sale of water due to the drought; \$299k for settlement of class action lawsuit for derivative agreements; \$164k from sale of surplus equipment; and \$100k TRAC penalty.
Rate Stabilization	-	-	-		
Investment Income	3,780,532	3,496,534	(283,998)	-7.5%	Investment Income is under budget for unanticipated calls re-invested at lower rates.
Total Revenue	305,350,051	307,004,607	1,654,556	0.5%	
Net Revenue in Excess of Expenses					
Net Revenue in Excess of Expenses	19,438,835	28,399,270	8,960,435		

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

	FY17 Budget YTD November	FY17 Actuals YTD November	YTD Actuals vs. Budget		Explanations
			\$	%	
Wastewater					
Interception & Pumping (I&P)	\$7,275	\$6,401	(\$874)	-12.0%	<u>Underspending</u> Caruso Pump Station Improvements Construction: \$1.7M (delayed installation of HVAC equipment due to unforeseen roof replacement) <u>Offset Overspending</u> Alewife Brook Pump Station Rehab Construction: \$0.9M (project progress) Chelsea Screenhouse Upgrades: \$0.7M (work scheduled for FY16 performed in FY17)
Treatment	\$5,892	\$8,154	\$2,262	38.4%	<u>Overspending</u> Power System Improvements - Construction: \$1.5M (project progress) Clinton Wastewater Treatment Plant Phosphorus Removal - Construction: \$0.5M (project progress) Electrical Equipment Upgrades Construction 4: \$0.3M (project progress) Other smaller projects: \$0.8M <u>Offset Underspending</u> Butterfly Valve Replacement: \$0.8M (longer than anticipated lead time for valves as a result of coating issues)
Residuals	\$0	\$0	\$0	-	
CSO	\$5,699	\$3,020	(\$2,679)	-47.0%	<u>Underspending</u> Cambridge Sewer Separation: \$2.8M (delay in work due to Huron Avenue water main replacement by the City of Cambridge necessitating a six month time extension)
Other Wastewater	\$4,846	\$2,881	(\$1,965)	-40.6%	I/I Local Financial Assistance: \$2.0M (less than anticipated requests for grants and loans)
Total Wastewater	\$23,712	\$20,455	(\$3,256)	-13.7%	


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

	FY17 Budget YTD November	FY17 Actuals YTD November	YTD Actuals vs. Budget		Explanations
			\$	%	
Waterworks					
Drinking Water Quality Improvements	\$1,150	\$470	(\$679)	-59.1%	<u>Underspending</u> CP7 Existing Facilities: \$0.2M (timing of move into Southboro lab and pending balancing credit change order) Spot Pond Storage Facility: \$0.3M (installation of communication tower delayed but has begun)
Transmission	\$11,135	\$9,957	(\$1,177)	-10.6%	<u>Underspending</u> Wachusett Aqueduct Pump Station: \$1.1M (pending redesign of work adjacent to City of Marlborough water pipe and progress less than anticipated at the pump station) Rosemary Brook Building Repair: \$0.9M (anticipated time extension) <u>Offset Overspending</u> Hatchery Pipeline construction: \$0.5M (project progress)
Distribution & Pumping	\$6,637	\$9,115	\$2,479	37.3%	<u>Overspending</u> Section 4 Webster Ave Bridge Pipe Rehab - Construction: \$1.4M (additional change order work based on redesign) Section 89/29 Redundancy Phase 1B Construction: \$1.2M (project progress) Redundancy Pipeline Section 111 Phase 1 Construction: \$0.3M (project progress) <u>Offset Underspending</u> Weston Aqueduct Supply Mains Section 36/C/S9 - A11 Valve: \$0.5M (anticipated credit change order for less than estimated quantities of rock and contaminated soil, and timing of valve installation work)
Other Waterworks	\$5,349	\$3,712	(\$1,638)	-30.6%	<u>Underspending</u> Local Water System Assistance Program: \$1.3M (less than anticipated community requests for loans) Beacon Street Line Repair - Construction: \$0.6M (delay due to trees relocation and MBTA permits) <u>Offset Overspending</u> Quabbin Power, Communication & Security - Construction: \$0.4M (project progress)
Total Waterworks	\$24,270	\$23,255	(\$1,015)	-4.2%	

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



	FY17 Budget YTD November	FY17 Actuals YTD November	YTD Actuals vs. Budget		Explanations
			\$	%	
Business & Operations Support					
Total Business & Operations Support	\$2,610	\$2,766	\$156	6.0%	Overspending Equipment Purchase: \$0.5M (timing of vehicle purchases) Offset Underspending Application Improvement Program: \$0.3M (timing of IT Strategic Plan implementation)
Total MWRA	\$50,592	\$46,476	(\$4,116)	-8.1%	

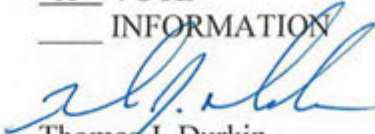
STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: December 14, 2016
SUBJECT: Transmittal of the FY18 Proposed Capital Improvement Program to the MWRA Advisory Board

COMMITTEE: Administration, Finance & Audit

VOTE
 INFORMATION


Kathy Soni, Budget Director

Louise Miller, Budget Manager
Preparer/Title


Thomas J. Durkin
Director, Administration and Finance

RECOMMENDATION:

To approve the transmittal of the FY18 Proposed Capital Improvement Program to the Advisory Board for its 60-day review and comment period.

DISCUSSION:

The Fiscal Year 2018 Proposed Capital Improvement Program (CIP) represents an update to the program approved by the Board in June 2016 for Fiscal Year 2017. The Proposed CIP includes the latest cost estimates, revised schedules, and new projects.

The FY18 Proposed Capital Improvement Program projects \$169.5 million spending for FY18, of which \$83.2 million supports Wastewater System Improvements, \$76.1 million supports Waterworks System Improvements, and \$10.2 million is for Business and Operations Support. The projects with significant spending include Chelsea Creek Headworks Upgrades, the new Wachusett Aqueduct Pump Station, Northern Intermediate High Redundancy projects, Alewife Brook Pump Station Rehabilitation, and a series of Deer Island asset protection projects.

The Program continues to address critical redundancy improvements for the Metropolitan Tunnel System. The FY18 CIP includes approximately \$1.4 billion, the same as in the FY17 budget.

The FY18 Proposed Capital Program reaffirms MWRA's commitment to the community financing assistance programs on both the water and wastewater side. Local Water System Assistance Program Phase 3 Loans in the amount of \$210 million were added.

FY18 is the final year of the Authority's 5-year Cap for capital spending. The Authority has complied with the Cap and remained below the ceiling for spending. During the FY14-18 time frame, the Authority reached substantial completion of its court mandated CSO Control Plan, the last major milestone in the Clean Water Act case at an approximate total cost of \$907 million. The Authority also reached substantial completion of the Spot Pond Storage Facility, providing

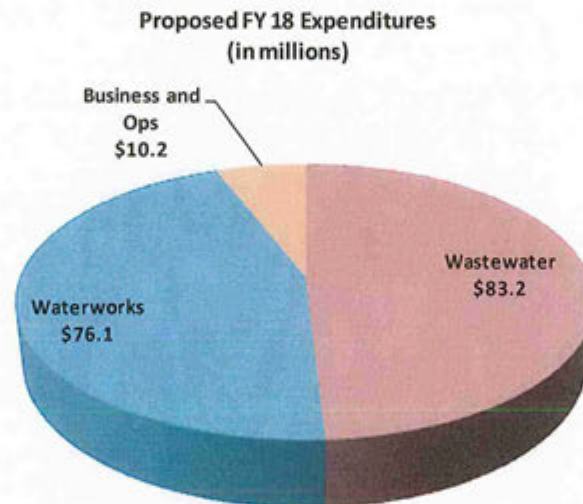
distribution storage for the Northern Low Service area and achieving water redundancy to the Gillis Pump Station supplying the Northern High and Northern Intermediate High service areas. Several major projects including the Carroll Ultraviolet Disinfection Water Treatment, Brusch Water Treatment Plant, and Deer Island Wastewater Treatment Plant North Main Pump Station Variable Frequency Drives Construction projects were also completed during this time.

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

FY18 Proposed CIP

Proposed Spending

The FY18 Proposed CIP forecasts \$169.5 million in spending, of which \$83.2 million supports Wastewater System Improvements, \$76.1 million supports Waterworks System Improvements, and \$10.2 million is for Business and Operations Support.



The FY18 Proposed CIP includes \$26.5 million for community assistance programs, which are a combination of loan and partial grant programs, with net expenditures of \$19.0 million for local Infiltration/Inflow programs and net expenditures of \$7.5 million for local water pipeline programs. Beginning in FY18, the CIP funds a new Phase III for the local water pipeline program.

The projects with the highest spending in FY18 account for over 47% of the total annual spending and include expenditures for Chelsea Creek Headworks Upgrades Construction, the new Wachusett Aqueduct Pump Station Construction, NIH Section 89 & 29 Water Redundancy Pipeline Phases 1C and 2 Construction, SEH Water Redundancy Pipeline Section 111 Phases 1, 2, and 3 Construction, Alewife Brook Pump Station Rehabilitation Construction, Deer Island Treatment Plant HVAC Equipment Replacement, Deer Island Treatment Plant North Main Pump Station & Winthrop Terminal Facility Butterfly Valve Replacement, and Winthrop Terminal Facility Variable Frequency Drives Replacement.

Project	Subphase	FY18 Proposed Spending
Facility Asset Protection	Chelsea Creek Upgrades - Const.	\$18,215
Cosgrove Tunnel Redundancy	Wachusett Aqueduct Pump Station - Const.	\$15,896
NIH Redundancy & Storage	Section 89 & 29 Redundancy Phase 1C and Phase 2 - Const.	\$15,448
SEH Redundancy & Storage	Redundancy Pipeline Section 111 Phase 1, 2 and 3 - Const.	\$13,146
Facility Asset Protection	Alewife Brook Pump Stn Rehab - Const.	\$5,795
DI Treatment Plant Asset Protection	HVAC Equipment Replacement - Const.	\$4,978
DI Treatment Plant Asset Protection	NMPS & WTF Butterfly Valve Replacement	\$3,499
DI Treatment Plant Asset Protection	WTF VFD Replacement - Const.	\$3,085
Total		\$80,062
% of Total FY 18 proposed MWRA Spending		47.2%

Chelsea Creek Headworks Upgrade Construction - \$18.2 million (\$72.9 million total construction cost). This major rehabilitation project includes replacement/upgrade to the screens, grit collection system, grit and handling systems, odor control systems, HVAC, mechanical, plumbing and instrumentation. Solids handling systems will be automated and the building's egress and fire suppressions systems will also be upgraded.

Wachusett Aqueduct Pump Station Design and Construction - \$15.9 million (\$53.0 million total construction cost). This is a redundancy project for construction of a 240 mgd emergency pump station which will provide redundancy for the Cosgrove Tunnel by pumping raw water from the Wachusett Aqueduct to the Carroll Water Treatment Plant. This project, along with the completed Hultman Aqueduct rehabilitation and interconnections project, will provide fully treated water transmission redundancy from the Wachusett Reservoir to the beginning of the metropolitan distribution system in Weston.

Northern Intermediate High (NIH) Section 89 & 29 Redundancy Construction Phases 1C & 2 - \$15.4 million (\$48.9 million total construction cost). This is a redundancy project for the MWRA's Northern Intermediate High service area. Currently, this area is primarily supplied by a single 48-inch diameter pipeline, the Gillis Pump Station, and water distribution storage from the Bear Hill Tank. This project proposes a new seven mile redundant pipeline under four construction phases and will provide uninterrupted water supply to the service area in the event of a failure of the existing single supply pipe and to allow the existing pipe to be removed from service for inspection, maintenance, and repair. Phase 1A was completed; Phase 1B began in January 2016. Phase 1C was awarded in November 2016 and Phase 2 is anticipated to be awarded in April 2017.

Southern Extra High (SEH) Redundancy Section 111 Phase 1, 2 & 3 Construction - \$13.1 million (\$35.5 million total construction cost). This is a redundancy project for MWRA's Southern Extra High area. This project will provide redundancy to Section 77 and 88 serving Boston, Norwood, Stoughton, and Dedham-Westwood, through construction of a redundant pipeline.

Alewife Brook Pump Station Rehabilitation - \$5.8 million (\$12.6 million total construction cost). This is a rehabilitation project that includes replacing the three wet weather pumps, motors, and piping, replacing the influent screens and grinders, updating the HVAC system, updating the electrical system, remediating PCB-containing paints, and modifying the building interior to meet current building codes, energy efficiency improvements, flood protection measures, and security improvements.

Deer Island Wastewater Treatment Plant Asset Protection:

HVAC Equipment Replacement Construction - \$5.0 million (\$29.5 million total construction cost). This project will replace two obsolete HVAC control systems and one manufacturer’s system, reducing replacement parts and improving automation.

North Main Pump Station and Winthrop Terminal Facility Butterfly Valve Replacement - \$3.5 million (\$17.5 million total construction cost). Project will replace butterfly valves in the NMPS and eight 36-inch plug valves in the WTF, for isolating the pumps when maintenance is required. Also includes replacement of primary sludge piping and eight hydraulic actuators for the South System Pump Station check valves.

Winthrop Terminal Facility VFD Replacement Construction - \$3.1 million (\$11.9 million total construction cost). Project will replace obsolete variable frequency drives in the Winthrop Terminal Facility.

The FY18 Proposed Budget projects total MWRA future CIP spending of \$3.3 billion beginning with FY17, an increase of \$177.2 million over the FY17 Final CIP approved by the Board of Directors in June 2016. This includes \$123 million in new projects, and cost estimate and inflation adjustments, with most of the additional spending in years beyond FY18.

	Total Contract Amount	Payments Thru FY16	FY 18 CIP Future Projected Spending
Wastewater System Improvements	\$3,172.5	\$1,931.3	\$1,241.2
Interception & Pumping	980.6	542.6	438.0
Treatment	871.8	266.8	605.0
Residuals	167.6	64.6	103.0
CSO	909.5	893.5	16.0
Other Wastewater	242.9	163.7	79.2
Waterworks System Improvements	\$3,992.5	\$1,965.1	\$2,027.5
Drinking Water Quality Improvements	666.0	644.9	21.1
Transmission	2,223.3	770.1	1,453.2
Distribution & Pumping	1,033.8	401.4	632.4
Other Waterworks	69.4	148.6	(79.2)
Business & Operations Support	131.5	92.8	38.8
Total MWRA	\$7,296.5	\$3,989.1	\$3,307.5

New Wastewater projects added in the FY18 Proposed CIP total \$38 million, while Waterworks total \$85 million.

New projects with expenditures of \$10 million or more for Wastewater are:

Nut Island Odor Control and HVAC Replacement - \$10 million for long-term improvements following the January 25-26, 2016 fire and following the Odor Control, HVAC and Energy Management System Evaluation completed in October 2016. Failure of the odor control system would result in odors being released to surrounding areas and possible violation of the discharge limits of the facility's air permit.

Effluent Shaft Rehabilitation - \$12.2 million evaluation and improvement of the condition of the effluent shafts from the Chelsea Creek Headworks, Columbus Park Headworks, Ward Street Headworks and Nut Island Headworks. Evaluation and rehabilitation of the shafts is critical to maintaining wastewater flows through the remote Headworks facilities to Deer Island for treatment.

New projects with expenditures of \$10 million or more for Waterworks are:

Chestnut Hill Emergency Pump Station Improvements – \$18.3 million for improvements to piping and pumping systems at the Chestnut Hill Emergency Pump Station to reduce surge loads on the suction and discharge piping during emergency operation if the Dorchester Tunnel is out of service.

Metropolitan Redundancy Interim Improvements Design and Engineering Services During Construction - \$10.4 million for engineering services for four construction contracts. The construction contracts include the Top of Shafts Interim Improvements, Chestnut Hill Emergency Pump Station improvements, Chestnut Hill Emergency Generator and WASM/SPSM PRV Improvements. These four construction contracts are for critical interim improvements to the existing Metropolitan water supply tunnels and to provide back-up means of water supply should one of the components of the Metropolitan tunnels fail.

Watershed Improvements - \$15 million for rehabilitation and improvements to the Quabbin administration building.

Please refer to Attachment A for a complete listing of new projects included in the FY18 Proposed CIP.

FY18 Anticipated Contract Awards

Future CIP spending is based on current and future contract awards. 49 contracts totaling \$203.5 million are projected to be awarded in FY18. The largest ten projected contract awards total \$144.6 million and are listed below, accounting for over 71% of expected awards:

Project	Subphase	Anticipated Contract Amount
DI Treatment Plant Asset Protection	Clarifier Rehabilitation Phase 2 - Construction	\$80.0
DI Treatment Plant Asset Protection	Gravity Thickener Rehabilitation	\$14.5
Metropolitan Redundancy Interim Improvements	Metropolitan Redundancy Interim Design Construction Administration/Resident Inspection	\$10.4
DI Treatment Plant Asset Protection	Switchgear Replacement - Construction	\$8.0
Metropolitan Tunnel Redundancy	Conceptual Design Environmental Impact Report	\$7.5
Wastewater Central Monitoring	Wastewater Supervisory Control and Data Acquisition System (SCADA)/Program Logic Controller (PLC) Upgrades	\$7.0
Northern Low Service Rehab Section 8	Sec 57 Water & 21/20/19 Sewer Design/Engineering Services During Construction/Resident Inspection	\$4.8
DI Treatment Plant Asset Protection	Future South System Pump Station Variable Frequency Drives Replacements - Design	\$4.8
Application Improvements Program	Enterprise Content Management	\$4.0
Winsor Station Pipeline Improvements	Winsor Power Station/Quabbin Buildings Final Design/Construction Administration/Resident Inspection	\$3.6
Top Ten Awards for FY18		\$144.6
49 Contract Awards Planned for FY18		\$203.5

The Five-Year Spending Cap

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

FY14-18 Base-Line Cap

The FY14 Final CIP established the FY14-18 Base-Line Cap at \$791.7 million with the following breakdown. FY18 is the last year of the Base-Line Cap.

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

Based on the FY18 Proposed CIP, the five-year spending is now at \$549.7 million or \$242 million less than the Base-Line Cap.

The exclusion of the Community Assistance Programs from the Cap calculation, per the recommendation of the Advisory Board in FY15 accounts for \$73.0 million of the total \$242.0 million underspending. The remainder of the underspending is the result of cash flow changes between the years based mainly on updated design and construction schedules and costs.

FY18 Proposed		FY14	FY15	FY16	FY17	FY18	Total FY14-18
	Projected Expenditures	\$102.2	\$103.6	\$95.1	\$142.9	\$169.5	\$613.3
Contingency	0.0	0.0	0.0	7.6	9.8	17.4	
Inflation on Unawarded Construction	0.0	0.0	0.0	0.0	0.0	0.0	
Less: I/I Program	0.0	(17.5)	(13.6)	(18.8)	(19.0)	(69.0)	
Less: Water Loan Program	0.0	1.4	5.3	(3.3)	(7.5)	(4.0)	
Less: Chicopee Valley Aqueduct Projects	(5.6)	(1.2)	(0.4)	(0.1)	(0.7)	(8.0)	
FY18 Proposed FY14-18 Spending	\$96.6	\$86.3	\$86.4	\$128.2	\$152.2	\$549.7	

FY18 Proposed vs. FY14-18 Base-Line Cap		FY14	FY15	FY16	FY17	FY18	Total FY14-18
	Projected Expenditures	(\$40.3)	(\$43.9)	(\$54.2)	\$1.1	\$32.7	(\$104.7)
Contingency	(7.6)	(9.5)	(10.1)	(2.2)	0.6	(28.7)	
Inflation on Unawarded Construction	(0.8)	(4.2)	(8.4)	(11.1)	(13.5)	(37.9)	
Less: I/I Program	0.0	(17.5)	(13.6)	(18.8)	(19.0)	(69.0)	
Less: Water Loan Program	0.0	1.4	5.3	(3.3)	(7.5)	(4.0)	
Less: Chicopee Valley Aqueduct Projects	(0.6)	0.9	1.0	1.2	(0.2)	2.3	
FY14-18 Cap (\$ Change)	(\$49.2)	(\$72.7)	(\$80.0)	(\$33.1)	(\$7.0)	(\$242.0)	

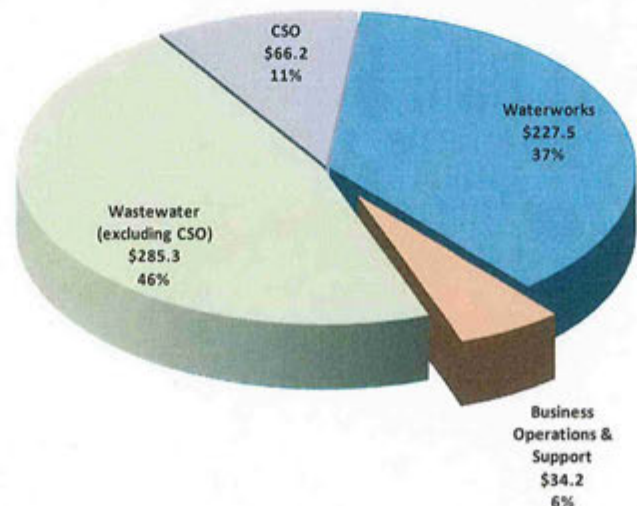
Please refer to Attachment B for a more detailed project listing and projected cash flows for the FY14-18 Cap period and beyond FY18. Please refer to Attachment C for detailed changes at the project level for the FY14-18 Cap and potential spending beyond FY18.

FY14-18 Actual Cap Based on FY18 Proposed CIP

Yearly cash-flows for the FY14-18 Cap period by program and project level are shown below:

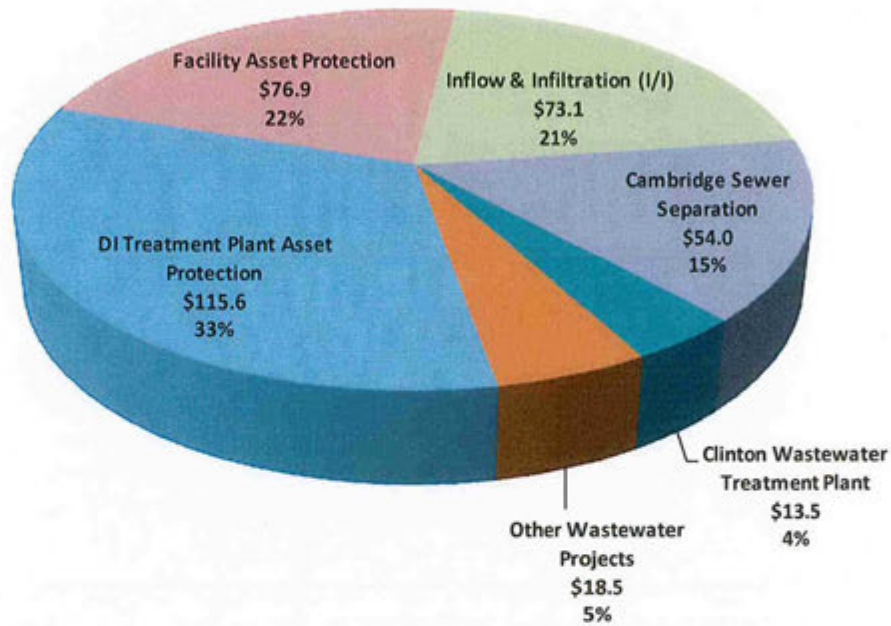
	FY14	FY15	FY16	FY17	FY18	Total FY14-18
Wastewater System Improvements	\$55.7	\$75.4	\$64.2	\$73.1	\$83.2	\$351.5
Interception & Pumping	6.9	8.6	6.6	21.5	36.7	80.3
Treatment	29.1	25.7	27.3	22.5	24.4	128.9
Residuals	0.1	-	-	-	2.8	2.9
CSO	15.6	23.6	16.7	10.2	0.2	66.2
Other Wastewater	4.0	17.5	13.6	18.8	19.0	73.1
Waterworks System Improvements	\$41.0	\$22.7	\$26.7	\$61.0	\$76.1	\$227.5
Drinking Water Quality Improvements	30.2	12.4	7.1	1.6	4.0	55.3
Transmission	4.5	2.5	8.1	28.0	22.5	65.6
Distribution & Pumping	4.8	8.9	15.0	23.7	39.6	92.0
Other Waterworks	1.5	(1.1)	(3.4)	7.7	10.1	14.7
Business & Operations Support	5.5	5.5	4.2	8.8	10.2	34.2
Total MWRA	\$102.2	\$103.6	\$95.1	\$142.9	\$169.5	\$613.3

The graph below illustrates the breakdown by the major program spending for the FY14-18 timeframe and highlights MWRA's accomplishment in reaching substantial completion by December 2015 in accordance with Schedule Seven of the Federal District Court Order of the construction of the court-mandated CSO program at a total cost since 1986 of \$907 million. During the FY14-18 Cap period, the last two components of the CSO Control Program were completed: the Boston Reserve Channel and Cambridge Sewer Separation – respectively accounting for \$10.6 million and \$54.0 million of spending during the FY14-18 Cap period. Final restoration work will continue through 2017. Going forward, MWRA will move to a monitoring, reporting, and evaluation phase for the program.



It is important to emphasize that the majority of spending within the Wastewater and Waterworks programs is concentrated in several larger projects with significant spending in the FY14-18 timeframe. The top 5 projects for the Wastewater program total \$351.5 million for FY14-18 period and represent 94.7% of the \$351.5 million total program.

**Top 5 Wastewater Projects
FY14-18 Spending (\$ in millions)**

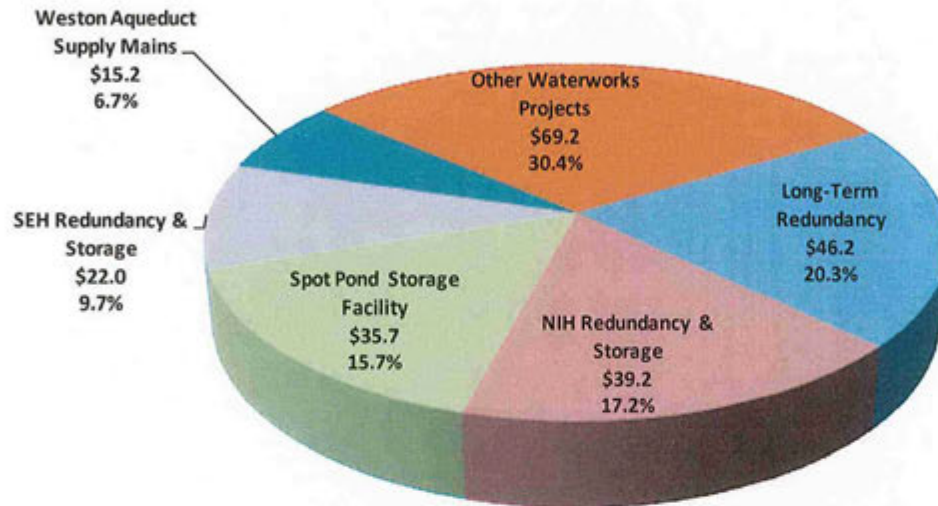


Project	FY14-18 Spending	% of Program
DI Treatment Plant Asset Protection	\$115.6	32.9%
Facility Asset Protection	\$76.9	21.9%
Inflow & Infiltration (I/I)	\$73.1	20.8%
Cambridge Sewer Separation	\$54.0	15.4%
Clinton Wastewater Treatment Plant	\$13.5	3.8%
Total Top 5 Wastewater Projects	\$333.0	94.7%
Other Wastewater Projects	\$18.5	5.3%
Total Wastewater	\$351.5	100.0%

Similarly, the top 5 projects for the Waterworks program total \$158.4 million for FY14-18 and represent 69.6% of the \$227.5 million total program.

The breakdown of the \$227.5 million program by major project is illustrated below:

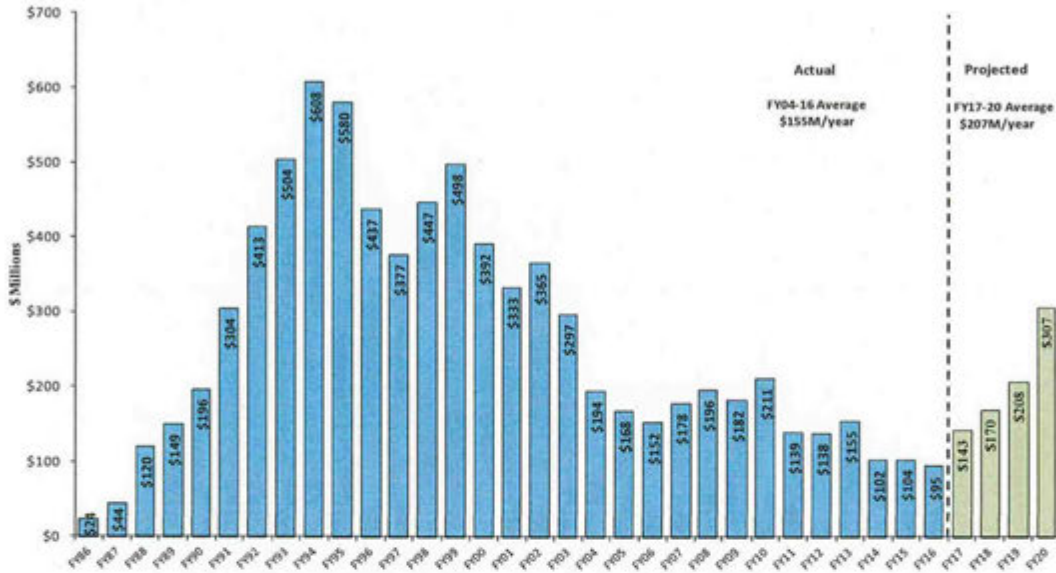
**Top 5 Waterworks Projects
FY14-18 Spending (\$ in millions)**



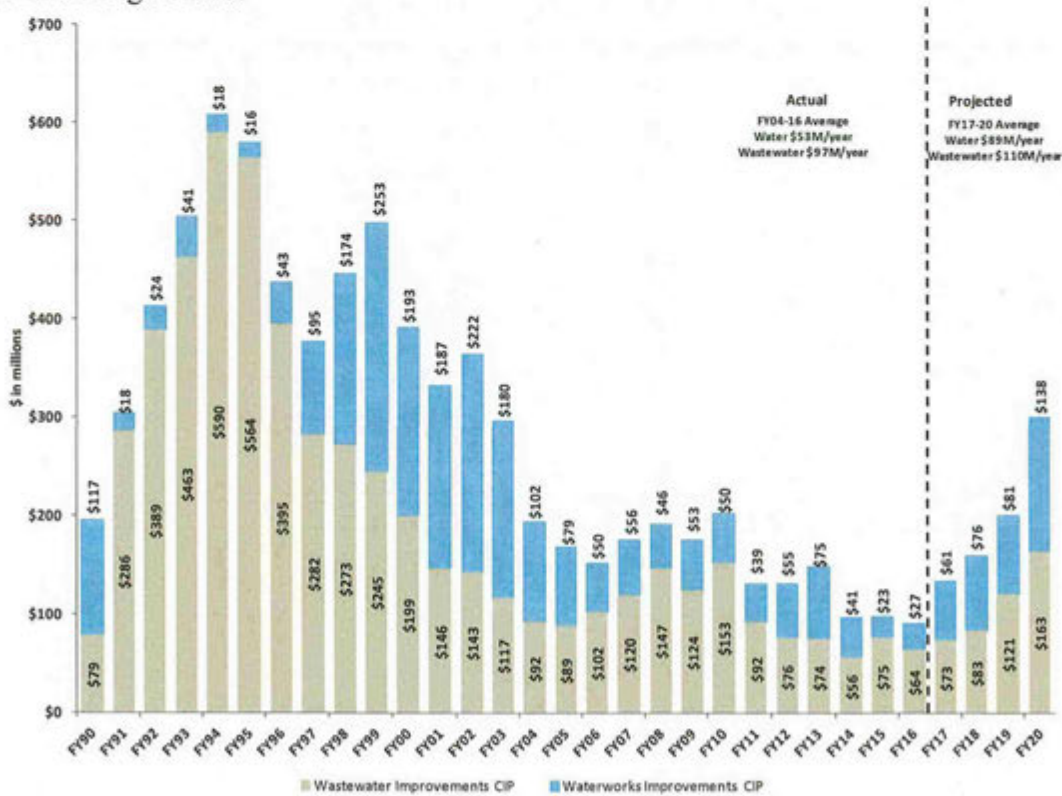
Project	FY14-18 Spending	% of Program
Long-Term Redundancy	\$46.2	20.3%
NIH Redundancy & Storage	\$39.2	17.2%
Spot Pond Storage Facility	\$35.7	15.7%
SEH Redundancy & Storage	\$22.0	9.7%
Weston Aqueduct Supply Mains	\$15.2	6.7%
Total Top 5 Waterworks Projects	\$158.4	69.6%
Other Waterworks Projects	\$69.2	30.4%
Total Waterworks	\$227.5	100.0%

Historical Spending

The chart below captures the historical CIP spending through FY16 and projects spending to FY20 based on the FY18 Proposed CIP.



The chart below shows the historical CIP spending from 1990 through FY16 by utility with projections through FY20.



Changing Nature of the Capital Program - Shift from Mandated Projects

Since 1985, nearly 80% of the Authority’s spending had been on court mandated projects. Going forward, the majority of spending will support Asset Protection, Water System Redundancy, Pipeline Replacement and Rehabilitation, and continued support for Community Assistance Programs. Asset Protection and Water System Redundancy spending is projected to rise from past levels and currently accounts for 51.2% and 20.1% of FY14-18 capital expenditures respectively, a total of nearly \$437.2 million of the \$613.3 million projected to be spent over the 5-year period.

MWRA is currently updating its Master Plan which will prioritize projects and provide information for the appropriate amount of the next CIP five-year Cap. It is anticipated that Asset Protection and Water System Redundancy will account for 90% of the CIP spending over the next five-year Cap period covering FY19-23.

	FY14-18	FY19-23
Asset Protection	\$314.0	\$879.4
Carroll WTP	12.3	5.1
Water Redundancy	123.2	395.7
CSO	66.2	5.6
Other	97.7	120.5
Total	\$613.3	\$1,406.3
Asset Protection	51.2%	62.5%
Carroll WTP	2.0%	0.4%
Water Redundancy	20.1%	28.1%
CSO	10.8%	0.4%
Other	15.9%	8.6%
Total	100.0%	100.0%

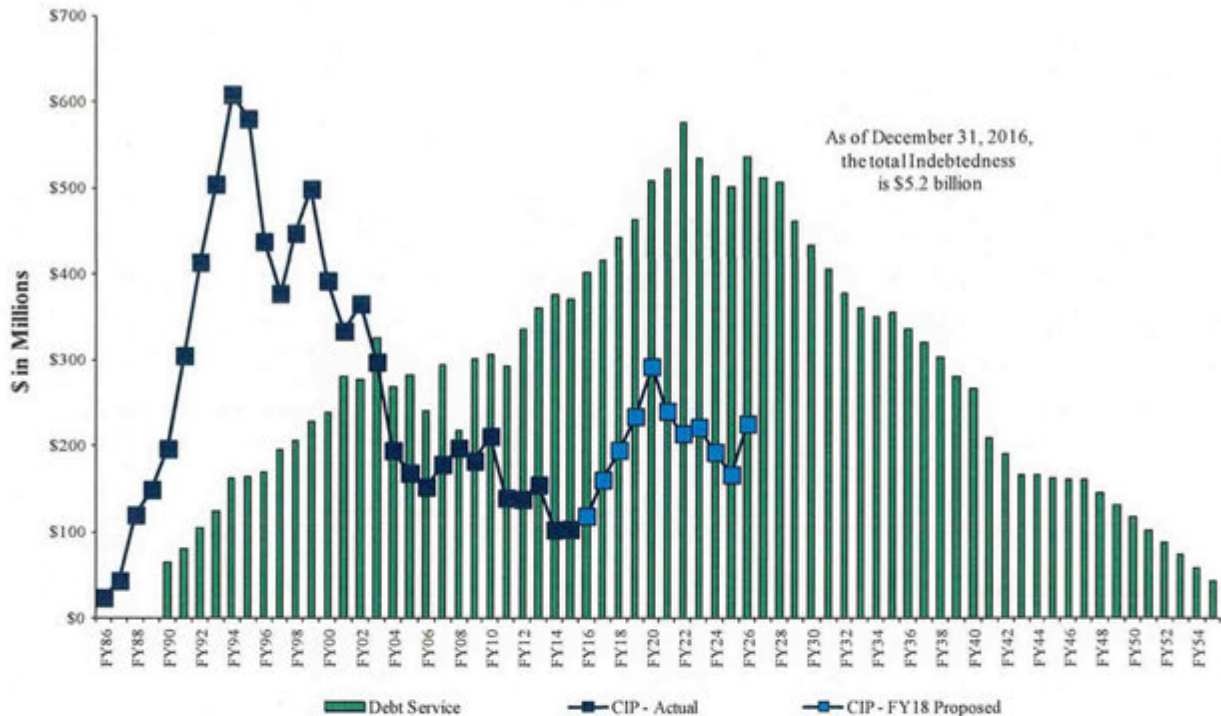
MWRA Capital Improvement Spending versus Debt Service

The following graph was updated with the FY18 Proposed CIP spending and debt service projections to illustrate the relationship between the MWRA’s CIP and debt service.

As of December 31, 2016, MWRA’s total debt was \$5.2 billion, which is \$.2 billion less than the MWRA’s total debt as of December 31, 2015. However, debt service obligations are projected to increase in coming years peaking in 2022. The Authority’s debt service as a percent of total expenses has increased from 36% in 1990 to 63% in the Final FY17 Current Expense Budget. Peak debt service is currently projected to be 66% of total expenses in FY22.

The FY18 Proposed CIP reaffirms that the MWRA is reducing its total bonded indebtedness over the Cap period by paying off more principal on debt than annual CIP spending and resulting borrowing.

MWRA Capital Improvement Spending & Debt Service



Contingency

Contingency for each fiscal year is incorporated into the CIP to fund the uncertainties inherent to construction. The contingency budget is calculated as a percentage of budgeted expenditure outlays. Specifically, contingency is 7% for non-tunnel projects and 15% for tunnel projects. The total contingency budget in the FY18 Proposed CIP is \$195.6 million, with \$17.4 million during FY14-18.

CIP Review and Adoption Process

The Advisory Board will have 60 days from the transmittal of the FY18 Proposed CIP to review the budget and prepare comments and recommendations. During the review period, Advisory Board and MWRA staff will continue to meet and discuss the changes to the capital budget. The Advisory Board will transmit its comments and recommendations to MWRA in the spring after their review. Staff will prepare draft responses to the Advisory Board’s recommendations for discussion at the budget hearing. During the spring, MWRA will update the CIP to incorporate the latest information into the Final budget. In June, staff will present the FY18 Final CIP to the Board for adoption.

ATTACHMENTS:

- A. New Capital Projects Added to the FY18 Proposed CIP
- B. FY18 Proposed Project Level Expenditure Forecast
- C. Overview of the FY18 Proposed CIP and Changes from the FY17 Final CIP

ATTACHMENT A
New Capital Projects Added to the FY18 CIP

Project	Program	Project	Subphase	Contract Number	Total Contract Amount	NTP	SC	FY18	FY14-18	FY19-23	Beyond FY23	Total Expenditures
1	Interception & Pumping	Corrosion & Odor Control	Nut Island Headworks Odor Control and HVAC Improvements Construction	7548	\$ 10,000,000	Dec-18	Dec-20		\$ -	\$ 10,000,000	\$ -	\$ 10,000,000
2	Interception & Pumping	Facility Asset Protection	Fuel Oil Tank Replacements at Various Facilities Design CA/RI	7553	\$ 1,528,605	Jul-17	Jul-21	\$ 286,614	\$ 286,614	\$ 1,241,991		\$ 1,528,605
	Interception & Pumping	Facility Asset Protection	Fuel Oil Tank Replacements at Various Facilities Construction Phase 1	7554	\$ 3,566,745	Jul-18	Jul-20		\$ -	\$ 3,566,745		\$ 3,566,745
	Interception & Pumping	Facility Asset Protection	Fuel Oil Tank Replacements at Various Facilities Construction Phase 2	7555	\$ 2,547,675	Jan-19	Jul-20		\$ -	\$ 2,547,675		\$ 2,547,675
3	Interception & Pumping	Facility Asset Protection	Headworks Effluent Shaft Rehabilitation Design CA/RI	7549	\$ 2,038,140	Jan-19	Jul-22		\$ -	\$ 2,038,140		\$ 2,038,140
	Interception & Pumping	Facility Asset Protection	Headworks Effluent Shaft Rehabilitation Construction	7550	\$ 10,190,700	Jul-20	Jul-21		\$ -	\$ 10,190,700		\$ 10,190,700
4	Interception & Pumping	Facility Asset Protection	Wiggins Terminal Pump Station Replacement Design CA/RI	7551	\$ 508,855	Sep-17	Apr-21	\$ 80,955	\$ 80,955	\$ 427,900		\$ 508,855
	Interception & Pumping	Facility Asset Protection	Wiggins Terminal Pump Station Replacement Construction	7552	\$ 2,035,420	Apr-19	Apr-20		\$ -	\$ 2,035,420		\$ 2,035,420
5	Treatment	DITP Asset Protection	Fixed Gas Protection Systems Replacement	7167	\$ 2,000,000	Nov-17	Nov-19	\$ 166,667	\$ 166,667	\$ 1,833,333		\$ 2,000,000
6	Residuals	Residuals Asset Protection	Residuals Pellet Conveyance Piping	7173	\$ 3,000,000	Dec-17	Jun-19	\$ 166,667	\$ 166,667	\$ 2,833,333		\$ 3,000,000
7	Distribution and Pumping	Northern Low Service - Section 8	Section 57 Water Pipeline and Sect. 21/20/19 Sewer Rehab Design/ESDC/REI	7540	\$ 4,800,000	Jul-17	Nov-21	880,000	\$ 880,000	\$ 3,920,000		\$ 4,800,000
	Distribution and Pumping	Northern Low Service - Section 8	Section 57 Water Pipeline and Sect. 21/20/19 Sewer Rehab Construction	7541	\$ 22,272,000	May-19	Nov-20		\$ -	\$ 22,272,000		\$ 22,272,000
8	Transmission	Metropolitan Redundancy Interim Improvements	Metropolitan Redundancy Interim Improvements Design CA/RI	7560	\$ 10,414,895	Jan-18	Jul-23	150,000	\$ 150,000	\$ 9,412,000	\$ 852,895	\$ 10,414,895
	Transmission	Metropolitan Redundancy Interim Improvements	Tops of Shafts Interim Improvements Construction	7561	\$ 6,114,420	Jan-19	Jan-20		\$ -	\$ 6,114,420		\$ 6,114,420
9	Transmission	Metropolitan Redundancy Interim Improvements	Chestnut Hill Emergency Pump Station Improvements Construction	7562	\$ 18,343,260	Jul-20	Jul-22		\$ -	\$ 18,343,260		\$ 18,343,260
10	Transmission	Metropolitan Redundancy Interim Improvements	WASM/Spot Pond Supply Mains West PRV Improvements Construction	7563	\$ 8,152,560	Jul-19	Jul-21		\$ -	\$ 8,152,560		\$ 8,152,560
11	Transmission	Watershed Improvements	Quabbin Admin Building Rehabilitation Design CA/RI	7564	\$ 3,000,000	Jul-17	Jul-21	614,000	\$ 614,000	\$ 2,386,000		\$ 3,000,000
	Transmission	Watershed Improvements	Quabbin Admin Building Rehabilitation Construction	7565	\$ 12,000,000	Jul-19	Jul-21			\$ 12,000,000		\$ 12,000,000
SUMMARY:												
Total Wastewater Projects					\$ 37,416,140			\$ 700,903	\$ 700,903	\$ 36,715,237	\$ -	\$ 37,416,140
Total Waterworks Projects					\$ 85,097,135			\$ 1,644,000	\$ 1,644,000	\$ 82,600,240	\$ 852,895	\$ 85,097,135
Total Projects					\$ 122,513,275			\$ 2,344,903	\$ 2,344,903	\$ 119,315,477	\$ 852,895	\$ 122,513,275

**ATTACHMENT B
FY18 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

Program/Project/Subphase	Total Contract Amount	Payments through FY16	Remaining Balance	FY17	FY18	FY14 - FY18	FY19-FY23	Beyond FY23
Total MWRA	7,296,484,522	3,989,048,179	3,307,436,343	142,870,027	169,503,932	613,297,221	1,406,312,374	1,588,749,993
Wastewater	3,172,494,495	1,931,262,178	1,241,232,317	73,084,692	83,174,142	351,520,357	775,726,450	309,247,029
Interception & Pumping	980,614,986	542,626,109	437,988,877	21,534,912	36,712,381	80,333,339	301,064,667	78,676,916
102 Quincy Pump Facilities	25,907,202	25,907,202	-					
104 Braintree-Weymouth Relief Facilities	234,492,623	227,704,621	6,788,001	-	240,899	241,588	6,547,101	-
105 New Neponset Valley Relief Sewer	30,300,304	30,300,304	-					
106 Wellesley Extension Replacement Sewer	64,358,543	64,358,543	-					
107 Framingham Extension Relief Sewer	47,855,986	47,855,986	-					
127 Cummingsville Replacement Sewer	8,998,768	8,998,768	-				-	
130 Siphon Structure Rehabilitation	6,880,793	939,770	5,941,023	-	-	-	5,941,023	
131 Upper Neponset Valley Sewer System	54,174,077	54,174,077	-					
132 Corrosion & Odor Control	27,879,417	3,372,834	24,506,583	535,216	1,092,705	1,999,351	22,878,662	
136 West Roxbury Tunnel	11,313,573	10,313,573	1,000,000	-	-	-	1,000,000	-
137 Wastewater Central Monitoring	27,482,036	19,782,036	7,700,000	-	360,000	359,835	3,050,000	4,290,000
139 South System Relief	4,939,244	3,439,244	1,500,000	-	-	-	1,500,000	-
141 Wastewater Process Optimization	10,416,274	1,501,767	8,914,507	-	-	296,588	5,195,484	3,719,023
142 Wastewater Meter System - Equipment Replacement	28,437,912	5,137,912	23,300,000	-	512,500	512,500	8,187,500	14,600,000

**ATTACHMENT B
FY18 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

Program/Project/Subphase	Total Contract Amount	Payments through FY16	Remaining Balance	FY17	FY18	FY14 - FY18	FY19-FY23	Beyond FY23
143 Regional I/I Management Planning	168,987	168,987	-					
145 Facility Asset Protection	391,259,249	38,670,485	352,588,764	20,999,697	34,506,277	76,923,477	241,014,897	56,067,893
146 Deer Island Cross Harbor Tunnel	5,000,000	-	5,000,000	-	-	-	5,000,000	-
147 Randolph Trunk Sewer Relief	750,000	-	750,000	-	-	-	750,000	-
Treatment	871,835,505	266,822,001	605,013,504	22,468,263	24,369,942	128,937,436	399,025,752	159,149,545
182 Deer Island Primary and Secondary Treatment	(957,878)	(957,878)	-					
200 Deer Island Plant Optimization	33,278,598	33,278,598	-	-	-	(148,080)	-	-
206 Deer Island Treatment Plant Asset Protection	814,867,853	224,644,166	590,223,687	16,023,274	22,449,334	115,616,197	393,198,504	158,552,574
210 Clinton Wastewater Treatment Plant	22,419,257	7,629,442	14,789,815	6,444,989	1,920,608	13,469,319	5,827,248	596,971
211 Laboratory Services	2,227,674	2,227,674	-					
Residuals	167,642,622	64,642,623	103,000,000	-	2,835,243	2,942,050	17,873,091	82,291,666
261 Residuals	63,810,848	63,810,848	-					
271 Residuals Asset Protection	103,831,775	831,775	103,000,000	-	2,835,243	2,942,050	17,873,091	82,291,666
CSO	909,535,519	893,499,645	16,035,874	10,243,877	209,250	66,246,446	5,582,744	
CSO MWRA Managed	433,555,016	433,388,865	166,152	166,150	-	3,676,538	-	-
339 North Dorchester Bay	221,509,794	221,509,793	-	-	-	(110,812)		
347 East Boston Branch Sewer Relief	85,637,164	85,637,164	-	-	-	(8,831)		

**ATTACHMENT B
FY18 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

Program/Project/Subphase	Total Contract Amount	Payments through FY16	Remaining Balance	FY17	FY18	FY14 - FY18	FY19-FY23	Beyond FY23
348 BOS019 Storage Conduit	14,287,581	14,287,581	-					
349 Chelsea Trunk Sewer	29,779,319	29,779,320	-					
350 Union Park Detention Treatment Facility	49,583,407	49,583,407	-					
353 Upgrade Existing CSO Facilities	22,385,200	22,385,200	-					
354 Hydraulic Relief Projects	2,294,549	2,294,549	-					
355 MWR003 Gate & Siphon	4,444,927	4,278,777	166,150	166,150	-	3,796,182	-	-
357 Charles River CSO Controls	3,633,077	3,633,077	-					
CSO Community Managed	424,332,383	411,907,555	12,424,828	8,667,068	-	62,111,187	3,757,757	-
340 Dorchester Bay Sewer Separation (Fox Point)	54,625,590	54,625,590	-	-	-	473,295		
341 Dorchester Bay Sew Separation (Commercial Point)	64,173,625	60,542,452	3,631,173	(126,584)	-	(731,282)	3,757,757	-
342 Neponset River Sewer Separation	2,549,087	2,549,087	-	-	-	104,692		
343 Constitution Beach Sewer Separation	3,731,315	3,731,315	-	-	-	(37,573)		
344 Stony Brook Sewer Separation	44,246,462	44,246,463	-	-	-	48,079		
346 Cambridge Sewer Separation	104,448,064	95,869,484	8,578,580	8,578,580	-	53,963,860	-	-
351 BWSC Floatables Controls	945,936	945,936	-	-	-	12,957		
352 Cambridge Floatables Controls	1,126,708	1,126,708	-	-	-	39,783		
356 Fort Point Channel Sewer Separation	11,917,090	11,917,089	-	-	-	(89,618)		
358 Morrissey Boulevard Drain	32,185,790	32,188,262	(2,472)	(2,473)	-	(160,999)		

**ATTACHMENT B
FY18 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

Program/Project/Subphase	Total Contract Amount	Payments through FY16	Remaining Balance	FY17	FY18	FY14 - FY18	FY19-FY23	Beyond FY23
359 Reserved Channel Sewer Separation	70,613,021	70,395,477	217,545	217,545	-	10,573,120	-	-
360 Brookline Sewer Separation	24,715,291	24,715,291	-	-	-	(1,282,073)		
361 Bulfinch Triangle Sewer Separation	9,054,405	9,054,404	-	-	-	(803,053)		
324 CSO Support	51,648,120	48,203,225	3,444,896	1,410,659	209,250	458,721	1,824,987	-
Other Wastewater	242,865,861	163,671,801	79,194,061	18,837,640	19,047,325	73,061,085	52,180,196	(10,871,098)
128 I/I Local Financial Assistance	242,584,985	163,390,925	79,194,061	18,837,640	19,047,325	73,061,085	52,180,196	(10,871,098)
138 Sewerage System Mapping Upgrades	280,876	280,876	-					
Waterworks	3,992,529,303	1,965,078,162	2,027,451,141	60,990,433	76,144,505	227,530,696	610,813,229	1,279,502,964
Drinking Water Quality Improvements	665,999,644	644,945,565	21,054,079	1,578,356	3,961,845	55,278,215	5,096,869	10,417,007
542 Carroll Water Treatment Plant	438,984,378	418,815,184	20,169,194	922,827	3,732,492	12,261,977	5,096,869	10,417,007
543 Brutsch Water Treatment Facility	19,972,883	19,972,879	-	-	-	7,204,637		
544 Norumbega Covered Storage	106,674,147	106,674,146	-					
545 Blue Hills Covered Storage	40,082,837	40,082,837	-	-	-	120,000		
550 Spot Pond Storage Facility	60,285,401	59,400,519	884,882	655,529	229,353	35,691,600		
Transmission	2,451,652,508	770,602,308	1,681,050,201	28,197,388	24,497,036	68,258,575	352,981,133	1,275,374,640
597 Winsor Station Pipeline	32,877,576	2,578,137	30,299,439	1,921,238	1,478,854	4,582,638	23,838,027	3,061,320
601 Sluice Gate Rehabilitation	9,158,411	9,158,411	-					

**ATTACHMENT B
FY18 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

Program/Project/Subphase	Total Contract Amount	Payments through FY16	Remaining Balance	FY17	FY18	FY14 - FY18	FY19-FY23	Beyond FY23
604 MetroWest Tunnel	701,177,915	697,046,552	4,131,364	65,361	156,000	1,869,405	3,910,000	-
615 Chicopee Valley Aqueduct Redundancy	8,666,292	8,666,291	-					
616 Quabbin Transmission System	16,405,914	7,456,913	8,949,001	1,049,000	-	1,303,449	7,900,000	-
617 Sudbury/Weston Aqueduct Repairs	6,452,684	1,371,948	5,080,736	1,290,069	427,664	2,429,733	3,363,003	-
620 Wachusett Reservoir Spillway Improvements	9,287,460	9,287,460	-	-	-	-	-	-
621 Watershed Land	24,000,000	19,277,400	4,722,600	1,580,000	1,500,000	5,015,000	1,642,600	-
622 Cosgrove Tunnel Redundancy	53,030,240	9,131,536	43,898,704	21,840,654	16,435,405	46,232,153	5,621,291	1,354
623 Dam Projects	4,538,205	3,115,745	1,422,460	5	515,113	545,681	907,342	-
625 Metropolitan Tunnel Redundancy	1,357,685,868	3,008,809	1,354,677,059	228,177	2,020,000	3,590,530	151,110,826	1,201,318,056
628 Metropolitan Redundancy Interim Improvements	213,371,942	503,104	212,868,838	222,884	1,350,000	2,075,988	140,302,044	70,993,910
630 Watershed Division Capital Improvements	15,000,000	-	15,000,000	-	614,000	614,000	14,386,000	-
Distribution And Pumping	805,461,182	400,906,743	404,554,440	23,493,407	37,630,372	89,326,945	179,165,530	164,265,126
677 Valve Replacement	20,114,541	12,016,378	8,098,163	-	-	-	3,558,280	4,539,878
678 Boston Low Service - Pipe & Valve Rehabilitation	23,690,863	23,690,863	-					
683 Heath Hill Road Pipe Replacement	19,358,036	19,358,036	-					
689 James L. Gillis Pump Station	33,419,007	33,419,008	-					
692 Northern High Service - Section 27 Improvement	1,133,702	123,646	1,010,055	14,310	13,196	27,506	982,549	-
693 NHS - Revere & Malden Pipeline Improvements	57,526,870	26,954,957	30,571,913	236,531	1,050,250	1,408,998	29,285,132	-

**ATTACHMENT B
FY18 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

Program/Project/Subphase	Total Contract Amount	Payments through FY16	Remaining Balance	FY17	FY18	FY14 - FY18	FY19-FY23	Beyond FY23
702 New Connecting Mains - Shaft 7 to WASM 3	37,860,699	11,315,807	26,544,892	906,100	1,143,000	2,404,100	21,907,133	2,588,658
704 Rehab of Other Pump Stations	50,257,852	30,057,852	20,200,000	-	-	-	1,320,834	18,879,166
706 NHS-Connecting Mains from Section 91	2,360,194	2,360,194	-					
708 Northern Extra High Service - New Pipelines	8,045,232	3,632,119	4,413,114	20,687	36,428	57,115	3,599,000	756,999
712 Cathodic Protection of Distribution Mains	1,703,947	208,121	1,495,826	108,473	42,071	217,752	1,345,284	-
713 Spot Pond Supply Mains Rehab	66,927,509	63,601,327	3,326,182	2,000,532	50,000	4,669,859	1,275,650	-
714 Southern Extra High Sections 41 & 42	3,657,244	3,657,244	-					
719 Chestnut Hill Connecting Mains	33,094,496	17,486,675	15,607,821	1,000,000	-	1,000,000	14,602,301	5,520
720 Warren Cottage Line Rehab	1,204,821	1,204,821	-					
721 Southern Spine Distribution Mains	76,280,691	36,683,102	39,597,589	952	376,270	368,675	4,041,607	35,178,761
722 NIH Redundancy & Storage	105,654,814	15,344,942	90,309,873	12,015,431	17,860,063	39,246,071	37,452,627	22,981,752
723 Northern Low Service Rehab Section 8	52,677,936	2,320,986	50,356,950	13,100	900,800	913,900	27,729,500	21,713,550
725 Hydraulic Model Update	598,358	598,358	-					
727 SEH Redundancy & Storage	107,884,706	8,943,573	98,941,134	5,125,132	14,704,000	22,015,734	22,458,565	56,653,437
730 Weston Aqued. Supply Mains	81,563,884	79,585,770	1,978,112	1,238,159	382,885	15,163,519	357,068	-
731 Lynnfield Pipeline	5,625,829	5,625,828	-	-	-	(51,694)		
732 Walnut St. & Fisher Hill Pipeline Rehab	2,717,141	2,717,141	-					
735 Section 80 Rehabilitation	12,102,815	-	12,102,815	814,000	1,071,409	1,885,409	9,250,000	967,406

**ATTACHMENT B
FY18 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

Program/Project/Subphase	Total Contract Amount	Payments through FY16	Remaining Balance	FY17	FY18	FY14 - FY18	FY19-FY23	Beyond FY23
Other Waterworks	69,415,968	148,623,546	(79,207,578)	7,721,281	10,055,252	14,666,961	73,569,697	(170,553,809)
753 Central Monitoring System	39,040,065	17,804,950	21,235,115	2,674,204	1,516,464	6,191,890	6,277,328	10,767,120
763 Distribution System Facilities Mapping	2,298,919	1,036,368	1,262,551	-	-	-	1,262,551	-
764 Local Water Infrastructure Rehab	7,487,762	7,487,762	-					
765 Local Water System Assistance Program	-	121,568,086	(121,568,085)	3,287,581	7,457,217	5,453,643	49,770,045	(182,082,929)
766 Waterworks Facility Asset Protection	20,589,222	726,381	19,862,841	1,759,496	1,081,571	3,021,429	16,259,774	762,000
Business & Operations Support	131,460,724	92,707,839	38,752,885	8,794,902	10,185,285	34,246,168	19,772,696	-
881 Equipment Purchase	29,187,988	18,488,576	10,699,412	2,723,113	2,210,000	11,314,361	5,766,298	-
925 Technical Assistance	1,150,000	-	1,150,000	-	383,333	383,333	766,667	-
930 MWRA Facility - Chelsea	9,813,635	9,813,635	-					
931 Business Systems Plan	24,527,709	24,527,709	-	-	-	76,479		
932 Environmental Remediation	1,478,602	1,478,602	-	-	-	(200)		
933 Capital Maintenance Planning & Development	15,886,005	12,543,838	3,342,168	1,683,802	1,370,804	5,474,202	287,562	-
934 MWRA Facilities Management	2,150,535	370,533	1,780,002	-	-	-	1,780,002	-
935 Alternative Energy Initiatives	23,270,514	17,454,074	5,816,439	833,490	100,000	1,190,760	4,882,950	-
940 Application Improvement Program	9,980,394	1,476,397	8,503,997	1,180,218	2,984,227	5,567,717	4,339,552	-
942 Information Security Program (ISP)	2,821,703	1,180,838	1,640,865	273,819	665,093	1,584,560	701,953	-

**ATTACHMENT B
FY18 PROPOSED PROJECT LEVEL EXPENDITURE FORECAST**

Program/Project/Subphase	Total Contract Amount	Payments through FY16	Remaining Balance	FY17	FY18	FY14 - FY18	FY19-FY23	Beyond FY23
944 Information Technology Management Program	922,640	-	922,640	727,590	165,107	892,697	29,943	-
946 IT Infrastructure Program	10,271,000	5,373,640	4,897,360	1,372,870	2,306,721	7,762,260	1,217,769	-

Attachment C
Overview of the FY18 Proposed CIP and Changes from the FY17 Final CIP

Program and Project	FY17 Final				FY18 Proposed				Change from Final FY17			
	Total Budget Amount	FY14-18	FY19-23	Beyond 23	Total Budget Amount	FY14-18	FY19-23	Beyond 23	Total Budget Amount	FY14-18	FY19-23	Beyond 23
Total MWRA	7,024,072	661,210	1,176,629	1,498,106	7,296,487	613,299	1,406,314	1,588,753	272,411	(47,916)	229,687	90,645
Wastewater	3,083,688	363,785	623,868	360,028	3,172,495	351,519	775,726	309,246	88,804	(12,267)	151,858	(50,783)
Interception & Pumping	938,785	85,595	186,827	145,821	980,615	80,334	301,065	78,677	41,828	(5,262)	114,238	(67,145)
102 Quincy Pump Facilities	25,907	-	-	-	25,907	-	-	-	-	-	-	-
104 Braintree-Weymouth Relief Facilities	232,455	208	4,543	-	234,493	242	6,547	-	2,038	34	2,004	-
105 New Neponset Valley Relief Sewer	30,300	-	-	-	30,300	-	-	-	-	-	-	-
106 Wellesley Extension Replacement Sewer	64,359	-	-	-	64,359	-	-	-	-	-	-	-
107 Framingham Extension Relief Sewer	47,856	-	-	-	47,856	-	-	-	-	-	-	-
127 Cummingsville Replacement Sewer	8,999	-	-	-	8,999	-	-	-	-	-	-	-
130 Siphon Structure Rehabilitation	6,669	-	5,729	-	6,881	-	5,941	-	212	-	212	-
131 Upper Neponset Valley Sewer	54,174	-	-	-	54,174	-	-	-	-	-	-	-
132 Corrosion & Odor Control	26,117	2,139	20,976	-	27,879	1,999	22,879	-	1,762	(140)	1,903	-
136 West Roxbury Tunnel	11,314	-	1,000	-	11,314	-	1,000	-	-	-	-	-
137 Wastewater Central Monitoring	27,482	375	2,910	4,415	27,482	360	3,050	4,290	-	(15)	140	(125)
139 South System Relief Project	4,939	-	1,500	-	4,939	-	1,500	-	-	-	-	-
141 Wastewater Process Optimization	10,389	297	5,168	3,719	10,416	297	5,195	3,719	27	-	27	-
142 Wastewater Meter System-Equipment	28,438	1,150	7,550	14,600	28,438	513	8,188	14,600	-	(637)	638	-
143 Regional I/I Management Planning	169	-	-	-	169	-	-	-	-	-	-	-
145 Facility Asset Protection	353,470	81,427	131,701	123,088	391,259	76,923	241,015	56,068	37,789	(4,504)	109,314	(67,020)
146 D.I. Cross Harbor Tunnel Inspection	5,000	-	5,000	-	5,000	-	5,000	-	-	-	-	-
147 Randolph Trunk Sewer Relief	750	-	750	-	750	-	750	-	-	-	-	-
Treatment	827,737	139,380	369,635	133,997	871,836	128,937	399,026	159,148	44,099	(10,443)	29,391	25,151
182 DI Primary and Secondary	(958)	-	-	-	(958)	-	-	-	-	-	-	-
200 DI Plant Optimization	33,279	(148)	-	-	33,279	(148)	-	-	-	-	-	-
206 DI Treatment Plant Asset Protection	772,633	126,319	365,173	133,640	814,868	115,616	393,199	158,552	42,235	(10,703)	28,026	24,912
210 Clinton Wastewater Treat Plant	20,555	13,209	4,462	358	22,419	13,469	5,827	597	1,864	260	1,365	239
211 Laboratory Services	2,228	-	-	-	2,228	-	-	-	-	-	-	-
Residuals	167,643	3,302	9,738	90,067	167,643	2,942	17,873	82,291	-	(360)	8,135	(7,776)
261 Residuals	63,811	-	-	-	63,811	-	-	-	-	-	-	-
271 Residuals Asset Protection	103,832	3,302	9,738	90,067	103,832	2,942	17,873	82,291	-	(360)	8,135	(7,776)

Attachment C
Overview of the FY18 Proposed CIP and Changes from the FY17 Final CIP

Program and Project	FY17 Final				FY18 Proposed				Change from Final FY17			
	Total Budget Amount	FY14-18	FY19-23	Beyond 23	Total Budget Amount	FY14-18	FY19-23	Beyond 23	Total Budget Amount	FY14-18	FY19-23	Beyond 23
CSO	906,658	65,970	2,979	-	909,535	66,245	5,582	-	2,877	275	2,603	-
340 Dorchester Bay Sewer Separation (Fox Point)	54,626	473	-	-	54,626	473	-	-	-	-	-	-
341 Dorchester Bay Sewer Separation (Commercial Point)	64,174	1,650	1,376	-	64,174	(731)	3,758	-	-	(2,381)	2,382	-
342 Neponset River Sewer Separation	2,549	105	-	-	2,549	105	-	-	-	-	-	-
343 Constitution Beach Sewer Separation	3,731	(38)	-	-	3,731	(38)	-	-	-	-	-	-
344 Stony Brook Sewer Separation	44,246	48	-	-	44,246	48	-	-	-	-	-	-
346 Cambridge Sewer Separation	102,745	52,261	-	-	104,448	53,964	-	-	1,703	1,703	-	-
351 BWSC Floatables Controls	946	13	-	-	946	13	-	-	-	-	-	-
352 Cambridge Floatables Control	1,127	40	-	-	1,127	40	-	-	-	-	-	-
356 Fort Point Channel Sewer Separation	11,917	(90)	-	-	11,917	(90)	-	-	-	-	-	-
358 Morrissey Boulevard Drain	32,186	(161)	-	-	32,186	(161)	-	-	-	-	-	-
359 Reserved Channel Sewer Separation	70,749	10,709	-	-	70,613	10,573	-	-	(136)	(136)	-	-
360 Brookline Sewer Separation	24,715	(1,282)	-	-	24,715	(1,282)	-	-	-	-	-	-
361 Bulfinch Triangle Sewer Separation	9,054	(803)	-	-	9,054	(803)	-	-	-	-	-	-
339 North Dorchester Bay	221,600	(21)	-	-	221,510	(111)	-	-	(90)	(90)	-	-
347 East Boston Branch Sewer Relief	85,637	(9)	-	-	85,637	(9)	-	-	-	-	-	-
348 BOS019 Storage Conduit	14,288	-	-	-	14,288	-	-	-	-	-	-	-
349 Chelsea Trunk Sewer	29,779	-	-	-	29,779	-	-	-	-	-	-	-
350 Union Park Detention Treatment Facility	49,583	-	-	-	49,583	-	-	-	-	-	-	-
353 Upgrade Existing CSO Facilities	22,385	-	-	-	22,385	-	-	-	-	-	-	-
354 Hydraulic Relief Projects	2,295	-	-	-	2,295	-	-	-	-	-	-	-
355 MWR003 Gate & Siphon	4,445	3,796	-	-	4,445	3,796	-	-	-	-	-	-
357 Charles River CSO Controls	3,633	-	-	-	3,633	-	-	-	-	-	-	-
324 CSO Support	50,248	(720)	1,604	-	51,648	459	1,825	-	1,400	1,179	221	-
Other Wastewater	242,866	69,538	54,689	(9,857)	242,866	73,061	52,180	(10,870)	-	3,523	(2,509)	(1,013)
128 I/I Local Financial Assistance	242,585	69,538	54,689	(9,857)	242,585	73,061	52,180	(10,870)	-	3,523	(2,509)	(1,013)
138 Sewerage System Mapping Upgrade	281	-	-	-	281	-	-	-	-	-	-	-
Total Waterworks	3,806,266	258,415	535,095	1,138,079	3,992,531	227,533	610,818	1,279,510	186,265	(30,884)	75,721	141,428
Drinking Water Quality	664,361	56,661	11,857	637	665,999	55,279	5,097	10,417	1,638	(1,382)	(6,760)	9,780
542 Carroll Water Treatment Plant	436,904	13,599	11,460	637	438,984	12,262	5,097	10,417	2,080	(1,337)	(6,363)	9,780
543 Quabbin Water Treatment Plant	19,973	7,205	-	-	19,973	7,205	-	-	-	-	-	-
544 Norumbega Covered Storage	106,674	-	-	-	106,674	-	-	-	-	-	-	-
545 Blue Hills Covered Storage	40,557	198	397	-	40,083	120	-	-	(474)	(78)	(397)	-
550 Spot Pond Storage Facility	60,253	35,659	-	-	60,285	35,692	-	-	32	33	-	-

Attachment C
Overview of the FY18 Proposed CIP and Changes from the FY17 Final CIP

Program and Project	FY17 Final				FY18 Proposed				Change from Final FY17			
	Total Budget Amount	FY14-18	FY19-23	Beyond 23	Total Budget Amount	FY14-18	FY19-23	Beyond 23	Total Budget Amount	FY14-18	FY19-23	Beyond 23
Transmission	2,291,472	81,970	364,993	1,089,470	2,451,654	68,261	352,983	1,275,377	160,182	(13,711)	(12,012)	185,904
597 Winsor Station Pipeline	31,177	5,522	24,260	-	32,878	4,583	23,838	3,061	1,701	(939)	(422)	3,061
601 Sluice Gate Rehabilitation	9,158	-	-	-	9,158	-	-	-	-	-	-	-
604 MetroWest Tunnel	707,447	2,007	9,923	118	701,178	1,869	3,910	-	(6,269)	(138)	(6,013)	(118)
615 Chicopee Valley Aqueduct Redundancy	8,666	-	-	-	8,666	-	-	-	-	-	-	-
616 Quabbin Transmission System	15,957	1,254	7,500	-	16,406	1,303	7,900	-	449	49	400	-
617 Sudbury/Weston Aqueduct Repairs	6,553	2,548	3,345	-	6,453	2,430	3,363	-	(100)	(118)	18	-
620 Wachusett Reservoir Spillway Improvement	9,287	-	-	-	9,287	-	-	-	-	-	-	-
621 Watershed Land	24,000	6,658	-	-	24,000	5,015	1,643	-	-	(1,643)	1,643	-
622 Cosgrove/Wachusett Redundancy	-	-	-	-	53,030	46,232	5,621	1	53,030	46,232	5,621	1
623 Dam Projects	4,538	546	907	-	4,538	546	907	-	-	-	-	-
625 Metro Tunnel Redundancy	1,474,687	63,435	319,058	1,089,353	1,357,686	3,591	151,111	1,201,319	(117,001)	(59,844)	(167,947)	111,966
628 Metro Redundancy Interim Improvement	-	-	-	-	213,372	2,076	140,302	70,994	213,372	2,076	140,302	70,994
630 Watershed Division Capital Improvement	-	-	-	-	15,000	614	14,386	-	15,000	614	14,386	-
Distribution & Pumping	779,782	108,445	169,566	129,070	805,462	89,327	179,168	164,268	25,680	(19,118)	9,602	35,198
618 Northern High NW Tran Sections 70 & 71	1,000	474	526	-	-	-	-	-	(1,000)	(474)	(526)	-
677 Valve Replacement	22,749	2,153	4,183	4,397	20,115	-	3,558	4,540	(2,634)	(2,153)	(625)	143
678 Boston Low Service-Pipe & Valve Rehabilitation	23,691	-	-	-	23,691	-	-	-	-	-	-	-
683 Heath Hill Road Pipe Replacement	19,358	-	-	-	19,358	-	-	-	-	-	-	-
689 James L. Gillis Pump Station Rehabilitation	33,419	-	-	-	33,419	-	-	-	-	-	-	-
692 NHS - Section 27 Improvements	1,097	183	790	-	1,134	28	983	-	37	(155)	193	-
693 NHS - Revere & Malden Pipeline Improvement	55,010	814	27,363	-	57,527	1,409	29,285	-	2,517	595	1,922	-
702 New Connect Mains-Shaft 7 to WASM 3	36,255	2,559	22,638	97	37,861	2,404	21,907	2,589	1,606	(155)	(731)	2,492
704 Rehabilitation of Other Pump Stations	55,058	253	5,868	18,879	50,258	-	1,321	18,879	(4,800)	(253)	(4,547)	-
706 NHS-Connecting Mains from Section 91	2,360	-	-	-	2,360	-	-	-	-	-	-	-
708 Northern Extra High Service New Pipelines	7,889	59	3,498	701	8,045	57	3,599	757	156	(2)	101	56
712 Cathodic Protection Of Distribution Mains	1,656	418	1,097	-	1,704	218	1,345	-	48	(200)	248	-
713 Spot Pond Supply Mains Rehabilitation	68,810	4,564	3,214	50	66,928	4,670	1,276	-	(1,882)	106	(1,938)	(50)
714 Southern Extra High Sections 41 & 42	3,657	-	-	-	3,657	-	-	-	-	-	-	-
719 Chestnut Hill Connecting Mains	24,450	1,000	102	5,861	33,094	1,000	14,602	6	8,644	-	14,500	(5,855)
720 Warren Cottage Line Rehabilitation	1,205	-	-	-	1,205	-	-	-	-	-	-	-
721 South Spine Distribution Mains	74,985	369	3,964	33,961	76,281	369	4,042	35,179	1,296	-	78	1,218
722 NIH Redundancy & Storage	92,641	46,523	40,144	-	105,655	39,246	37,453	22,982	13,014	(7,277)	(2,691)	22,982
723 Northern Low Service Rehabilitation Section 8	23,441	44	20,036	1,041	52,678	914	27,730	21,715	29,237	870	7,694	20,674
724 Northern High Service - Pipeline Rehabilitation	-	-	-	-	-	-	-	-	-	-	-	-
725 Hydraulic Model Update	598	-	-	-	598	-	-	-	-	-	-	-
727 Southern Extra High Redundancy & Storage	101,694	31,452	8,866	54,619	107,885	22,016	22,459	56,653	6,191	(9,436)	13,593	2,034
730 Weston Aqueduct Supply Mains	109,811	16,679	18,209	8,879	81,564	15,164	357	-	(28,247)	(1,515)	(17,852)	(8,879)
731 Lynnfield Pipeline	5,626	(52)	-	-	5,626	(52)	-	-	-	-	-	-
732 Walnut St. & Fisher Hill Pipeline Rehabilitation	2,717	-	-	-	2,717	-	-	-	-	-	-	-

Attachment C
Overview of the FY18 Proposed CIP and Changes from the FY17 Final CIP

Program and Project	FY17 Final			
	Total Budget Amount	FY14-18	FY19-23	Beyond 23
733 NHS Pipeline Rehabilitation 13-18 & 48	-	-	-	-
734 Southern Extra High Pipelines-Sections 30, 39,40, & 44	-	-	-	-
735 Section 80 Rehabilitation	10,606	954	9,067	585
Other	70,651	11,339	(11,321)	(81,100)
753 Central Monitoring System	39,215	6,458	6,268	10,686
763 Distribution Systems Facilities Mapping	2,299	533	730	-
764 Local Water Infrastructure Rehabilitation Assistance	7,488	-	-	-
765 Local Water Pipeline Improvement Loan Program	-	1,797	(34,144)	(94,512)
766 Waterworks Facility Asset Protection	21,649	2,552	15,825	2,726
Business & Operations Support	134,119	39,010	17,667	-
881 Equipment Purchase	28,937	11,633	5,197	-
925 Technical Assistance	1,125	775	350	-
930 MWRA Facility - Chelsea	9,814	-	-	-
931 Business Systems Plan	24,528	76	-	-
932 Environmental Remediation	1,479	-	-	-
933 Capital Maintenance Planning	16,337	6,212	-	-
934 MWRA Facilities Management	2,151	-	1,780	-
935 Alternative Energy Initiatives	25,558	2,662	5,699	-
940 Applicat Improv Program	10,176	6,881	3,222	-
942 Info Security Program ISP	2,822	1,885	402	-
944 Info Tech Mgmt Program	923	893	30	-
946 IT Infrastructure Program	10,271	7,994	986	-

FY18 Proposed			
Total Budget Amount	FY14-18	FY19-23	Beyond 23
-	-	-	-
-	-	-	-
12,103	1,885	9,250	968
69,416	14,666	73,570	(170,554)
39,040	6,192	6,277	10,767
2,299	-	1,263	-
7,488	-	-	-
-	5,454	49,770	(182,083)
20,589	3,021	16,260	762
131,461	34,245	19,775	-
29,188	11,314	5,766	-
1,150	383	767	-
9,814	-	-	-
24,528	76	-	-
1,479	-	-	-
15,886	5,474	288	-
2,151	-	1,780	-
23,271	1,191	4,883	-
9,980	5,568	4,340	-
2,822	1,585	702	-
923	893	30	-
10,271	7,762	1,218	-

Change from Final FY17			
Total Budget Amount	FY14-18	FY19-23	Beyond 23
-	-	-	-
-	-	-	-
1,497	931	183	383
(1,235)	3,327	84,891	(89,454)
(175)	(266)	9	81
-	(533)	533	-
-	-	-	-
-	3,657	83,914	(87,571)
(1,060)	469	435	(1,964)
(2,658)	(4,765)	2,108	-
251	(319)	569	-
25	(392)	417	-
-	-	-	-
-	-	-	-
(451)	(738)	288	-
-	-	-	-
(2,287)	(1,471)	(816)	-
(196)	(1,313)	1,118	-
-	(300)	300	-
-	-	-	-
-	(232)	232	-

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: December 14, 2016
SUBJECT: Janitorial Services at the Chelsea Facility
S.J. Services, Inc.
Bid WRA- 4302Q



COMMITTEE: Administration, Finance & Audit

 INFORMATION

 X VOTE



Michele S. Gillen,

Director of Administration

Mary Flynn, Manager, Facilities Management
Gino Rizzo, Materials Coordination Manager
Carolyn Francisco Murphy, Director of Procurement
Preparer/Title



Michael J. Hornbrook

Chief Operating Officer

RECOMMENDATION:

To approve the award of Contract WRA-4302Q, Janitorial Services at the Chelsea Facility, to S.J. Services, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in an amount not to exceed \$381,324, for a contract term of three years.

DISCUSSION:

The Chelsea Facility, which consists of the main Administration Building and a Maintenance Building (shown in the picture below), is in operation 24 hours per day, 365 days per year.



In total, both buildings house approximately 545 employees who work in Engineering and Construction, MIS, TRAC, the Water Quality Lab, the Water and Wastewater Operations Control Centers, and Maintenance, Fleet Services, Warehousing, Technical Inspection, Metering and Facility Maintenance.

For safe, clean, and efficient management of these facilities, MWRA requires a contract for janitorial services. These services comprise routine daily cleaning of both buildings, including office space, laboratory areas, computer rooms, kitchen areas, bathrooms and locker rooms, stairways, etc.

The contract includes all necessary labor, equipment, materials and supplies, with the exception of paper products, waste receptacle liners and all liquid soap, which MWRA procures separately. The contractor is required to implement and manage a comprehensive janitorial program intended to protect and maintain the facilities and provide a healthy, clean environment for MWRA staff and visitors.

As has been the past practice, the contractor will be required to use "Green Seal Certified" products to minimize the use of hazardous cleaning products and, in accordance with the Commonwealth's "sustainability program," will work with MWRA staff to maintain the paper and cardboard recycling program.

It should be noted that the award of a contract for janitorial services at the Deer Island Treatment Plant is the subject of a separate staff summary being presented at this meeting.

Procurement Process

Purchasing staff solicited bids from four firms listed as approved contractors on the Commonwealth of Massachusetts' janitorial contract (Massachusetts State Contract #FAC81) to perform janitorial services at the Chelsea Facility for a contract term of three years. In addition to being listed on the State Contract, two of the four firms solicited have bid on previous janitorial services contracts for the Chelsea Facility and, as such, are familiar with these buildings.

On November 15, 2016, pricing submittals were received from the four bidders with the following results:

VENDOR	BID PRICE
S.J. Services, Inc.	\$381,324.00
AMPM Facility Services	\$435,864.00
Star Building Services, Inc	\$467,892.00
American Cleaning Company	\$527,550.18

The contract requires payment of prevailing wage rates established by the Division of Occupational Safety for the metropolitan Boston area. Bidders were required to submit annual prices for all three years with award based on the lowest total bid price for the entire three-year contract term.

S.J. Services, Inc. submitted the lowest of the four responsive bids received. S.J. Services holds the current janitorial services contract at the Chelsea Facility, which will expire on January 22, 2017, and the MWRA's Southborough Facility. S.J. Services' bid price on this contract reflects a 3.2% increase over the base price of its current Chelsea Facilities contract. Under the existing three-year contract, MWRA is paying \$402,500 for janitorial services, which includes an allowance of \$53,500 for carpet steam cleaning services. Under the new contract, carpet cleaning has been removed from the bid specifications. Staff will solicit separate bids for carpet steam cleaning services from vendors with this expertise at a later time.

MWRA staff met with the president and two managers of S.J. Services to discuss the bid proposal in detail, including proposed labor hours. S.J. Services agreed to meet the specification requirements for the contract. S.J. Services is currently under contract with the MBTA and Bunker Hill Community College for janitorial services. References from MBTA and Bunker Hill were checked and found to be favorable. In addition, MWRA staff are also satisfied with S.J. Services' work performance under the current contract. Staff have concluded that the bid price is reasonable, complete, and includes the payment of prevailing wage rates, as required.

Therefore, staff recommend the award of this contract to S.J. Services, Inc. as the lowest responsive bidder.


BUDGET/FISCAL IMPACT:

The Operations Division's FY17 Current Expense Budget contains sufficient funding for the first year of this contract. Appropriate funding will be included in subsequent Proposed CEB requests for the remaining term of the contract.

MBE/WBE PARTICIPATION:

S.J. Services, Inc. is not a certified Minority- or Women-owned business.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: December 14, 2016
SUBJECT: Assignment and Assumption of Contract EXE-033 Security Guard Services for Various MWRA Facilities from AlliedBarton Security Services, Inc. to Universal Protection Service, LLC d/b/a Allied Universal Security Services; and Contract EXE-033, Amendment 1

COMMITTEE: Administration, Finance & Audit

 Information

 X Vote


Michele S. Gillen

Director of Administration


Michael J. Hornbrook

Chief Operating Officer

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

On August 1, 2016, the parent entities of AlliedBarton Security Services, Inc. and Universal Protection Service, LLC d/b/a "Allied Universal Security Services" were parties to a merger/acquisition transaction effective August 1, 2016. This Staff Summary requests approval of the proposed assignment of this contract, and further requests an amendment to the contract to extend its current three year term by one additional year, increasing the contract price by an amount not to exceed \$1,727,852.95. The extension is consistent with the Board's December 13, 2013 original award approval which included an option to renew for two additional one year periods, subject to further Board approval. This is the first one-year extension requested.

RECOMMENDATION:

To authorize the Executive Director on behalf of the Authority to approve the assignment of Contract EXE-033 entitled "Security Guard Services for Various MWRA Facilities" from AlliedBarton Security Services, Inc. to Universal Protection Service, LLC d/b/a Allied Universal Security Services, and to authorize the Executive Director, on behalf of the Authority to execute an Assignment and Assumption Agreement to effectuate such assignment; and further, to authorize the Executive Director, on behalf of the Authority, to execute Amendment 1 to Contract EXE-033, extending the contract term by 365 calendar days from February 6, 2017 to February 5, 2018 and increasing the contract price by an amount not to exceed \$1,727,852.95, from \$5,664,094.25 to an amount not to exceed of \$7,391,947.20.

DISCUSSION:

Since February 5, 2014, AlliedBarton has provided around-the-clock security, including video and alarm monitoring, gate access and mobile patrols to MWRA major facilities: the

Charlestown Headquarters, Deer Island Treatment Plant, Chelsea Facility, and Carroll Water Treatment Plant and other remote locations. The Board of Directors approved the award of Contract EXE-033 for an amount not to exceed \$5,664,094.25 and a three year term, with the option of two additional one year extensions, subject to further Board approval.

Assignment

The parent entities of AlliedBarton and Universal were parties to a merger/acquisition transaction which became effective on August 1, 2016. As a result of the merger/acquisition AlliedBarton desires to assign to Universal all its rights, title, benefits and interests in and to certain assets, including Contract EXE033; and Universal desires to assume all of AlliedBarton's duties, liabilities and obligations attributable to such assets, including Contract EXE033. Staff reviewed financial documents furnished by Universal and have determined that Universal appears financially sound, with sufficient assets to meet its obligations. Therefore, staff recommend approval of the assignment.

Amendment

Security considerations support this recommendation to extend the current contract by an additional 12 months, as contemplated in the original procurement. The current security force is performing at a high level with a low turnover rate. Moreover, the Contractor's familiarity with the MWRA's facilities and operations as well as the complex technology that MWRA employs will most effectively ensure continuity of security at this time.

In this proposed amendment, the Contractor's billing rate for guards has been increased by 2.75%. The new rate includes salary rate increases required under the SEIU's Collective Bargaining Agreement to which the Contractor is subject, as well as additional costs to cover sick days now required by Massachusetts law and increases in health insurance premiums. Staff determined that these increases are reasonable.

The cost of the fourth year of security services is \$2,027,852.95. This sum is offset by \$300,000 which is the approximate sum that staff anticipate will be unspent under the existing contract, resulting in a total amendment of \$1,727,852.95.

The Contract summary is as follows:

	<u>Amount</u>	<u>Time</u>	<u>Dated*</u>
Original Contract	\$5,664,094.25	36 Months	February 5, 2014
Amendment 1	<u>\$1,727,852.95</u>	12 Months	Pending
Total	\$7,391,947.20		

For the reasons set forth above, staff recommend the Board's approval of this amendment.

BUDGET/FISCAL IMPACTS:

The current contract with AlliedBarton will have a surplus of an estimated \$300,000.00, due to unexpended overtime, allowances and close contract management. Amendment 1 will add a not to exceed amount of \$1,727,852.95 to Contract EXE-033. The \$2,027,852.95 cost for an additional year of security guard services is offset by the anticipated remaining \$300,000 balance of the contract. No increases in regular staffing are included and an allowance has been added for additional security guard services at Charlestown Navy Yard, if needed. The FY17 budget includes \$1,840,000 for security related expenses, and adequate funds will be included in the FY18 budget to fund this contract.

MBE/WBE PARTICIPATION:

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



MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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WASTEWATER POLICY & OVERSIGHT COMMITTEE

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

to be held on

Wednesday, December 14, 2016

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

Time: Immediately following AF&A Committee

AGENDA

A. Approvals

1. Memorandum of Understanding and Financial Assistance Agreement with the City of Cambridge for the Implementation of CSO Control Projects, Amendment 13 and Progress of Cambridge Implemented CSO Projects and Financial Assistance through March 2017
2. Financial Assistance Agreement with BWSC for Implementation of CSO Projects, Amendment 16

B. Contract Awards

1. Management, Operation and Maintenance of the Union Park Pump Station/CSO Facility and the Unmanned Stations, Woodard & Curran, Inc., Contract S559
2. Sewer Sections 4, 5, 6 and 186 Study: Hazen and Sawyer, Contract 7423
3. Janitorial Services at the Deer Island Treatment Plant: Star Building Services, Inc., Contract WRA-4303Q
4. Deer Island Treatment Plant Motor Control Center and Switchgear Replacement Design, Engineering Services During Construction and Resident Engineering/Inspection Services: AECOM, Contract 7419
5. Deer Island Treatment Plant Personnel Dock Rehabilitation: Coastal Marine Construction, Contract S559

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the
Wastewater Policy and Oversight Committee

November 16, 2016

A meeting of the Wastewater Policy and Oversight Committee was held on November 16, 2016 at the Authority headquarters in Charlestown. Vice-Chairman Walsh presided. Present from the Board were Ms. Wolowicz and Messrs. Blackmon, Carroll, Cotter, Pappastergion, Peña, and Vitale. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Betsy Reilly, Ken Keay, Dave Duest, Ria Convery, and Bonnie Hale. The meeting was called to order at 11:00 a.m.

Contract Awards

*Harbor and Outfall Monitoring 2017-2020: Water Column Monitoring, Battelle Memorial Institute, Contract OP-326A; and Benthic, Fish and Shellfish Monitoring, Normandeau Associates, Inc., Contract OP-326B

Staff described the harbor and outfall monitoring program and there was general discussion. The Committee recommended approval of the two contract awards (ref. agenda item A.1).

*Cooperative Research Project with Center for Coastal Studies in Provincetown to Conduct Water Quality Monitoring in Cape Cod Bay: Contract S556

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


*Supply and Delivery of Ferrous Chloride to the Deer Island Treatment Plant: Kemira Water Solutions, Inc., Bid WRA-4291

The Committee recommended approval of the contract award (ref. agenda item A.3).

The meeting adjourned at 11:15 a.m.

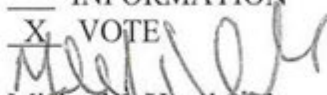
* Approved as recommended at November 16, 2016 Board of Directors meeting.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: December 14, 2016
SUBJECT: Memorandum of Understanding and Financial Assistance Agreement with the City of Cambridge for Implementation of CSO Control Projects, Amendment 13 Progress of Cambridge Implemented CSO Projects and Financial Assistance through March 2017

COMMITTEE: Wastewater Policy & Oversight

Anandan Navanandan, P.E., Chief Engineer
David A. Kubiak, P.E., Sr. Program Manager
Preparer/Title

INFORMATION
 VOTE

Michael J. Hornbrook
Chief Operating Officer

The City of Cambridge completed the CSO control work of the CAM004 sewer separation project, the last of six projects in MWRA's long-term plan to control CSO discharges to the Alewife Brook, in December 2015, in compliance with Schedule Seven. Since then, Cambridge has been restoring surfaces, including the many roads and sidewalks disturbed by the construction, and installing green infrastructure improvements (e.g. permeable pavement, bio-swailes and bio-basins) to control the quantity and quality of stormwater formerly collected by the sewer system and now draining to the constructed Alewife wetland.

Proposed Amendment 13 funds the costs of change orders, additional Engineering Services During Construction and new contingency amounts for the continuing surface restoration work of the CAM004 Sewer Separation project, performed in Cambridge contracts 8B, 9 and Concord Lane, less the contingency amounts in Amendment 12 and less the eligible cost reductions for other Cambridge contracts. Amendment 13 also includes a 6-month time extension to the term of the MOU/FAA due to the cumulative effect of change orders and the necessary suspension of much of the surface restoration work while Cambridge replaced its Huron Avenue water main earlier this year.

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to execute Amendment 13 to the *Memorandum of Understanding and Financial Assistance Agreement with the City of Cambridge for the Implementation of CSO Control Projects*, increasing the award amount by \$1,509,899 from \$98,668,856 to \$100,178,755 and extending the term of the agreement by 6-months from December 31, 2017 to June 30, 2018.

DISCUSSION:

Staff recommend increasing the award amount of the Memorandum of Understanding and Financial Assistance Agreement with the City of Cambridge (the "MOU" and "FAA") by \$1,509,899, from \$98,668,856 to \$100,178,755, to cover higher, eligible construction related costs of the CAM004 Sewer Separation project (Cambridge contracts 8A, 8B and 9), offset by

eligible cost reductions for other Cambridge contracts. Staff also plan to transfer \$2,931,653 into the Cambridge CSO account to cover estimated eligible spending in the period October 2016 through March 2017, bringing the total amount of MWRA funds transferred to the Cambridge account to \$94,294,686.

Proposed Amendment 13

Proposed Amendment 13 funds the costs of additional change orders, additional Engineering Services During Construction (ESDC) and new contingency amounts for the CAM004 Sewer Separation project (Cambridge contracts 8A, 8B, and 9) and additional ESDC services with the Concord Lane contract, less the authorized contingency amounts that were included in Amendment 12. Cambridge has continued with necessary surface restoration work following the completion of all direct CSO related work in December 2015 for direct CSO control benefits. A proposed 6-month time extension to the MOU and FAA is due to the cumulative effect of the additional change orders, and also to suspension of much of the restoration work while Cambridge was replacing its Huron Avenue water main, which it determined needed to be replaced prior to performing the roadway restoration work over it. Construction costs, including ESDC services, associated with replacing the water main are ineligible for MWRA funding, and staff have confirmed that MWRA is incurring no additional cost due to that delay.

Table 1, on the following page, presents a summary of the proposed award amount changes in Amendment 13, by project and contract. The proposed amendment includes the following eligible cost changes.

- Contract 8A (Huron East): \$31,874 increase for change orders and contingency for potential change orders, offset by \$39,197 in reduced costs for design services and police details, for a net cost reduction of \$7,323;
- Contract 8B (Huron West): \$662,828 increase for change orders, including overruns of contract quantities of asphalt for trench repair and full width overlay, gravel sub-base, survey baseline and layout, soil handling and disposal, and related contract time extensions, and contingency for potential change orders; \$50,780 increase for additional police details; partially offset by a \$147,652 reduced cost for design services, for a net increase of \$565,956;
- Contract 9 (Concord Ave.): \$948,867 increase for change orders, including differing site conditions, unforeseen utility conflicts, additional quantities of test pits, CCTV inspections of sewer and drain pipe, sewer and storm drain lateral installations, and CIPP lining of sewer pipes, and related contract time extensions, and \$127,997 increase for additional police details;
- Concord Lane: (\$449,763) reduced cost for construction and police details;
- \$375,898 increase for additional level of effort for ESDC associated with time extensions for contracts 8A, 8B, 9, and Concord Lane, including extensions of 13-months for Contract 8A, 6-months each for Contracts 8B and 9, and 12-months for Concord Lane; and
- \$125,846 increase for Cambridge force account associated with the extended construction schedules referenced above.

Table 1: Breakdown of Current Authorization (Amendment 12) and Proposed Amendment 13

Project	Cambridge Contract No.	Status	Current Authorization	Proposed Amendment 13	Amended Authorization
Charles River Floatables Controls	5	Complete	\$ 57,560		\$ 57,560
CAM400 Manhole Separation					
Interceptor Connections & Floatables Control at CAM002 & CAM401B & Floatables Control at CAM001	4/13	Complete	6,846,253	(190,164)	6,656,089
CAM004 Sewer Separation					
Huron East	8A	Complete			
Design			1,780,010	(38,407)	1,741,603
Construction			11,261,508	31,874	11,293,382
Police Details			404,012	(790)	403,222
Huron West	8B	Sub. Complete			
Design			1,689,069	(147,652)	1,541,417
Construction			20,670,310	662,828	21,333,138
Police Details			1,305,266	50,780	1,356,046
Concord Ave.	9	Sub. Complete			
Design (includes Concord Lane)			1,618,959	-	1,618,959
Construction			14,746,935	948,867	15,695,802
Cambridge Share of Eligible Costs			(8,000,000)	-	(8,000,000)
Police Details			602,182	127,997	730,179
Concord Lane					
Construction	N/A	Sub. Complete	1,774,660	(401,373)	1,373,287
Police Details			87,822	(48,390)	39,432
Contract 8A, 8B & 9 ESDC			12,354,269	237,028	12,591,297
Concord Lane ESDC			352,796	138,870	491,666
Post Construction Monitoring			153,417	-	153,417
CAM004 Stormwater Outfall & Basin	12	Complete	10,446,553	12,585	10,459,138
Cambridge Force Account		Ongoing	1,236,087	125,846	1,361,933
Pre Amd & Work ***		Complete	19,281,188	-	19,281,188
Total			\$ 98,668,856	\$ 1,509,899	\$ 100,178,755

*** 1996 - 2007: Early design and construction, CSO plan reevaluation, MEPA review and wetland appeals.

Proposed Amendment 13 also includes a 6-month extension to the term of the MOU and FAA, from December 31, 2017 to June 30, 2018, directly related to the Cambridge construction contract extensions and to provide time for preparation of record drawings, final contract payments by Cambridge and contract close-outs.

Pursuant to the terms of the MOU and FAA, Cambridge is funding all ineligible costs, including new or upgraded infrastructure and roadway improvements unrelated to CSO control, which have also significantly increased since Amendment 12. Cambridge has also funded a total of over \$20 million of otherwise eligible cost for the completed Alewife Wetland and the CAM004 Sewer Separation project, pursuant to agreements reached in past negotiations.

MWRA Cost Impact from Water Main Replacement

During construction of the CAM004 sewer separation project, Cambridge determined it was necessary to replace its Huron Avenue water main, which was completed in July 2016. All construction and associated ESDC costs for replacement of the water main are ineligible for MWRA funding. In addition, water provided by MWRA to Cambridge during construction of the water main was paid by the City of Cambridge as billed by MWRA. The replacement of the water main did delay eligible surface restoration work on Huron Avenue and surrounding streets, but did not affect the cost or cost increases of the eligible work.

Engineering Services During Construction

ESDC level of effort is related to the amount of "contract days," which have increased due to construction contract time extensions driven by change orders. The additional level of effort for ESDC proposed in Amendment 13 is generally consistent with the level of ESDC provided in previous amendments. For the CAM004 sewer separation contracts, the percentage of eligible ESDC to eligible construction is approximately 26%.

The eligibility of ESDC costs is proportional to the eligibility of the construction contracts. ESDC costs associated with the Huron Avenue water main replacement, like the replacement costs themselves, are ineligible. However, to acknowledge the impact of the ineligible Huron Avenue water main replacement work on ESDC services, which are common to the water main and CSO related work, Cambridge has agreed to fund all engineering services for the six-month period from July to December 2017, even though eligible construction contract work will still be performed during that period, specifically the reconstruction of Huron Avenue. This commitment results in Cambridge funding approximately \$750,000 of engineering costs that otherwise would be eligible, and this is typical of ESDC costs in past 6-month periods.

Impact of Past and Projected Change Orders

Overall and to date, Contracts 8A, 8B and 9 have been modified by executed change orders totaling \$17.0 million, of which \$5.8 million is eligible for MWRA funding. Cambridge projects that an additional \$4.8 million in change orders or potential future change orders, of which \$2.4 million is eligible for MWRA funding, will or may be executed by project completion, for a total potential change order amount of \$21.8 million, of which \$8.2 million is deemed eligible.

In addition, and as shown in Figure 1 on the following page, change orders have extended the contract completion dates since Amendment 12. Cambridge extended Contract 8A by 13-months to December 2016 and the Concord Lane contract by 12-months to December 2016. Cambridge plans to extend Contract 8B by 6-months to December 2017 and Contract 9 by 6-months to June 2017.

Progress, Schedule and Remaining Spending

Pursuant to the terms of the MOU and FAA, Cambridge is responsible for implementing five projects in MWRA's Long-Term CSO Control Plan, including four of the six projects that comprise the CSO control plan for Alewife Brook (MWRA implemented the other two), and a project Cambridge completed in 2007 that closed or provided floatables control at Cambridge CSO outfalls along the Charles River. All projects have met the Court Order Milestones. Non-CSO milestone related work continues on Contracts 8B and 9.

Figure 1: Cambridge Contract Schedules Amendment 12 vs. Amendment 13

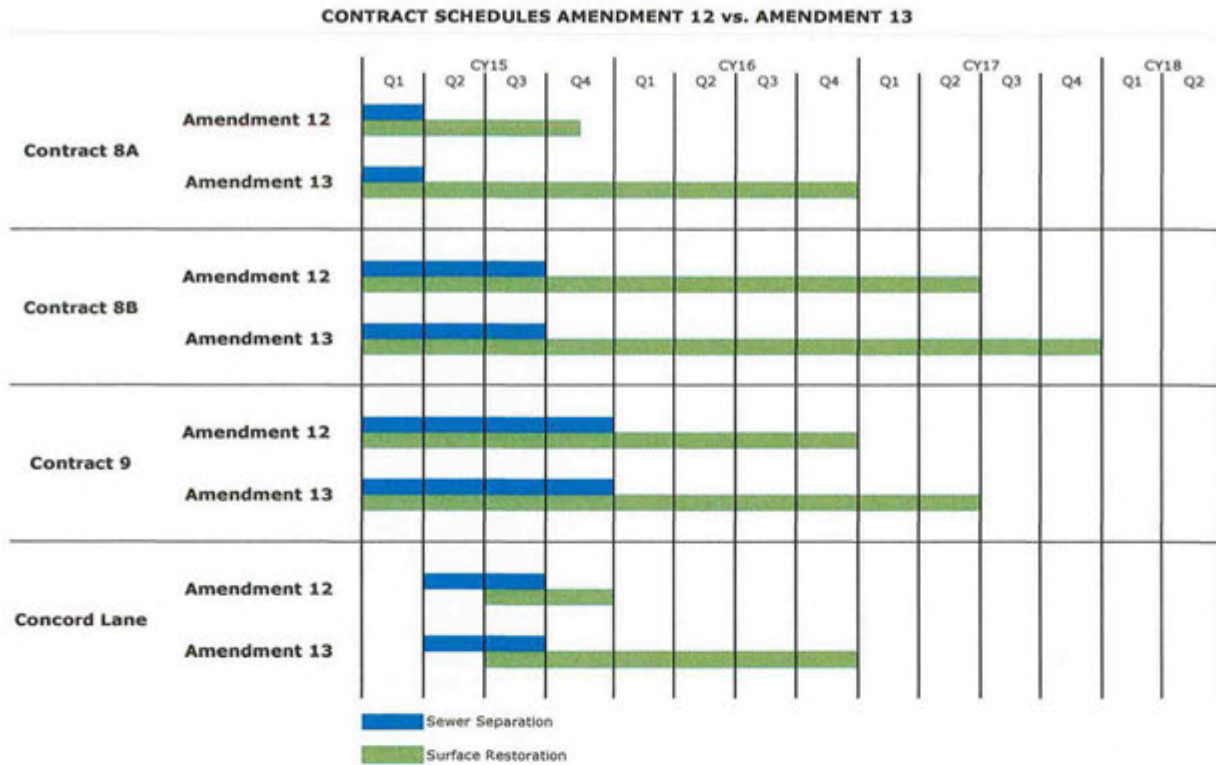


Table 2 includes a description and completion DATE for the court-ordered work of each of the Alewife CSO projects implemented by Cambridge or MWRA.

Table 2: Alewife Brook CSO Control Plan Projects and Status

Project	Cambridge Contract No.	Benefit	Status of Court-Ordered Work
CAM004 Stormwater Outfall and Wetland Basin	12	Convey stormwater flows to wetland system for attenuation and treatment.	Completed Apr 2013
CAM004 Sewer Separation	8A, 8B, 9 & Concord Lane	Remove large quantities of stormwater from the sewer system; Close Outfall CAM004.	Completed Dec 2015
CAM400 Manhole Separation	4/13	Remove stormwater from the sewer system; eliminate CSO at Outfall CAM400.	Completed Mar 2011
Interceptor Connection Relief and Floatables Control at CAM002 and CAM401B and Floatables Control at CAM001		Upgrade connections between Cambridge and MWRA systems to provide relief; add floatables control.	Completed Oct 2010
MWR003 Control Gate and Rindge Ave. Siphon Relief	MWRA Contracts	Optimize hydraulic conveyance; minimize overflows while controlling system flooding in large storms.	Completed Oct 2015
Interceptor Connection Relief and Floatables Control at Outfall SOM01A		Upgrade connection and provide floatables control	Completed Dec 2013

Remaining work to be performed under Contract 8B includes paving (including porous pavement), sidewalks, curbing, CIPP lining of certain sewers and plantings. This work is scheduled to be complete by December 2017. Remaining work to be performed under Contract 9 includes paving, curbing, bio-basins and plantings. This work is scheduled to be complete by June 2017.

Table 3 shows the projected spending of eligible funds, including the remaining funds in the current Amendment 12 authorization together with the proposed Amendment 13 authorization. Through September 2016, Cambridge spent \$90.0 million of the \$100.2 million total award amount with Amendment 13.

Table 3: Eligible Expenditures

		Projected Quarterly Eligible Amount	Cumulative Eligible Amount
Through September 2016		-	\$90,020,244
CY16	Q4	\$2,629,939	\$92,650,183
CY17	Q1	\$1,777,656	\$94,427,839
	Q2	\$2,970,678	\$97,398,517
	Q3	\$1,462,990	\$98,861,507
	Q4	\$1,014,422	\$99,875,929
CY18	Q1	\$302,826	\$100,178,755

MWRA Financial Assistance and Next Funds Transfer

Cambridge pays the eligible costs of the project from a general city account and periodically reimburses its general account from the CSO account into which MWRA transfers funds. Since execution of the MOU and FAA in 1996, MWRA has transferred a total of \$91,363,033 to Cambridge’s CSO account to cover eligible design and construction costs through September 2016. In addition, the FAA allows Cambridge to use accumulated interest in the account to fund eligible costs.

The estimated eligible cost incurred by Cambridge from MOU/FAA inception through September 2016 is \$90,020,244 and the estimated available balance in the Cambridge CSO account as of the end of September 2016 is \$1,475,942, which includes \$133,153 interest earned through September 2016.

Staff closely monitor Cambridge’s spending and regularly coordinate the review with Cambridge staff to ensure that spending (and the work) remain on schedule.

Cambridge recently submitted a projected work progress report and estimate of eligible contract and force account spending for the period October 2016 through March 2017. Over this period, Cambridge will continue with construction and construction supervision services for contracts 8A, 8B, 9 and Concord Lane. Staff plan to transfer \$2,931,653 into the Cambridge CSO account to cover eligible costs through March 2017.

BUDGET/FISCAL IMPACT:

The FY17 CIP includes \$98,239,026 for design and construction of the Cambridge CSO projects. Amendment 13 will increase the total award amount of the MOU and FAA with the City of Cambridge to \$100,178,755. If approved, staff will update the budget amount in the Proposed FY18 CIP to reflect the \$1,939,729 increase.

MBE/WBE PARTICIPATION:

The MOU requires the Cambridge contracts to comply with DEP MBE and WBE participation requirements and City of Cambridge policy.

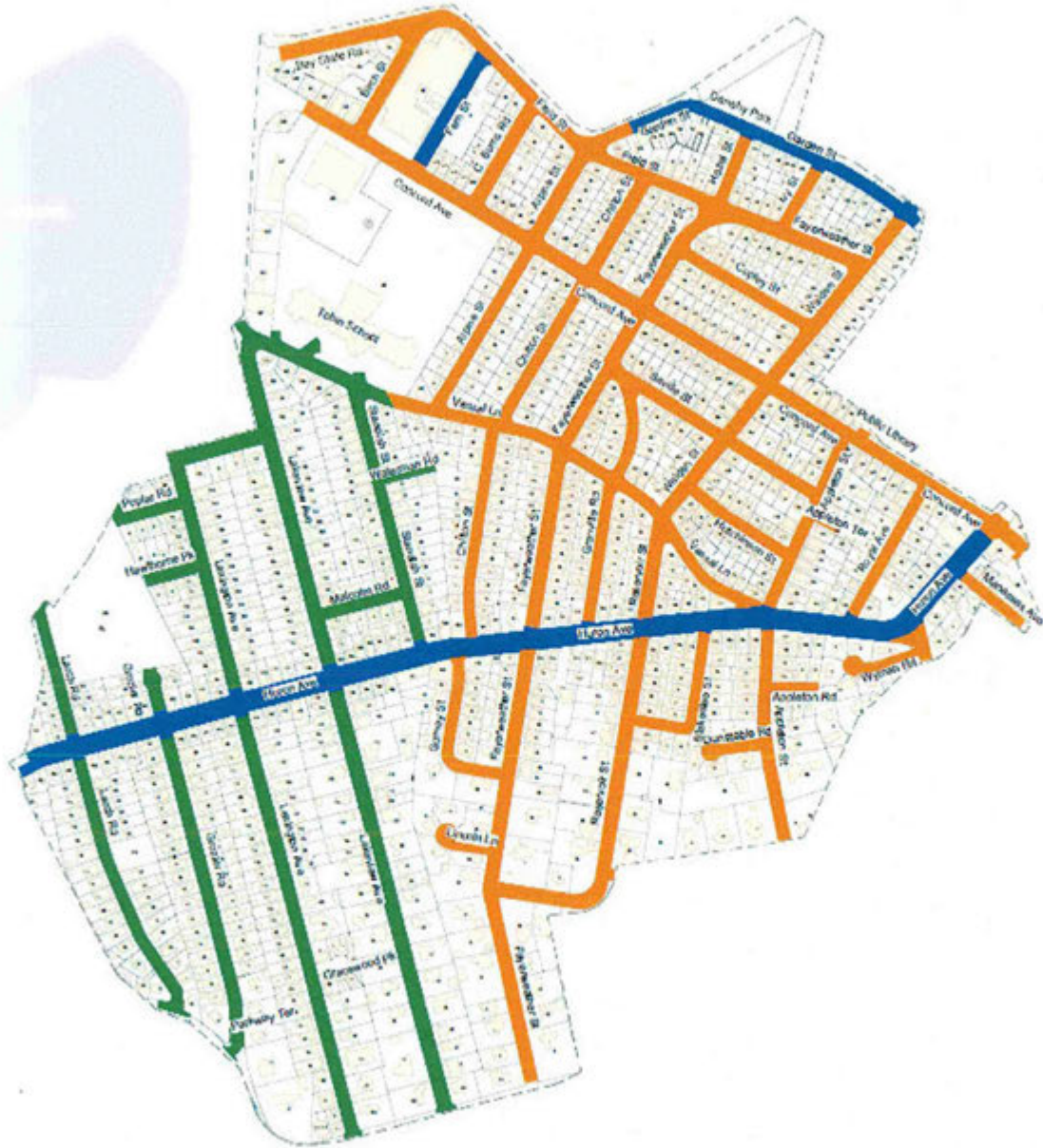
ATTACHMENTS:

Attachment 1 – Map of completed and remaining CAM004 Sewer Separation surface restoration work as of September 30, 2016.

Attachment 1



CAM004 SURFACE RESTORATION PROGRESS AS OF SEPTEMBER 30, 2016




LEGEND

- █ ALL WORK COMPLETE
- █ MINIMAL SURFACE WORK REMAINING (TOP COURSE FINISH, PLANTING, GREEN INFRASTRUCTURE, PAVEMENT MARKINGS, AND SIGNAGE)
- █ SIGNIFICANT SURFACE WORK REMAINING
- - - - CAM 004 PROJECT AREA



CAM 004 SEWER SEPARATION, STORMWATER
MANAGEMENT AND SURFACE IMPROVEMENTS PROJECT
LAST UPDATED: 11/04/15

STAFF SUMMARY

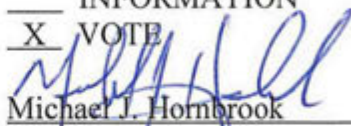
TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: December 14, 2016
SUBJECT: Financial Assistance Agreement with BWSC for Implementation of CSO Control Projects, Amendment 16

COMMITTEE: Wastewater Policy & Oversight

Anandan Navanandan, P.E., Chief Engineer
David A. Kubiak, P.E., Sr. Program Manager
Preparer/Title

 INFORMATION

 X VOTE


Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to execute Amendment 16 to the Financial Assistance Agreement with Boston Water and Sewer Commission for Implementation of CSO Control Projects, extending the term of the agreement by six months from December 31, 2016, to June 30, 2017, with no increase to the award amount.

DISCUSSION:

Under the Memorandum of Understanding (MOU) and Financial Assistance Agreement (FAA) between MWRA and Boston Water and Sewer Commission (BWSC) for the implementation of combined sewer overflow (CSO) control projects, BWSC was responsible for implementing nine of the 35 projects in MWRA's Long-Term Combined Sewer Overflow (CSO) Control Plan. BWSC also improved a portion of its Lower Dorchester Brook Sewer to reduce certain CSO discharges to the Fort Point Channel in accordance with the terms and conditions of Amendment 9 to the MOU and FAA approved by the Board on June 4, 2008. BWSC attained substantial completion and beneficial use of all of these projects by December 2015 in compliance with the Federal District Court Order.

During the past year, BWSC finished remaining contract work, including punch list items and preparation of as-built drawings for the Reserved Channel Sewer Separation project, and recently closed out the last of its engineering and construction contracts. Remaining eligible work includes BWSC's continuing removal of stormwater inflow from sewer systems tributary to its Dorchester Interceptor following the completion of the South Dorchester Bay Sewer Separation project and related closing of CSO outfalls to South Dorchester Bay in 2007. In addition, BWSC staff will continue to perform force account work in support of MWRA's ongoing final eligibility reviews and final eligible cost certifications for the 43 construction contracts BWSC managed over the past 20 years to implement the CSO projects.

The MOU references its coincidence with the term of the FAA, which is currently scheduled to expire this month, on December 31, 2016. Staff have been performing BWSC construction contract final eligibility reviews and certifications and coordinating with BWSC staff as needed for more than a year. Staff expect that the reviews and certifications, as well as coordination with BWSC staff, will continue through June 2017. To allow for continuing coordination and associated eligible BWSC force account reimbursement, staff recommend extending the term of the FAA – and the term of the MOU by reference - by six months from December 31, 2016, to June 30, 2017, with no increase to the award amount of the agreements.

Dorchester Interceptor Inflow Removal

The award amount of the MOU and FAA includes \$5,368,973 for the removal of additional stormwater inflow or other actions that can provide further hydraulic relief to BWSC's Dorchester Interceptor and control flooding in large storms. The need for this work following the permanent closing of the CSO outfalls that had provided system relief in large storms was recommended by BWSC and authorized by MWRA during preliminary design of the South Dorchester Bay project nearly two decades ago. The MOU and FAA, and MWRA's Capital Improvement Program budgets, have carried funds for this additional work ever since.

To date, BWSC has spent, and MWRA has funded, \$1,605,919 in eligible cost for the Dorchester Interceptor relief work, including field investigations of remaining inflow sources, hydraulic evaluations of system performance for various relief alternatives and a construction contract that removed some of the inflow sources. BWSC plans to use the remaining \$3,763,054 of the award amount for this effort to design and implement additional inflow removal. BWSC is currently performing flow metering and will soon commence a Sewer System Evaluation Survey, neither of which is eligible for funding under the MOU and FAA. BWSC will use the results of these efforts to further identify priority inflow sources for removal, in Dorchester. Because these ongoing and planned activities, and the follow-up eligible design and construction work, will take several years to complete, staff plan to remove the remaining Dorchester Interceptor funds (\$3,763,054) from the MOU and FAA and instead fund the eligible work by a separate agreement with BWSC. Staff expect to bring that separate agreement to the Board for approval next year, prior to the proposed expiration of the MOU and FAA in June.

Projected Eligible Expenses and Total Eligible Cost

The MOU provides a framework within which BWSC and MWRA cooperate in the management of the CSO projects. The FAA is the funding mechanism by which MWRA funds are made available to BWSC to pay eligible design and construction costs. The MOU and FAA were originally executed in 1996, and the total award amount in the agreements through Amendment 15, executed on January 13, 2015, is \$296,305,787. The total award amount is the sum of project specific funding authorizations presented in Table 1 on the following page.

To date, MWRA has transferred \$290,306,641 into the BWSC CSO account to cover eligible design and construction related costs, and total interest on the account (which BWSC also withdraws to pay eligible expenses), is \$1,758,565. Future eligible expenses through June 2017 will be limited to BWSC force account costs and are projected to total less than \$50,000. Including this future cost and recently updated information from BWSC on the final costs of the

now completed design and construction related work, and including the remaining \$3,763,054 for Dorchester Interceptor Inflow Removal, staff estimate that total eligible cost under the MOU and FAA will be \$293,927,004, which is \$2,378,783 less than the MOU and FAA total authorized award amount of \$296,305,787.

Table 1: MOU and FAA Award Authorizations

Project	Award Authorization
South Dorchester Bay BOS088/089 Sewer Separation	\$ 54,653,320.39
South Dorchester Bay BOS090 Sewer Separation	\$ 64,215,528.19
Neponset River BOS093/095 Sewer Separation	\$ 2,549,086.41
Constitution Beach BOS002 Sewer Separation	\$ 3,731,315.01
Stony Brook Sewer Separation	\$ 44,287,383.56
Independent Floatables Control and Outfall/Regulator Closings	\$ 945,935.95
Fort Point Channel Sewer Separation and System Optimization	\$ 9,887,090.04
Regulator RE070/11-2 Relocation and Sewer Separation	\$ 2,030,000.00
Morrissey Boulevard Drain	\$ 32,339,111.09
Reserved Channel Sewer Separation	\$ 72,612,611.13
Bulfinch Triangle Sewer Separation	\$ 9,054,405.23
Total	\$ 296,305,787.00

MWRA Funding Oversight

Among the various regular oversight activities performed by MWRA, staff conduct final eligibility reviews of completed construction contracts leading to BWSC and MWRA certification of the final eligible cost/MWRA funding for each contract. To date, staff have completed the review of BWSC construction contracts with a total eligible construction value of approximately \$101,800,453. From these completed reviews, staff and BWSC have determined a net variance of approximately 0.1% which has been addressed.

MWRA's Internal Audit Department (IAD) routinely reviews BWSC's compliance with the terms and conditions of the FAA. IAD's latest audit, completed in March 2016, reviewed the engineering, construction and force account costs for calendar year 2015. The audit found that 63% of BWSC's recorded force account work and associated costs were eligible for MWRA funding based on an analysis of consultant and contractor eligible and ineligible costs. From this same analysis, IAD also determined that BWSC was due \$3,992.66 related to an indirect cost rate adjustment for CY 2014 Force Account work. In addition, IAD concluded that a net of \$589,381.71 was withdrawal by BWSC to pay certain construction invoices for four Reserved Channel sewer separation contracts and one South Dorchester Bay inflow removal contract related to ineligible work items. BWSC has completed the appropriate record adjustments and made both the \$3,992.66 withdrawal from the CSO account and the \$539,381.71 reimbursement to the CSO account in May 2016.

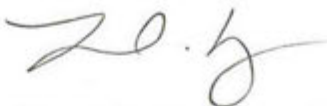
BUDGET/FISCAL IMPACT:

The FY17 CIP Budget includes \$294,178,674 for the BWSC-implemented CSO control projects.

MBE/WBE PARTICIPATION:

For the BWSC-implemented projects funded by MWRA, MBE/WBE participation requirements are included in compliance with DEP SRF requirements and as required by BWSC policy.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: December 14, 2016
SUBJECT: Management, Operation and Maintenance of the Union Park Pump Station/CSO Facility and the Unmanned Stations
Woodard & Curran Inc.
Contract S559

COMMITTEE: Wastewater Policy & Oversight

 INFORMATION

 X VOTE


Michele S. Gillen

Director of Administration


Michael J. Hornbrook

Chief Operating Officer

Charles B. Ryan, Manager, Wastewater Operations
Stephen D. Cullen, Director, Wastewater O&M
John P. Vetere, Deputy Chief Operating Officer
Preparer/Title

RECOMMENDATION:

To approve the award of Contract S559, for Management, Operation and Maintenance of the Union Park Pump Station/CSO Facility and the Unmanned Stations, to the lowest responsible and eligible bidder, Woodard & Curran, Inc., and to authorize the Executive Director, on behalf of the Authority, to jointly execute said contract, along with the Boston Water and Sewer Commission (BWSC), for a contract service fee amount of \$3,919,812 (of which MWRA will pay \$1,058,349.24 (27%) and BWSC will pay \$2,861,462.76 (73%)), plus a funding allowance amount of \$780,000 for corrective maintenance and minor repairs to process equipment (which includes \$180,000 for MWRA and \$600,000 for BWSC), for a total contract amount not to exceed \$4,699,812, and for a contract term of 3 years, from March 1, 2017 through March 2, 2020, with options, subject to future Board approval, to extend the term for up to two additional years.

DISCUSSION:

BWSC and MWRA currently own and operate the Union Park Pumping Station/CSO Facility, which is a wet-weather facility that handles combined sewage in the South End of Boston (see Attachment 1, and exterior facility photograph on the following page). This facility is staffed 24 hours per day, 7 days per week and typically takes CSO flow into its storage tanks approximately 27 times per year and discharges to Fort Point Channel approximately 8 times per year.



Union Park Pump Station/CSO Facility

As part of the Federal Court Order, MWRA expanded the Union Park Pumping Station to include CSO control (screening, chlorination, storage, and dechlorination). In addition to the CSO process equipment, the project included upgrading pumping equipment and other improvements to BWSC's pumping station (paid for by BWSC).

Construction of the facility was substantially complete in late 2006. In 2007, MWRA and BWSC entered into a Memorandum of Agreement (MOA) establishing that the jointly-owned Union Park Pumping Station/CSO would be operated as one facility. In 2007 and 2012 the two agencies worked jointly to procure a contract to manage, operate, and maintain the Union Park Pumping Station/CSO (as well as nine other smaller, unstaffed pump stations owned exclusively by BWSC). The current contract was awarded to Woodard & Curran, Inc. (Woodard & Curran) and will expire on February 28, 2017.

This replacement contract was bid for a three-year term with options to extend for up to two additional years. In addition to providing all necessary operations, the contract requires the operator to perform all necessary preventive and routine maintenance for the facilities. Corrective maintenance and repair of the CSO facility, beyond the scope of this contract, as well as chemical supplies and other services, will be performed under separate existing or future MWRA contracts.

MWRA and BWSC have agreed to continue to split the annual service fee portion of the contract at 73% (BWSC) and 27% (MWRA) based on a review of the existing contract and likely similar assignment of time of the contract base and wet-weather staffing to MWRA and BWSC for the

Union Park facility and the nine other unstaffed BWSC pump stations. Other cost splits (e.g., utilities) will be based on the percentage of Union Park ownership and/or the ability to clearly assign cost responsibility.

Procurement Process

A low-bid procurement process was used, which included minimum experience and qualification requirements for firms and key personnel assigned to the project. The contract was advertised on October 19, 2016 and notice of the solicitation was issued to over 30 firms to encourage competition and participation in this procurement. A site visit was held on October 27, 2016, which representatives of Woodard & Curran, Weston & Sampson and Veolia attended.

One bid was received and opened on November 17, 2016 and contained the following service fee for the full three-year term of the contract:

Woodard & Curran	\$3,919,812.00
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Woodard & Curran’s bid includes an average service fee for all three years that is 5.3 percent less than the average service fee for the final two years of the current contract which was awarded in 2012. Staff attribute this decrease in service fee to competition Woodard & Curran expected from other bidders. However, the other two firms which participated in the site visit did not submit a bid. Woodard & Curran operated these facilities for six years prior to the new jointly-owned facility coming online and has operated the facilities for ten years under the current and predecessor contracts which were competitively procured. Based on several years of experience working with Woodard & Curran, staff are of the opinion that Woodard & Curran possesses the skill and ability necessary to successfully complete the work under this contract and can operate the facilities at the bid price. Qualifications of the firm and key personnel, as required in the Invitation for Bids, have been checked by BWSC and were found to meet the minimum requirements. Over the years that Woodard & Curran have been performing these services both MWRA and BWSC staff have been satisfied with the firm’s performance.

Included in the contract’s not to exceed amount is an annual “funding allowance” of \$200,000 per year for BWSC expenditures, and \$60,000 per year to cover MWRA’s portion of minor equipment repairs and spare parts. Use of the “funding allowance” requires various levels of reporting and task order approvals, depending on nature and cost of the work.

BUDGET/FISCAL IMPACT:

The FY17 Current Expense Budget (CEB) currently includes adequate funds for MWRA’s portion of the operation and maintenance of the Union Park Pumping Station/CSO Facility. The Proposed FY17 through FY21 CEBs will include adequate funds for the remaining term of the contract.

MBE/WBE PARTICIPATION:

There were no MBE or WBE participation requirements established for this contract due to highly specialized work involved and the limited opportunities for subcontracting.

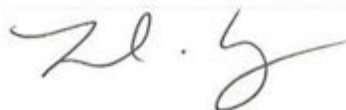
Attachment 1



Aerial Map of Union Park Pump Station/CSO Facility

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: December 14, 2016
SUBJECT: Sewer Sections 4, 5, 6, and 186 Study
Hazen and Sawyer, P.C.
Contract 7423


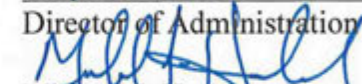


COMMITTEE: Wastewater Policy & Oversight

John P. Vetere, Deputy Chief Operating Officer
A. Navanandan, P.E., Chief Engineer
Kathleen Cullen, P.E., Project Manager
Preparer/Title

 INFORMATION

 X VOTE


Michele S. Gillen
Director of Administration

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to award Contract 7423, Sewer Sections 4, 5, 6, and 186 Study to Hazen and Sawyer, P.C., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the amount of \$1,213,973.97, for a contract term of 15-months from the Notice to Proceed.

BACKGROUND:

Sections 4, 5, 6, and 186 are part of MWRA's North Metropolitan Sewer which carries flow from the Caruso Pump Station in East Boston, in addition to flow from several local connections, to the Winthrop Terminal Facility at the Deer Island Treatment Plant. Section 186 is a 108-inch diameter sewer consisting of a steel wye, concrete pipe, and a concrete wye, built in 1999 and lined with a combination of embedded plastic liner, bolted plastic liner, and plastic liner adhered with an adhesive. Sections 4, 5, and 6 were built in 1891 as an approximately 108-inch diameter brick sewer, varying from circular to horseshoe, to slightly oval; portions of which were rehabilitated in 1992 and the remainder in 1995, sprayed with approximately 4-inches of a silica/shotcrete mix then coated with an epoxy. The combined length of the pipelines is approximately 15,000 linear feet.

A map of the project area is shown in Attachment A.

In April 2011, a large piece of plastic lining was discovered on the inlet screens to the Winthrop Terminal Facility on Deer Island. Subsequent video inspections by MWRA of the North Metropolitan Sewer upstream of the Winthrop Facility located the source of the plastic to a portion of Section 186 that appeared to be delaminating from the pipe. In June 2011, MWRA

secured an emergency contract with JF White to perform a manned inspection of Section 186 starting at the manhole at Section 4 Station 2+62 and ending at Section 003A station 23+25 (note that the Section 186 limits do not begin or end at a manhole). This inspection identified areas of loose and hanging liner, as well as areas where the lining had delaminated from the pipe. In addition, this inspection identified that a portion of Section 4 just upstream of Section 186 had epoxy coating peeling from the walls and the shotcrete coating was soft and crumbling.

On June 21-22, 2011, JF White performed a manned entry into Section 186 and removed approximately 60 linear feet of loose plastic liner from the steel wye. A mechanical seal was installed over the cut edge of liner to prevent flow from getting behind the liner. The exposed steel was left bare.

Subsequently, MWRA performed a manned inspection at ten manhole locations and in-house closed circuit television video review along Sections 4, 5, and 6 and confirmed portions of the North Metropolitan Sewer have deteriorating shotcrete lining.

DISCUSSION:

Contract 7423 is a 15-month contract to assess the condition of Sections 4, 5, 6, and 186, including a manned inspection and physical testing (where appropriate) of the full length of the pipeline and associated manholes, analysis of sewer sediment, corrosivity evaluation, traffic and permitting assessments, and hydraulic capacity evaluation. The Consultant will identify and evaluate various rehabilitation methods. The Consultant will also provide recommendations in a final report to address future rehabilitation needs, including a recommended repair method, limits of work, potential access points, bypass procedures, temporary construction impacts and costs.



Figure 1 - CCTV Photo of Section 4

The FY17 CIP contains a follow-up design and construction contract to address potential recommendations for repair resulting from Contract 7423.

Procurement Process

On September 24, 2016, MWRA issued a one-step Request for Qualifications Statements/Proposals (RFQ/P). Nineteen firms requested the RFQ/P documents; eight of which were potential prime consultants. Procurement staff made extensive outreach efforts to ensure adequate participation, twice sending out the advertisement to firms. Also, at the request of one

potential proposer firm, MWRA extended the due date for proposals by an Addendum to ensure adequate time for proposal development and to encourage competition.

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

On November 15, 2016, MWRA received proposals from two firms: Hazen and Sawyer, P.C. and Stantec Consulting Services Inc.

The proposal costs are presented below:

PROPOSER	PROPOSED CONTRACT COST	LEVEL OF EFFORT
Hazen and Sawyer, P.C.	\$1,213,973.97	4,293 hours
Stantec Consulting Services Inc.	\$1,409,940.33	6,548 hours
<i>Engineer's Estimate</i>	<i>\$1,776,700.00</i>	<i>5,537 hours</i>

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

PROPOSER	TOTAL POINTS	*ORDER OF PREFERENCE/ TOTAL SCORE	FINAL RANKING
Hazen and Sawyer, P.C.	409	7	1
Stantec Consulting Services Inc.	404	8	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.

Hazen and Sawyer, P.C. was ranked first by the Selection Committee. Hazen and Sawyer's proposed staffing and project team has excellent qualifications, experience, and capacity. Based in Boston, Hazen and Sawyer's proposed engineering team, which included the required Structural Engineer, has worked together on numerous relevant projects directly related to sewer system studies and design. Hazen and Sawyer's cost was lower than the Engineer's Estimate, which assumed the manned inspection would be through a higher-cost specialty subcontractor. Hazen and Sawyer plans to use a qualified but lower-cost subcontractor for the inspection. Hazen and Sawyer's hours were lower than the Engineer's Estimate, particularly in the creation of GIS-based planning drawings; however they explained this was due to both an economy of scale and better familiarity with the scope of services, as they are currently working on a very similar project for MWRA, Contract 7511 – Cambridge Branch Sewer Study, with a similar number of GIS-based drawings, and were able to be competitive with the level of effort. The Selection Committee was in agreement that Hazen and Sawyer's proposal, although lower than the Engineer's Estimate, presented an appropriate level of effort for the project. Hazen and Sawyer's

overall past MWRA and non-MWRA similar project performance has been very good. References from Boston Water and Sewer on the Dorchester Brook Sewer Rehabilitation project, and from the City of Baltimore for its Low Level Collection System and Sewershed Plan were both positive. Hazen and Sawyer's recent work for the MWRA includes: Spot Pond Water Storage Facility Design/Build; Nut Island Headworks Odor Control, HVAC and Energy Management Systems Evaluation Services; and Agency-Wide Technical Assistance Consulting Services; all of which received very good evaluations. Committee Members are in agreement that Hazen and Sawyer's technical approach for the proposal is very good and provides broad technical detail, addressing the appropriate issues.

Stantec Consulting Services Inc. was ranked second. Stantec's proposed project team does not include a structural engineer, which was required in the RFQ/P. Stantec's cost was lower than the Engineer's Estimate, which assumed the manned inspection would be through a higher-cost specialty subcontractor. Stantec proposed to use in-house staff for the inspection at a lower cost. Stantec's overall past MWRA and non-MWRA similar project performance was noted as very good. The Selection Committee agreed that Stantec provided an appropriate technical approach. The firm's overall references for past MWRA projects and non-MWRA similar past performance were rated very good. The Committee noted, however, that there have been staffing resource related issues with ongoing Authority projects.

Based on final rankings, the Selection Committee recommends the award of this contract to Hazen and Sawyer, P.C. in an amount not to exceed \$1,213,973.97. In accordance with MWRA's procurement procedures, staff entered into discussions with Hazen and Sawyer to confirm costs, level of effort, and project management. Based on those discussions, staff are of the opinion that Hazen and Sawyer can complete the project for the proposed cost.

BUDGET/FISCAL IMPACT:

The FY17 CIP includes a budget of \$1,500,000 for Contract 7423. The contract award amount is \$1,213,973.97.

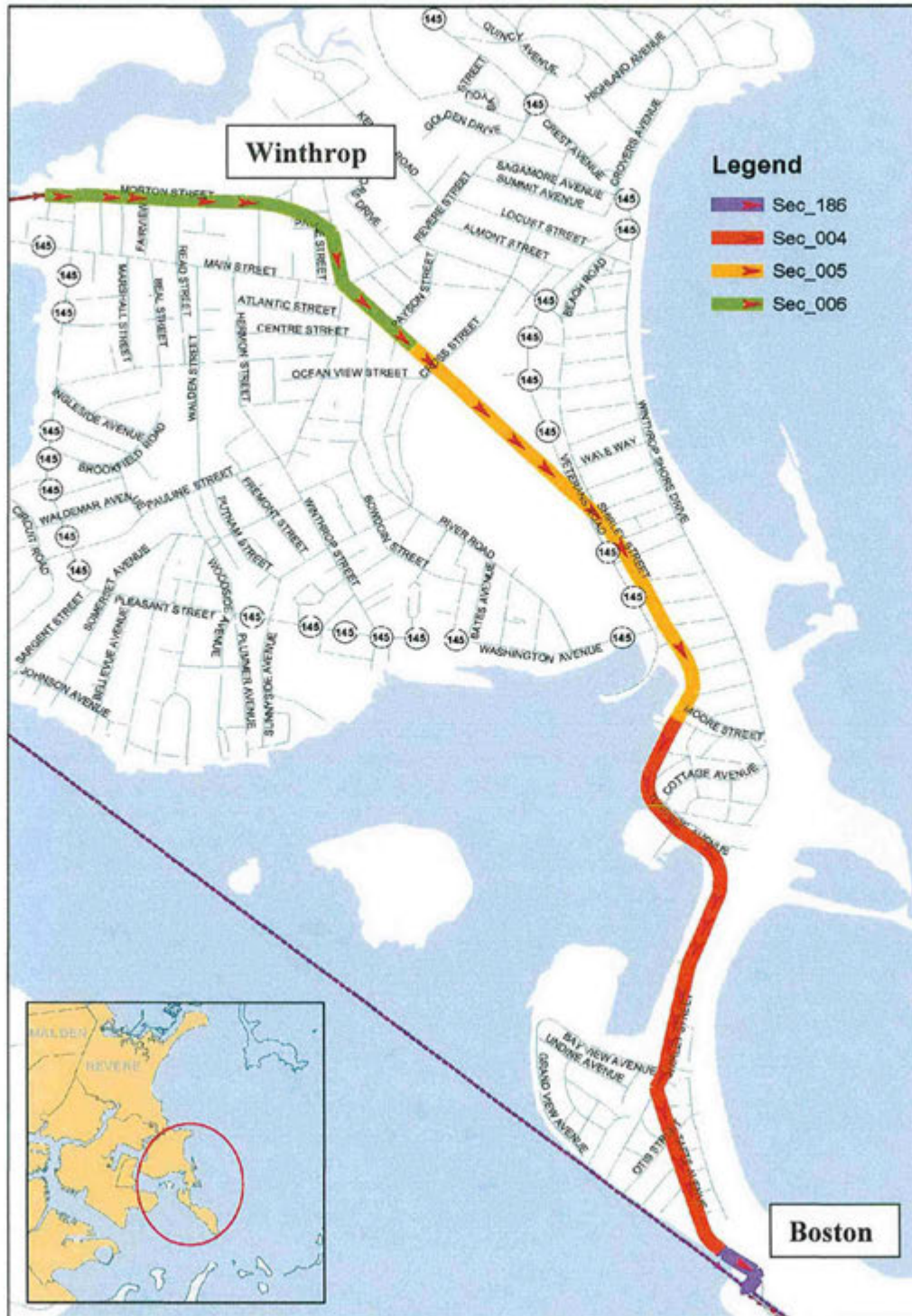
MBE/WBE PARTICIPATION:

The MBE/WBE participation requirements for this contract were established at 7.18% and 5.77%, respectively. Hazen and Sawyer indicated difficulty with meeting these requirements due to the specialty nature of the proposed services, and proposed participation of 3.3% MBE and 4.3% WBE. The Affirmative Action & Compliance Unit reviewed and granted the waiver request.

ATTACHMENT:

Map of project location

Contract 7423 - Sections 4, 5, 6, and 186 Study



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director *F. Laskey*
DATE: December 14, 2016
SUBJECT: Janitorial Services at the Deer Island Treatment Plant
Star Building Services, Inc.
Bid WRA-4303Q

COMMITTEE: Wastewater Policy & Oversight

 INFORMATION

 X VOTE

Michele S. Gillen
Michele S. Gillen

Director of Administration

Ted Regan, Deputy Director, Maintenance, Deer Island WWTP
David Duest, Director Deer Island WWTP
Carolyn Francisco Murphy, Director of Procurement
Preparer/Title

Michael J. Hornbrook
Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the award of Contract WRA-4303Q, Janitorial Services at the Deer Island Treatment Plant, to Star Building Services, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in an amount not to exceed \$1,479,655.10, for a contract term of three years.

DISCUSSION:

MWRA has been contracting janitorial and window cleaning services at the Deer Island Treatment Plant for the past 19 years. The current contract will expire on January 22, 2017.

Deer Island consists of approximately 229,414 square feet of usable space in 14 buildings. The facilities covered under this contract requiring daily janitorial services include computer rooms, laboratories, warehouse space, offices, common-use areas (e.g., kitchenettes, conference rooms, hallways, etc.) locker rooms, shower rooms, lavatories, control rooms, and workshops.

In addition, the contract includes periodic cleaning of the exterior windows and skylights, which



requires special equipment (mechanical lifts) and safety procedures.

The contract includes all necessary labor, equipment, materials, and supplies, with the exception of paper products and hand soap, which MWRA procures separately. The contractor is required to implement and manage a comprehensive janitorial program intended to protect and maintain the facilities and provide a healthy, clean environment for MWRA staff and visitors.

As has been the past practice, the contractor will be required to continue using "Green Seal Certified" products to minimize the use of hazardous cleaning products and, in accordance with the Commonwealth's "sustainability program," will work with MWRA staff to maintain the paper and cardboard recycling program.

It should be noted that the award of a contract for janitorial services at the Chelsea Facility is the subject of a separate staff summary being presented at this meeting.

Procurement Process

Purchasing staff solicited bids from four firms listed as approved contractors on the Commonwealth of Massachusetts janitorial contract (Massachusetts State Contract #FAC81) to perform janitorial services at Deer Island for a contract term of three years. In addition to being listed on the State contract, two of the four firms solicited have bid on previous janitorial services contracts at Deer Island and, as such, are familiar with the Deer Island facility.

On November 15, 2016, pricing submittals were received from three bidders with the following results:

VENDOR	BID PRICE
Star Building Services, Inc.	\$1,479,655.10
AMPM Facility Services	\$1,492,803.12
S.J. Services, Inc.	\$1,535,698.00

The contract requires payment of prevailing wage rates established by the Division of Occupational Safety for the metropolitan Boston area. Bidders were required to submit annual bid prices for all three years with award based on the lowest total bid price for the entire three-year contract term.

Star Building Services, Inc. submitted the lowest of the three responsive bids received. Under the current contract with AMPM Facility Services, which will expire on January 22, 2017, MWRA is paying an annual rate of \$461,329 for similar services. Star Building Services, Inc's bid price for year one of the new contract is \$475,512, which reflects an increase of \$14,183 from AMPM Facility Services' current one-year contract price. Star Building Services, Inc's bid price will be \$492,998 for year two and \$511,145.11 for year three.

Star Building Services, Inc. has extensive experience in providing janitorial services for other large public agencies, such as Lynn Public Schools and the Boston Fire Department.

Staff are of the opinion that Star Building Services possesses the skill, ability, and experience necessary to perform the work under this contract and is qualified to do so. Therefore, staff recommend the award of this contract to Star Building Services as the lowest responsive bidder.

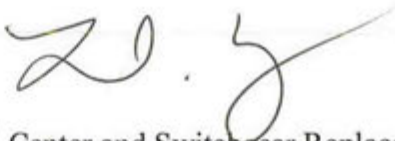
BUDGET/FISCAL IMPACT:

The Operations Division's FY17 Current Expense Budget included sufficient funding for the first year of this contract. Appropriate funding also will be included in subsequent Proposed CEB requests for the remaining term of the contract.

MBE/WBE PARTICIPATION:

Star Building Services, Inc. is a certified Minority and Women-owned business.


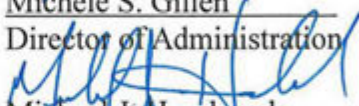
STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: December 14, 2016
SUBJECT: Deer Island Treatment Plant Motor Control Center and Switchgear Replacement Design, Engineering Services During Construction, and Resident Engineering/Inspection Services
AECOM
Contract 7419

COMMITTEE: Wastewater Policy & Oversight

 INFORMATION
 X VOTE

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


Michele S. Gillen
Director of Administration

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to select AECOM to provide preliminary design, final design, engineering services during construction and resident engineering/inspection services, for the Deer Island Treatment Plant Motor Control Center and Switchgear Replacement project, and to authorize the Executive Director, on behalf of the Authority, to execute said contract with AECOM in an amount not to exceed \$2,479,672 for a contract term of 65 months from the Notice to Proceed.

BACKGROUND:

The Deer Island Wastewater Treatment Plant is one of the largest wastewater treatment facilities in North America. The facility provides primary and secondary treatment of wastewater collected from 43 member sewer communities in the Greater Boston area. The facility systems came on-line sequentially beginning in 1992 and were completed in 2001 at a cost of \$3.8 billion. Deer Island consists of a number of complex wastewater treatment processes that include mechanical, electrical and controls to operate and control the wastewater treatment process. The infrastructure required to maintain these systems includes but is not limited to: electrical, mechanical, HVAC, controls and personal protection systems. The average age of these systems is approximately 20 years and a number are reaching the end of their useful life, as identified in MWRA's 2013 Wastewater Master Plan.

A critical element of the overall facility infrastructure on Deer Island is the electrical distribution equipment. As part of MWRA's on-going Facilities Asset Management Program, staff continually assess the condition and performance of this equipment on a routine basis. Within

the electrical distribution system, there are many sub-systems and individual components which distribute power throughout all of the facilities and systems on the island. These components include transformers, load-break switches, switchgear and motor control centers. Key indicators are monitored on this equipment to ensure system performance and reliability is maintained. One key indicator is a significant decrease in the equipment's insulation systems. Over time, electrical equipment insulation system degrades to a point of near term failure. Staff continuously monitor the electrical testing data to determine when the equipment is near its end of life.



Figure 1-Admin/Lab/Warehouse Switchgear

In addition, replacement parts for electrical equipment such as switchgear and motor control centers (MCC) have become obsolete and are no longer supported by the original equipment manufacturer(s) or third party affiliations. Staff continuously monitor the marketplace for spare parts and when parts become difficult to attain, staff make the determination to replace the equipment.

DISCUSSION:

The major elements of the electrical switchgear and motor control centers are circuit breakers, protective relays, and current and voltage transformers. Over time, this equipment becomes obsolete and staff can no longer obtain spare parts. The system cannot properly operate if replacement parts cannot be obtained. The existing five motor 480 volt control centers in the Winthrop Terminal Facility (WTF) and North Main Pump Station (NMPS) were installed in the late 1980s. The two 480 volt switchgears located in the Administration/Warehouse/Laboratory buildings were installed in 1991. The original equipment manufacturers and third party affiliates stopped manufacturing the circuit breakers and control systems for this equipment over 7 years ago. Staff accumulated spare parts at that time, but have been exhausting the parts supply over time. In addition, the insulation system for the circuit breakers within the motor control systems has been tracking downward over the last several years. Staff recommend replacing this equipment due to the lack of availability of spare parts and the electrical test data that indicates that the equipment is near the end of its useful life.



Figure 2-NMPS Motor Control Center

Contract 7419 will include design, bidding and engineering services and resident engineering/inspection services during the construction phase for MWRA Construction Contract 7420. In addition, the Consultant will perform an assessment of the existing configuration of the motor control centers to determine if the overall reliability of the equipment could be improved by adding a redundant circuit feeder to the units that presently only have one feeder circuit.

The project will include the replacement of the five motor control centers and the two switchgears noted above. The approved FY17 Capital Improvement Program includes \$10.5 million for the construction phase of the replacement electrical equipment.

Procurement Process

Staff issued a one-step Request for Qualifications/Proposal (RFQ/P) on September 14, 2016. Proposals were evaluated in accordance with weighted criteria and the recommendation for award is to the proposer that had the highest overall ranking. Proposals were evaluated by using the following criteria: Cost (25 points), Qualifications and Key Personnel (25 points), Past Performance on Authority Projects (18 points), Experience/Past Performance on Similar Non-Authority Projects (12 points), Technical Approach (10 points), /Capacity/Organization and Management Approach (5 points), Minority- and Women-Owned Business Enterprise Participation (5 points).

MWRA received proposals from the following three firms: Stantec, Arcadis and AECOM. Cost proposals with level of effort are presented below:

<u>Proposers</u>	<u>Proposed Contract Cost</u>	<u>Level of Effort</u>
Stantec	\$1,765,325.69	12,503 hours
Arcadis	\$2,078,836.71	14,490 hours
<i>Engineer's Estimate*</i>	<i>\$2,243,000.00</i>	<i>15,089 hours</i>
AECOM	\$2,479,672.00	15,805 hours

*Revised to accurately reflect number of design drawings

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

<u>Proposers</u>	<u>Points</u>	<u>Total Score*</u>	<u>Final Ranking</u>
AECOM	342.5	5	1
Arcadis	312.25	13	2
Stantec	310.7	12	3

* Total Score represents the sum of the individual Selection Committee members' rankings. 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.

The Selection Committee unanimously ranked AECOM as the best firm with the best value for MWRA to complete this project despite being the highest in overall cost. The firm proposed an excellent project team with excellent relevant experience and past performance on several non-

MWRA and MWRA projects. The Selection Committee was in agreement that AECOM's technical approach was comprehensive and provided solid details on how it would bring this project to completion. AECOM's proposal included an appropriate number of total hours, which was distributed appropriately among a very experienced staff for the development of the Preliminary Design Report through the design phases, the most critical aspects of this project, and would be instrumental in ensuring the successful completion of the resulting construction project. The Selection Committee agreed that AECOM's project team possess the best skill set necessary to perform a design that would seamlessly interface this critical equipment into the existing plant electrical distribution system. Staff are of the opinion that the more experienced project team would also produce well-defined bid plans and specifications.

Conversely, the Selection Committee was in agreement that although Stantec's overall cost proposal was the lowest, there was concern that it's proposal did not include a sufficient amount of hours to complete the overall design. In addition, they had the lowest number of hours for the Project Manager and senior level staff as compared to AECOM's proposal. Stantec's proposal indicated that they were relying on junior less experienced staff to complete this complex design. Stantec's proposal included a total 12,503 hours of which 2,951 hours (or 23.6%) was dedicated to senior level staff compared to AECOM's proposal which included a total of 15,805 hours of which 5,295 hours (or 33.5%) to provide the same design. In addition, Stantec's proposal included a total of approximately 654 hours to perform the Preliminary Design Report compared to AECOM's proposal which included approximately 1,040 hours to perform the same task. The Selection Committee felt that Stantec's proposal did not carry sufficient hours to perform the technical elements of this complex, electrical PDR and design.

The Selection Committee was in agreement that although Arcadis included hours under the Engineer's Estimate to complete the project, but significantly more than Stantec's proposal, the composition of the technical team lacked sufficient experience in the design of electrical switchgear and motor control centers. Arcadis proposal allocated the lowest number of hours to senior staff 1,679 (or 11.5%). This was concerning to the Selection Committee as the work requires a highly experienced electrical skill set to ensure problems are minimized during the design and construction phase. In addition, the Resident Engineers proposed for the project did not have both the minimum license requirement (journeyman's license) and the experience level required for the construction oversight of this project.

Moreover Arcadis' proposal included a team with the least amount of experience of all firms in the electrical design field. The allocation of hours and lack of applicable experience played a significant role in the Selection Committee's final vote and ranking.

The Selection Committee determined that AECOM's proposal represents the best overall value (total cost and level of effort by a highly qualified team) of the three proposals. The Selection Committee was of the opinion that AECOM included the best design team and included the appropriate number of hours, by category, with the proper staffing mix (senior and junior level) to successfully complete the design and technical specifications. The Selection Committee concluded that AECOM's past experiences on several previous Deer Island task order and design, engineering services during construction and resident engineering contracts have been excellent over the last 15 years. In addition, AECOM's non-Deer Island experience overall was good with the exception of a few projects on which AECOM accepted responsibility for errors and omissions.

Therefore, the Selection Committee recommends approval of this contract to AECOM in an amount not to exceed \$2,479,672.00.

BUDGET/FISCAL IMPACT:

The FY17 Capital Improvement Program includes a budget of \$2,500,000 for Contract 7419. The recommended award amount is \$2,479,672.00

MBE/WBE PARTICIPATION:

The minimum MBE and WBE participation requirements established for this project are 7.18% and 5.77%, respectively. AECOM, as well as the other proposers all requested waivers of this requirement, which was granted, committed to 3.65% MBE and 2.50% WBE participation.

STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: December 14, 2016
SUBJECT: Personnel Dock Rehabilitation
Deer Island Treatment Plant
Coastal Marine Construction LLC
Contract 7168



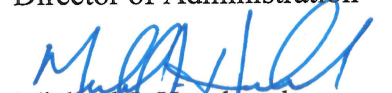
COMMITTEE: Wastewater Policy & Oversight

David P. Duest, Director, Deer Island WWTP
Richard J. Adams, Mgr, Engineering Services
Brian Davitt, Project Manager
Preparer/Title

 INFORMATION
 X VOTE



Michele S. Gillen
Director of Administration



Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the award of Contract 7168 for Personnel Dock Rehabilitation at the Deer Island Treatment Plant to Coastal Marine Construction LLC, and to authorize the Executive Director, on behalf of the Authority, to execute Contract 7168 with Coastal Marine Construction LLC., in an amount not to exceed \$1,294,524, for a contract term of 238 calendar days from the Notice to Proceed.

DISCUSSION:

Deer Island Treatment Plant's Floating Docks were constructed and installed in 1988. The floating docks are located in the Pier facility on the South West side of Deer Island. Originally, they were used to transport materials and personnel during construction of the Deer Island Treatment Plant. The floating personnel docks are now used as part of the Plant's Integrated Contingency Plan ("ICP") for marine-based oil spill containment and response, specifically boom deployments. Given the large quantities of fuel oil on Deer Island, the docks would be used to move personnel and materials from land to marine response vehicles to aid in oil spill containment. The docks are also used by MWRA staff to deliver harbor and bay samples to the Deer Island Laboratory and are used to accept larger groups of visitors arriving to and from the Plant by boat.

Each dock is approximately 80-feet long, 20-feet wide, and 5-feet deep, with six watertight compartments evenly spaced along their length; each of these compartments has a watertight

access hatch. The docks are constructed of 3/8-inch coated steel and have coated steel railings and galvanized steel grating walkways on the topside. One dock is connected to land by an aluminum gangway, and the two docks are connected by an inter-float connecting bridge.



View of the floating docks during a king tide event on October 18, 2016

The condition of the docks has deteriorated due to the harsh conditions caused by the marine environment including salt water, winter weather, winds, rough water and tidal forces. In 2015, several small holes developed at the end of the one of the docks, causing water to accumulate within two of the watertight compartments causing the dock to slightly list. Staff had temporary repairs performed in the summer of 2015 including: patch holes; installing a 120 volt pump to pump out the water within the flooded compartments; and secured the inter-float connection bridge. The repairs during the summer of 2015 were only a temporary means to stabilize the dock.



View of the damaged collar on floating dock no. 2



View from floating dock no. 1 of the gangway



View of a small hole on floating dock no. 1 prior repair during summer of 2015.



View of a damaged track for the gangway on floating dock no. 1.

This contract will improve the safety, appearance and reliability of the floating docks. The Scope of Work includes removing the docks during the offseason (December through May) and transporting them to an approved contractor's repair marine facility. The docks will be pressure washed to remove biological material that has accumulated. The docks' hulls and decks will be sandblasted, followed by an ultrasonic test to measure steel plate thickness to identify which of the steel plates require replacement. The end sections of the deck and areas surrounding the hatches will also be replaced by new steel plates. The docks will be coated and receive new galvanized steel deck grating, rubber fender and railing. The docks will then be reinstalled in the current location.

In addition, the scope of the project also includes replacement of a 24-inch diameter tidal flap gate No. 9 and 36-inch diameter tidal flap gate No. 10 which are at the end of their useful life. The tidal flap gates were originally installed in 1988. The tidal flap gates serve as an outfall for storm water collected in the southwest section of the Deer Island Treatment Plant.

Procurement Process

Contract 7168 was advertised and bid in accordance with Massachusetts General Laws, Chapter 30. General bids were opened on December 1, 2016; the results are presented below:

<i>Engineer's Estimate</i>	<i>\$1,001,050.00</i>
Coastal Marine Construction, LLC	\$1,294,524.00
R. Zoppo Corp.	\$1,299,685.00

Staff have reviewed the bids and determined that Coastal Marine Construction LLC, has met all the requirements of the construction specifications and drawings. Coastal Marine Construction, LLC bid price is 29.32% higher than the Engineer's Estimate. The difference between the Engineer's Estimate and the lowest bid was attributed to the costs associated with the metal repair work and coating. The cost of metal repair and recoating work was approximately \$175,000 and \$45,000, respectively, higher than the Engineer's Estimate. Staff reviewed the bidder's bid tabulation and have determined that the bid is reasonable and that the Engineer's Estimate did not accurately reflect market conditions for the steel work and the coating of the docks.

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

Coastal Marine Construction, LLC possesses the skill, ability and integrity necessary to perform this work and is qualified to do so. Staff are of the opinion that Coastal Marine Construction, LLC can perform the work for the bid price submitted. Therefore, staff recommend the award of this contract to Coastal Marine Construction, LLC as the lowest responsible and eligible bidder.

BUDGET/FISCAL IMPACT:

The Final FY17 Deer Island capital budget contains \$2,264,750 for Barge Berth and Facility Replacement. This amount is sufficient for the Personnel Dock Rehabilitation work.

MBE/WBE PARTICIPATION:

Due to the specialized nature of this work, there were no minimum MBE and WBE participation requirements established for this project.



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

to be held on

Wednesday, December 14, 2016

Chair: A. Blackmon
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

AGENDA

A. Approvals

1. Water Supply Contract Renewals - Southborough, Stoughton, Wakefield, and Worcester

B. Contract Amendments/Change Orders

1. Wachusett Aqueduct Pumping Station Design, Construction Administration and Resident Inspection Services: Stantec Consulting Services, Inc., Contract 7156, Amendment 3
2. Wachusett Aqueduct Pumping Station: BHD/BEC JV 2015, Joint Venture Contract 7157, Change Order 5

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the
Water Policy and Oversight Committee

November 16, 2016

A meeting of the Water Policy and Oversight Committee was held on November 16, 2016 at the Authority headquarters in Charlestown. Chairman Blackmon presided. Present from the Board were Ms. Wolowicz and Messrs. Carroll, Cotter, Pappastergion, Peña, Vitale and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Steve Estes-Smargiassi, Dave Coppes, Carolyn Fiore, Nava Navanandan, Fred Brandon, Pat Barrett, Peter Grasso, John Vetere, Bill Sullivan, and Bonnie Hale. The meeting was called to order at 11:15 a.m.

Information

Reservoir and Drought Status Update

Staff gave a presentation on the present status of reservoir levels.

Update on Lead and Copper Compliance – Fall 2016

Staff reported that system-wide lead levels were below the Action Level for the 21st consecutive sampling round and that MWRA continues to meet the copper standard.

Approvals

*Emergency Water Supply Agreement with Cherry Valley and Rochdale Water District

The Committee recommended approval of the six-month Emergency Water Supply Agreement (ref. agenda item B.1).

Contract Awards

*Commonwealth Avenue Pump Station Improvements – Design, Engineering Services During Construction and Resident Engineering/Inspection Services: Black & Veatch Corporation Contract 7523

Staff summarized and gave a presentation on this redundancy project. There was general discussion and question and answer. The Committee recommended approval of the contract award (ref. agenda item C.1).

* Approved as recommended at November 16, 2016 Board of Directors meeting.

*Northern Intermediate High Sections 110 and 112 – Stoneham and Wakefield:
Albanese D&S, Inc., Contract 7478

Staff gave a presentation on the project, and the Committee recommended approval of the contract award (ref. agenda item C.2).

*Section 80 Repair - Weston: P. Caliacco Corporation, Contract 7532

Staff gave a presentation on the repair project and there was general discussion – particularly on the reasons for the revised engineer's estimate. The Committee recommended approval of the contract award (ref. agenda item C.3).

*Chicopee Valley Aqueduct Intake Traveling Screen Replacement: W. M. Schultz
Construction, Inc., Contract 7488

Staff gave a presentation on the project and the particulars of the contract; there was general discussion and question and answer. The Committee recommended approval of the contract award (ref. agenda item C.4).

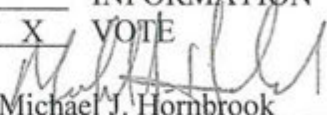
The meeting adjourned at 12:05 p.m.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: December 14, 2016
SUBJECT: Water Supply Continuation Agreements for Southborough, Stoughton, Wakefield and Worcester

COMMITTEE: Water Policy & Oversight

Pamela Heidell, Policy and Planning Manager
Carolyn Fiore, Deputy Chief Operating Officer
Preparer/Title

 INFORMATION
 X VOTE

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to execute the attached ten-year Water Supply Continuation Agreements with Southborough, Stoughton, Wakefield and Worcester substantially in the form filed as Attachments 1 through 4 to this Staff Summary.

DISCUSSION:

Introduction

Twenty-five of the fifty MWRA water served communities are contract communities that receive MWRA water pursuant to Water Supply Continuation Agreements.¹ Fourteen contract communities, among them Stoughton and Wakefield, are partially supplied by MWRA and regularly use local sources to meet some portion of demand, and eight contract communities, including Southborough are fully served. In addition, Worcester is one of three MWRA communities that rely on MWRA only in unusual or emergency situations.

Southborough and Stoughton's Water Supply Agreements expire on December 31, 2016, whereas Wakefield and Worcester's Agreements have expired. The development of new Agreements with these communities was predicated upon the satisfaction of certain criteria set forth in the MWRA Enabling Act and the completion of a process outlined in MWRA regulation (360 C.M.R. 11.00) entitled "Regulations for the Continuation of Contract Water Supply." The Regulation requires the preparation of a Supplementary Report for each community that includes supply and demand analyses, documentation of conservation and demand management efforts, and a description of various facets of the community's water supply system. The Regulation also prescribes the execution of a written agreement between MWRA and each community.

¹ The differentiation between contract and non-contract communities dates back to prior to the Enabling Act. In addition, all communities admitted to the Waterworks system after MWRA's creation are contract communities.

The Proposed Agreements

Each of the proposed Agreements specifies how water supply needs of the community will be met in a manner consistent with the capabilities of the MWRA water supply system and also constitutes a record of compliance with the factors and requirements specified in Section 8 (d) of the Enabling Act and MWRA regulations (360 C.M.R 11.00), including use and non-abandonment of local sources, implementation of effective demand management measures, and the conduct of water use surveys.

Contract Water Volumes

Maximum annual water volumes and maximum daily water volumes that MWRA agrees to provide the community over the next ten years are stated in the contracts:

Community	Demand			
	Highest Annual Demand Prior Five Years (mg)	Existing Contract Annual Maximum Withdrawal (mg)	Proposed Contract Annual Maximum Withdrawal (mg)	
			2017	2026
Southborough	383	475	400	450
Stoughton	330	419.75	419.75	419.75
Wakefield Scenario 1	534	806	575	620
Wakefield Scenario 2			575	802
Worcester	0.7	0 in typical year 26 mgd emergency	0 in typical year 26 mgd emergency	0 in typical year 26 mgd emergency

Going forward, the withdrawal volumes specified in the MWRA/Southborough Agreement are lower than the 2007-2016 contract but are higher than actual withdrawals in recent years. The Town is projecting both residential and commercial growth including a 320 unit 40B/40A apartment and Town House complex, a 125 room hotel and a 150 room assisted living facility. The Agreement's water supply withdrawal volumes are exclusive of any MWRA water that Southborough wheels to Ashland (Ashland is withdrawing MWRA water now via an Emergency Water Supply Agreement and is pursuing admission to MWRA as a partially supplied water community).

Stoughton's proposed contract reserves Stoughton's right to withdraw 419.75 million gallons (MG) a year from the MWRA: when Stoughton joined the MWRA Water System in 2002, this is the volume that Stoughton projected it would need and is the contracted amount on which Stoughton's entrance fee is based. In the future, Stoughton projects it will require only 91 MG since the Town has recently redeveloped local sources of supply. In October, Stoughton sent a letter to Secretary Beaton requesting its entrance fee payment be reduced due to its projected decreased reliance on MWRA and due to lower interest rates. However, Stoughton's Town Manager, after discussion with MWRA and MWRA Advisory Board staff, has indicated the Town wishes to retain its right to withdraw 419.75 million gallons a year (since it has largely paid for this volume already). Stoughton is paying its entrance fee over 20 years and has approximately 4.5 years of entrance fee payments remaining. The proposed Agreement includes an entrance fee payment schedule for remaining payments which reflects the Authority's current

prevailing rate of average fixed rate debt, as addressed further in the Budget/Fiscal Impact section.

Wakefield's Agreement contains two scenarios for water withdrawals. One scenario reflects more or less the status-quo of modest growth, whereas the second scenario reflects an allowance for a high volume water user to move to Wakefield. Wakefield has indicated it has significant industrial and commercial zone property and that it would like to attract this type of growth; accordingly assurance of water supply availability for a high water use business was integrated into the Agreement.

The MWRA/Worcester Agreement specifies that MWRA shall not regularly provide the City with water with the exception of pump exercising and testing purposes, but that in the event of unusual and emergency conditions such as severe drought or contamination of local sources, MWRA will use its best efforts to supply Worcester the quantity of water necessary to meet its legitimate needs. Under normal circumstances, Worcester's ten reservoirs are more than adequate to meet the City's demand and the City's MWRA withdrawals are limited to water required to periodically test and exercise pumps at Worcester's emergency connections to MWRA. This year, though, Worcester activated its emergency connection to MWRA in response to the drought and for approximately 60 days so far this year, it has withdrawn 828 MG through November.

Demand Management Features in Contract Renewal Process

The contract renewal process provides an opportunity to assess the accomplishments that the communities have made to implement demand management and to protect local sources, pursuant to the Continuation of Water Supply regulations and Enabling Act requirements. Some key features are noted below.

All four communities have ongoing leak detection and repair programs, and all report that 100% of their systems are metered. Southborough's UAW averaged 12% in recent years and Wakefield's Unaccounted for Water (UAW) averaged 9.9%, below the 10% standard of the Massachusetts Water Conservation Standards. While UAW for Stoughton and Worcester are typically in the mid-teens, both communities are taking measures to reduce UAW, including metering upgrades, and in Worcester's instance, implementation of Water Audit Software, improvements to internal data collection and record keeping for leaks, main breaks, hydrant use and fire department use.

The contract communities are required to have public information on conservation and an evaluation program that includes distribution of Authority provided materials and all are compliant. Water conservation tips are also provided on each community's website, and residential water consumption in Stoughton, Wakefield and Worcester compares favorably to the Massachusetts Water Conservation Standard of 65 RGPCD: in recent years, Stoughton's RGPCD has varied from 48 to 67, Wakefield's RGPCD from 56 to 64, and Worcester's RGPCD from 51 to 57. Southborough's RGPCD has varied from 68 to 76 and the Town has implemented voluntary water bans in the summer. All of the communities have adopted a local drought restriction enforcement ordinance.

BUDGET/FISCAL IMPACTS:

Southborough, Stoughton and Wakefield are assessed in accordance with MWRA's Community Charge Determination Policy. MWRA's Community Charge Determination Policy computes charges for water services on the basis of each community's metered water flows, and water assessments are calculated by allocating the total annual water rate revenue requirement based on each community's share of flow for the last full calendar year. Worcester is charged a flat wholesale rate per million of gallons of water supplied, since a prior year's use has little relationship to what Worcester may use in an emergency in the next year.

Stoughton's proposed contract has a revised interest rate of 3.95% for the remaining entrance fee payments. Stoughton has 5.5 years of entrance fee payments remaining. The original MWRA/Stoughton 2002 Agreement and entrance fee payment schedule reflected a 4.43% interest rate, which was adjusted to 4.34% in 2014, after the Advisory Board and MWRA Board approvals. Recently, Stoughton asked MWRA to reconsider the interest rate and at its November 17, 2016 meeting, the Advisory Board voted to approve the interest rate adjustment to 3.95%, MWRA's current prevailing rate of average fixed rate debt.² This rate would be applied to the remaining 5.5 years of payments, and the total reduction in interest in Stoughton's entrance fee payments would be \$119,074.86 over the remaining years of the payment schedule.

The interest rate for entrance fee payment has been the subject of policies adopted by the MWRA Advisory Board and Board of Directors. Whereas the Board adopted revisions to MWRA OP#.10 in 2014 which provided for entrance fee payments to be made pursuant to a 25-year, interest-free payment plan, the Policy explicitly states eligibility for the interest-free payment plan is limited to new communities (e.g., North Reading, Ashland, Union Point/Southfield) pursuing admission to MWRA, and communities admitted since 2002 that wish to increase their MWRA approved withdrawal. Stoughton is not proposing to increase its withdrawal so an interest free option for remaining payments is not available, per OP#.10.

ATTACHMENTS:

1. Water Supply Agreement between MWRA and the Town of Southborough
2. Water Supply Agreement between MWRA and the Town of Stoughton
3. Water Supply Agreement between MWRA and the Town of Wakefield
4. Water Supply Agreement between MWRA and the City of Worcester

² Wilmington is also making entrance fee payments pursuant to an entrance fee payment schedule that reflects a 4.34% interest rate. Should the Board approve Stoughton's new contract and entrance fee payment schedule, Board approval for an amended Water Supply Agreement with Wilmington reflecting a 3.95% interest rate for remaining entrance fee payments will be sought in January.

WATER SUPPLY CONTINUATION AGREEMENT
BETWEEN
THE MASSACHUSETTS WATER RESOURCES AUTHORITY
AND
THE TOWN OF SOUTHBOROUGH

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

RECITALS

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

- R.5. The Town executed a contract dated January 27, 1977 for the purchase of water from the MDC which contract, remained in effect until January 26, 1997.
- R.6 The Town and MWRA entered into a Memorandum of Agreement (“MOA”) in 1997 regarding mitigation measures to be implemented by the MWRA in connection with the construction by MWRA of the MetroWest Water Supply Tunnel in Southborough that provided for the Town’s receipt of a total of three hundred thousand gallons of water per day free of charge from the MWRA water supply system in any Water Supply Contract renewals.
- R.7 The Town and the MWRA subsequently executed new contracts for the purchase of water from the MWRA in 1999 and 2008, the latter contract, which by its terms, expires on December 31, 2016.
- R.8 The Town, pursuant to the Regulation, has requested that the MWRA continue to supply water to it and has submitted a continuation request, a Supply Analysis Report, a Demand Analysis Report and a plan for water conservation and demand management pursuant to section 11.08 of the Regulation.
- R.9 The Town has submitted a detailed description of local user charge systems and accounting systems which meet the Regulation’s requirement for conservation based rates.
- R.10 Based on its review of the submittals described in the recitals numbered R.8. and R.9., MWRA finds that the applicable requirements of section 8(d) of the Act have been met as follows:
- (1) the safe yield of the watershed system as of the date of this contract and as projected for the term hereof, is sufficient to meet the projected demand of the town.
 - (2) no existing or potential water supply source for the Town has been abandoned;
 - (3) effective demand management measures have been developed by the Town;
 - (4) a local water supply source feasible for development has not been identified by either the Town or the Department of Environmental Protection (the “DEP”);
 - (5) a water use survey has been completed which identifies all users within the Town that consume in excess of twenty million gallons a year.
- R.11 The Town and the Town of Ashland (“Ashland”) are in discussions whereby the Town would wheel water received from the MWRA to Ashland, in conjunction with Ashland’s efforts to become an MWRA community. It is understood that any volume of MWRA water that would be wheeled through the Town to Ashland will be metered and that MWRA water supplied to Ashland will not be considered part of the Town’s approved withdrawal from the MWRA.
- R.12. The MWRA and the Town wish to formalize their rights and obligations regarding the supply of water to the Town and therefore enter into this Agreement.

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

1. The term ("Term") of this Agreement shall be ten (10) years beginning on January 1, 2017 and ending at midnight on December 31, 2026.
2. The MWRA shall during the Term provide the Town with water on a maximum annual water volume basis, stated in millions of gallons, as follows:

<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
400	400	400	400	400
<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
450	450	450	450	450

And on a maximum daily water volume basis, stated in millions of gallons per day as follows:

<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
3.0	3.0	3.0	3.0	3.0
<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
3.5	3.5	3.5	3.5	3.5

The annual volume basis and daily water basis are exclusive of any water that the Town may wheel to Ashland, which would be metered at a juncture between the Town and Ashland.

3. In the event of unusual water demand or supply conditions and upon written notice to the MWRA disclosing and explaining such conditions, MWRA agrees that it will use its best efforts to supply the Town with those quantities of water to meet its legitimate needs in excess of the maximum annual water volumes stated above.
4. In the event that revised circumstances regarding local demand and/or supply should occur and the Town determines that the volume designated in this Agreement to be supplied from the MWRA system is insufficient to meet the Town's newly projected demand, the Town may petition the MWRA to amend this Agreement pursuant to 360 C.M.R. 11.11.
5. Except for the first three hundred thousand gallons per day, which MWRA shall provide free of charge pursuant to the MOA, MWRA shall bill the Town and the Town shall timely pay to the MWRA charges for all water supplied under this Agreement at the MWRA's applicable prevailing rate(s). All billing procedures, due dates, and interest charges for late payments shall be in accordance with the MWRA's standard policies and procedures.

6. The Town agrees to continue in effect during the Term a user charge system and an accounting system which meets the Regulation's requirement for conservation based rates.
7. The Town shall develop and implement a full cost pricing system within twelve (12) months from the date that all communities listed in section 8(d) of the Act, other than those subject to 360 CMR 11.00, have implemented a full cost pricing system.
8. The Town agrees that during the Term it shall continue the implementation of its current and proposed local demand management programs, including participation in MWRA conservation programs, and distribution of MWRA-provided materials to all water users.
9. Any dispute arising between the MWRA and the Town under the terms of this Agreement shall be resolved exclusively in accordance with the dispute resolution process set forth at 360 CMR 11.14 and the administrative procedures set forth at 360 CMR 1.00.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed on this ___ day of _____, 2016 by their duly authorized representatives.

MASSACHUSETTS WATER RESOURCES AUTHORITY

By:

Frederick A. Laskey
Executive Director

TOWN OF SOUTHBOROUGH

By:

WATER SUPPLY CONTINUATION AGREEMENT

BETWEEN

THE MASSACHUSETTS WATER RESOURCES AUTHORITY

AND

THE TOWN OF STOUGHTON

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

RECITALS

- R.1. The MWRA was created by the Massachusetts legislature in December, 1984 to operate, regulate, finance, and modernize the waterworks and sewerage systems serving the greater metropolitan Boston area. Operating pursuant to the terms of its Enabling Act, chapter 372 of the Acts of 1984 (the "Act"), the MWRA currently provides water supply and distribution services and wastewater collection and treatment services, to certain cities, towns and special service districts (the "Communities") within its service area.
- R.2. The MWRA desires to continue to provide safe and sufficient water supplies to the Town and to provide system-wide assistance to help protect and conserve water supplies.
- R.3. Section 8 (d) of the Act permits the MWRA to extend its waterworks system to a community and to provide the continued delivery of water to the new community under reasonable terms as determined by MWRA provided that specified requirements are met.
- R.4. The Town, having met the conditions of Section 8 (d) and the conditions of O.P.#10, Admission of a New Community to the Waterworks System, was duly admitted to the MWRA Waterworks System on June 12, 2002, thereby acquiring certain rights and obligations conferred by that admission.
- R.5. A regulation entitled "Continuation of Contract Water Supply," promulgated by the MWRA at 360 C.M.R. 11.00 and most recently revised on November 18, 1994, (the "Regulation") defines more specifically the requirements of section 8(d) of the Act and governs the continued delivery of water by the MWRA to the Communities which purchase water in accordance with contracts.

- R.5. The Town executed a contract dated July 1, 2002 for the purchase of water from the MWRA, which contract expired on June 30, 2007.
- R.6 The Town and the MWRA subsequently executed a new contract for the purchase of water from the MWRA in 2007, which was amended in 2014 and which, by its terms, will expire on December 31, 2016.
- R.7 The Town agreed to pay MWRA an Entrance Fee of Five Million Six Hundred Fifty-seven Thousand One Hundred Seventeen and 64/100 Dollars (\$5,657,117.64) for its share of the present asset value of the waterworks system in place at the time of its entrance and associated with an annualized average day withdrawal of 1.15 mgd (“Entrance Fee.”). The Entrance Fee was to be paid to the MWRA in accordance with a schedule of payments established at the time of its entrance and attached to the 2002-2007 Water Supply Agreement. That schedule amortized payments of the Entrance Fee over 20 years with interest on the unpaid balance at 4.43%. In 2014, the interest rate upon remaining payments was further reduced for the remaining years of payments to 4.34%.
- R.8 In 2016, Stoughton requested that the schedule of payments be modified for the remaining payments, and on November 17, 2016, the Advisory Board approved a further reduction in the interest rate upon the remaining installments of Stoughton’s Entrance Fee to 3.95%.
- R.9 The Town, pursuant to the Regulation, has requested that the MWRA continue to supply water to it and has submitted a continuation request, a Supply Analysis Report, a Demand Analysis Report and a plan for water conservation and demand management pursuant to section 11.08 of the Regulation.
- R.10 The Town has submitted a detailed description of local user charge systems and accounting systems which meet the Regulation’s requirement for conservation based rates.
- R.11. The MWRA and the Town wish to formalize their rights and obligations regarding the supply of water to the Town and therefore enter into this Agreement.

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

- 1. The term (“Term”) of this Agreement shall be ten (10) years beginning on January 1, 2017 and ending at midnight on December 31, 2026.
- 2. The MWRA shall during the Term provide the Town with water on a maximum annual water volume basis, stated in millions of gallons, as follows:

2017 2018 2019 2020 2021

419.75	419.75	419.75	419.75	419.75
<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
419.75	419.75	419.75	419.75	419.75

and up to 2.5 million gallons per day (mgd) on a maximum daily water volume basis. In any year in which the Town's usage exceeds the maximum annual volume or maximum daily volume stated above, the Town will provide MWRA with a written explanation of the increased demand and a plan to reduce the water volume below the contract limits.

3. Any increase beyond 419.75 million gallons on an annual basis will require a written contract revision signed by each of the Parties hereto and a revision to the Entrance Fee. The Parties agree that a water supply emergency may be an appropriate reason for the Town to increase its maximum water volume in excess of the above referenced volume without requiring a revision to this Agreement.
4. In the event that revised circumstances regarding local demand and/or supply should occur and the Town determines that the volume designated in this Agreement to be supplied from the MWRA system is insufficient to meet the Town's projected demand, the Town may petition the MWRA to amend this Agreement pursuant to 360 C.M.R. 11.11 and MWRA OP#.10, Admission of a New Community to the Waterworks System.
5. The Town agrees to continue and to complete the payment to MWRA of the Entrance Fee in accordance with the schedule of payments attached hereto as Exhibit A and incorporated herein, each installment having been calculated at a reduced rate of interest of 3.95% instead of 4.34%. Payments of Entrance Fee installments at the reduced rate of interest shall begin with the installment payment due to the Authority on February 1, 2017 and shall continue thereafter until all of the remaining installments shown on Exhibit A have been fully paid. It is the express understanding of the Parties, in consideration of Stoughton's payment of the Entrance Fee in accordance with the provisions of this and past Agreements, that Stoughton shall have the right to a continuation of its purchase of water supply from MWRA subject always to its continued compliance with the provisions of Section 8(d) of the Act and with the Regulation. The process for requesting the continuation of water supply shall be as set forth in the Regulation.
6. The MWRA shall bill the Town and the Town shall pay to the MWRA charges for all water supplied under this Agreement at the MWRA's applicable prevailing rate(s). All billing procedures, due dates, and interest charges for late payments shall be in accordance with the MWRA's standard policies and procedures.
7. The Town agrees to continue in effect during the Term a user charge system and an accounting system which meets the Regulation's requirement for conservation based rates.

8. The Town shall develop and implement a full cost pricing system within twelve (12) months from the date that all communities listed in section 8(d) of the Act, other than those subject to 360 CMR 11.00, have implemented a full cost pricing system.
9. The Town agrees that during the Term it shall continue the implementation of its current and proposed local demand management programs, including participation in MWRA conservation programs, and distribution of MWRA-provided materials to all water users.
10. The Town agrees that during the Term it shall not abandon any local source and substitute for it water from MWRA sources unless DEP has declared that the local source is to be or has been abandoned, is unfit for drinking, and cannot be economically restored for drinking purposes.
11. Any dispute arising between the MWRA and the Town under the terms of this Agreement shall be resolved exclusively in accordance with the dispute resolution process set forth at 360 CMR 11.14 and the administrative procedures set forth at 360 CMR 1.00.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed on this ___ day of _____, 2016 by their duly authorized representatives.

MASSACHUSETTS WATER RESOURCES AUTHORITY

By:

Frederick A. Laskey
Executive Director

TOWN OF STOUGHTON

By:

Michael J. Hartman
Town Manager

**Stoughton Entrance Fee
Revised Payment Schedule
December 1, 2016**

Date	Starting Balance	Payment	Principal	Interest	Ending Balance	Fiscal Year Total
February 1, 2017	\$ 2,013,556.61	\$ 40,723.89	\$ 33,968.82	\$ 6,755.07	\$ 1,979,587.79	
March 1, 2017	\$ 1,979,587.79	\$ 40,723.89	\$ 34,721.79	\$ 6,002.10	\$ 1,944,866.00	
April 1, 2017	\$ 1,944,866.00	\$ 40,723.89	\$ 34,195.51	\$ 6,528.38	\$ 1,910,670.49	
May 1, 2017	\$ 1,910,670.49	\$ 40,723.89	\$ 34,517.05	\$ 6,206.84	\$ 1,876,153.44	
June 1, 2017	\$ 1,876,153.44	\$ 40,723.89	\$ 34,426.05	\$ 6,297.84	\$ 1,841,727.40	
August 1, 2017	\$ 1,841,727.40	\$ 40,723.89	\$ 28,562.24	\$ 12,161.65	\$ 1,813,165.15	
September 1, 2017	\$ 1,813,165.15	\$ 40,723.89	\$ 34,638.00	\$ 6,085.89	\$ 1,778,527.15	
October 1, 2017	\$ 1,778,527.15	\$ 40,723.89	\$ 34,946.02	\$ 5,777.87	\$ 1,743,581.13	
November 1, 2017	\$ 1,743,581.13	\$ 40,723.89	\$ 34,870.75	\$ 5,853.14	\$ 1,708,710.38	
December 1, 2017	\$ 1,708,710.38	\$ 40,723.89	\$ 35,172.66	\$ 5,551.23	\$ 1,673,537.72	
February 1, 2018	\$ 1,673,537.72	\$ 40,723.89	\$ 29,491.33	\$ 11,232.56	\$ 1,644,046.39	
March 1, 2018	\$ 1,644,046.39	\$ 40,723.89	\$ 35,739.01	\$ 4,984.88	\$ 1,608,307.38	
April 1, 2018	\$ 1,608,307.38	\$ 40,723.89	\$ 35,324.48	\$ 5,399.41	\$ 1,572,982.89	
May 1, 2018	\$ 1,572,982.89	\$ 40,723.89	\$ 35,613.26	\$ 5,110.63	\$ 1,537,369.63	
June 1, 2018	\$ 1,537,369.63	\$ 40,723.89	\$ 35,562.48	\$ 5,161.41	\$ 1,501,807.16	\$ 407,238.90
August 1, 2018	\$ 1,501,807.16	\$ 40,723.89	\$ 30,806.06	\$ 9,917.83	\$ 1,471,001.10	
September 1, 2018	\$ 1,471,001.10	\$ 40,723.89	\$ 35,785.65	\$ 4,938.24	\$ 1,435,215.45	
October 1, 2018	\$ 1,435,215.45	\$ 40,723.89	\$ 36,060.48	\$ 4,663.41	\$ 1,399,154.97	
November 1, 2018	\$ 1,399,154.97	\$ 40,723.89	\$ 36,026.11	\$ 4,697.78	\$ 1,363,128.86	
December 1, 2018	\$ 1,363,128.86	\$ 40,723.89	\$ 36,294.49	\$ 4,429.40	\$ 1,326,834.37	
February 1, 2019	\$ 1,326,834.37	\$ 40,723.89	\$ 31,817.45	\$ 8,906.44	\$ 1,295,016.92	
March 1, 2019	\$ 1,295,016.92	\$ 40,723.89	\$ 36,796.37	\$ 3,927.52	\$ 1,258,220.55	
April 1, 2019	\$ 1,258,220.55	\$ 40,723.89	\$ 36,498.84	\$ 4,225.05	\$ 1,221,721.71	
May 1, 2019	\$ 1,221,721.71	\$ 40,723.89	\$ 36,753.53	\$ 3,970.36	\$ 1,184,968.19	
June 1, 2019	\$ 1,184,968.19	\$ 40,723.89	\$ 36,744.59	\$ 3,979.30	\$ 1,148,223.60	\$ 407,238.90
August 1, 2019	\$ 1,148,223.60	\$ 40,723.89	\$ 33,140.06	\$ 7,583.83	\$ 1,115,083.53	
September 1, 2019	\$ 1,115,083.53	\$ 40,723.89	\$ 36,979.43	\$ 3,744.46	\$ 1,078,104.11	
October 1, 2019	\$ 1,078,104.11	\$ 40,723.89	\$ 37,219.74	\$ 3,504.15	\$ 1,040,884.36	
November 1, 2019	\$ 1,040,884.36	\$ 40,723.89	\$ 37,227.91	\$ 3,495.98	\$ 1,003,656.45	
December 1, 2019	\$ 1,003,656.45	\$ 40,723.89	\$ 37,461.41	\$ 3,262.48	\$ 966,195.04	
February 1, 2020	\$ 966,195.04	\$ 40,723.89	\$ 34,237.06	\$ 6,486.83	\$ 931,957.98	
March 1, 2020	\$ 931,957.98	\$ 40,723.89	\$ 37,795.37	\$ 2,928.52	\$ 894,162.61	
April 1, 2020	\$ 894,162.61	\$ 40,723.89	\$ 37,720.07	\$ 3,003.82	\$ 856,442.54	
May 1, 2020	\$ 856,442.54	\$ 40,723.89	\$ 37,939.30	\$ 2,784.59	\$ 818,503.24	
June 1, 2020	\$ 818,503.24	\$ 40,723.89	\$ 37,973.87	\$ 2,750.02	\$ 780,529.36	\$ 407,238.90
August 1, 2020	\$ 780,529.36	\$ 40,723.89	\$ 35,567.22	\$ 5,156.67	\$ 744,962.14	
September 1, 2020	\$ 744,962.14	\$ 40,723.89	\$ 38,220.85	\$ 2,503.04	\$ 706,741.30	
October 1, 2020	\$ 706,741.30	\$ 40,723.89	\$ 38,425.26	\$ 2,298.63	\$ 668,316.03	
November 1, 2020	\$ 668,316.03	\$ 40,723.89	\$ 38,477.67	\$ 2,246.22	\$ 629,838.36	
December 1, 2020	\$ 629,838.36	\$ 40,723.89	\$ 38,674.91	\$ 2,048.98	\$ 591,163.46	
February 1, 2021	\$ 591,163.46	\$ 40,723.89	\$ 36,753.24	\$ 3,970.65	\$ 554,410.22	
March 1, 2021	\$ 554,410.22	\$ 40,723.89	\$ 39,039.97	\$ 1,683.92	\$ 515,370.24	
April 1, 2021	\$ 515,370.24	\$ 40,723.89	\$ 38,990.70	\$ 1,733.19	\$ 476,379.54	
May 1, 2021	\$ 476,379.54	\$ 40,723.89	\$ 39,173.07	\$ 1,550.82	\$ 437,206.47	
June 1, 2021	\$ 437,206.47	\$ 40,723.89	\$ 39,252.91	\$ 1,470.98	\$ 397,953.56	\$ 407,238.90
August 1, 2021	\$ 397,953.56	\$ 40,723.89	\$ 38,092.60	\$ 2,631.29	\$ 359,860.95	
September 1, 2021	\$ 359,860.95	\$ 40,723.89	\$ 39,512.51	\$ 1,211.38	\$ 320,348.45	
October 1, 2021	\$ 320,348.45	\$ 40,723.89	\$ 39,679.58	\$ 1,044.31	\$ 280,668.87	
November 1, 2021	\$ 280,668.87	\$ 40,723.89	\$ 39,778.01	\$ 945.88	\$ 240,890.86	
December 1, 2021	\$ 240,890.86	\$ 40,723.89	\$ 39,937.51	\$ 786.38	\$ 200,953.34	
February 1, 2022	\$ 200,953.34	\$ 40,723.89	\$ 39,371.25	\$ 1,352.64	\$ 161,582.09	
March 1, 2022	\$ 161,582.09	\$ 40,723.89	\$ 40,230.01	\$ 493.88	\$ 121,352.08	
April 1, 2022	\$ 121,352.08	\$ 40,723.89	\$ 40,312.43	\$ 411.46	\$ 81,039.65	
May 1, 2022	\$ 81,039.65	\$ 40,723.89	\$ 40,456.43	\$ 267.46	\$ 40,583.22	
June 1, 2022	\$ 40,583.22	\$ 40,723.75	\$ 40,583.22	\$ 140.53	\$ 0.00	\$ 407,238.76

WATER SUPPLY CONTINUATION AGREEMENT

BETWEEN

THE MASSACHUSETTS WATER RESOURCES AUTHORITY

AND

THE TOWN OF WAKEFIELD

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

RECITALS

- R.1. The MWRA was created by the Massachusetts legislature in December, 1984 to operate, regulate, finance, and modernize the waterworks and sewerage systems serving the greater metropolitan Boston area. Operating pursuant to the terms of its Enabling Act, chapter 372 of the Acts of 1984 (the “Act”), the MWRA currently provides water supply and distribution services and wastewater collection and treatment services, to certain cities, towns and special service districts (the “Communities”) within its service area.
- R.2. The MWRA desires to continue to provide safe and sufficient water supplies to the Town and to provide system-wide assistance to help protect and conserve water supplies.
- R.3. Section 8(d) of the Act permits the MWRA to enter into an arrangement to provide the continued delivery of water to a Community if specified requirements are met.
- R.4. A regulation entitled “Continuation of Contract Water Supply”, promulgated by the MWRA at 360 C.M.R. 11.00 and most recently revised on November 18, 1994, (the “Regulation”) defines more specifically the requirements of section 8(d) of the Act and governs the continued delivery of water by the MWRA to the Communities which purchase water in accordance with contracts.
- R.5. The Town executed a contract dated May 27, 1954 for the purchase of water from the MDC which contract, because it had no stated termination date, remained in effect on January 1, 1985 and by operation of the Act, was terminated as of January 1, 1990, and was thereafter replaced by a contract (s) which were subject to the terms of the Act.
- R.6. The Town and the MWRA subsequently executed new contracts for the purchase of water from the MWRA in 1990, 1995, and 2005, the latter contract, which by its terms, expired on December 31, 2015.

- R.7 The Town, pursuant to the Regulation, has requested that the MWRA continue to supply water to it and has submitted a continuation request, a Supply Analysis Report, a Demand Analysis Report and a plan for water conservation and demand management pursuant to 11.08.
- R.8 The Town has submitted a description of local user charge systems and accounting systems which meet the Regulation's requirement for conservation based rates. The Town has also affirmed that it has in place a full-cost pricing system.
- R.9 The majority (58%) of the watershed supplying Crystal Lake, the Town's principal local source of drinking water, lies within the Town's municipal limits and the remaining portion (42%) lies within the Town of Stoneham. The Town will draft a water supply protection bylaw for the protection of local sources, and will seek Town Meeting approval for its adoption no later than the May 2018 Annual Town Meeting. Pursuant to 360 C.M.R. 11.08 (4), the Town has committed to engage Stoneham officials in a dialogue regarding the importance of watershed protection for Wakefield's water supply.
- R.10 Based on its review of the submittals described in the recitals numbered R.7. and R.8., MWRA finds that the applicable requirements of section 8(d) of the Act have been met as follows:
- (1) the safe yield of the watershed system as of the date of this contract and as projected for the term hereof, is sufficient to meet the projected demand of the town.
 - (2) no existing or potential water supply source for the Town has been abandoned;
 - (3) effective demand management measures have been developed by the Town;
 - (4) a local water supply source feasible for development has not been identified by either the Town or the Department of Environmental Protection (the "DEP");
 - (5) a water use survey has been completed which identifies all users within the Town that consume in excess of twenty million gallons a year.
- R.11 The Town indicated there is significant available industrial and commercial zoned property available within its borders and desires the ability to accommodate any high water-use industry that might wish to locate to Wakefield.
- R.12. The MWRA and the Town wish to formalize their rights and obligations regarding the supply of water to the Town and therefore enter into this Agreement.

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

1. The term ("Term") of this Agreement shall be ten (10) years beginning on January 1, 2017 and ending at midnight on December 31, 2026.

2. The MWRA shall during the Term provide the Town with water on a maximum annual water volume basis, stated in millions of gallons, as follows:

<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
560	575	590	605	620
<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>	<u>2026</u>
620	620	620	620	620

and if a high-water use industry locates to Wakefield, the maximum annual water volume shall be increased by as much as 0.5 mgd, and up to 4.29 million gallons per day ("mgd") on a maximum daily basis, subject to the hydraulic capabilities of MWRA's distribution system, provided that if prior to implementation of NIH redundancy improvements, Wakefield's withdrawals in excess of 2.25 mgd or 4 mgd on a peak hour at meter 229 coincide with peak withdrawals of other MWRA communities in the NIH, MWRA reserves the right contact Wakefield and to restrict peak maximum day or peak hour withdrawals should problems be encountered.

3. In the event of unusual water demand or supply conditions and upon written notice to the MWRA disclosing and explaining such conditions, MWRA agrees that it will use its best efforts to supply the Town with those quantities of water to meet its legitimate needs in excess of the maximum annual water volumes stated above so as to make up for unexpected shortfalls in the available yield of available local sources.
4. In the event that revised circumstances regarding local demand and/or supply should occur and the Town determines that the volume designated in this Agreement to be supplied from the MWRA system is insufficient to meet the Town's newly projected demand, the Town may petition the MWRA to amend this Agreement pursuant to 360 C.M.R. 11.11.
5. The MWRA shall bill the Town and the Town shall pay to the MWRA charges for all water supplied under this Agreement at the MWRA's applicable prevailing rate(s). All billing procedures, due dates, and interest charges for late payments shall be in accordance with the MWRA's standard policies and procedures.
6. The Town agrees to continue in effect during the Term a user charge system and an accounting system which meets the Regulation's requirement for conservation based rates.
7. The Town agrees that during the Term it shall continue the implementation of its current and proposed local demand management programs, including participation in MWRA conservation programs, and distribution of MWRA-provided materials to all water users.
8. The Town agrees that during the Term it shall not abandon any local source and substitute for it water from MWRA sources unless DEP has declared that the local source is to be or has been abandoned, is unfit for drinking, and cannot be economically restored for drinking purposes.

9. The Town agrees to use its best efforts to implement local source protection measures, including the introduction at Town Meeting 2018 of a Local Source Protection by-law to protect the portion of Crystal Lake that lies within the Town. The Town also agrees to engage in dialogue with officials in Stoneham regarding their cooperation to protect the portion of Crystal Lake's watershed area that is in Stoneham.
10. Any dispute arising between the MWRA and the Town under the terms of this Agreement shall be resolved exclusively in accordance with the dispute resolution process set forth at 360 CMR 11.14 and the administrative procedures set forth at 360 CMR 1.00.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed on this day of December, 2016 by their duly authorized representatives.

MASSACHUSETTS WATER RESOURCES AUTHORITY

By:

Frederick A. Laskey
Executive Director

TOWN OF WAKEFIELD

By:

Richard Stinson
Director of Public Works

Stephen Maio
Town Administrator

WATER SUPPLY CONTINUATION AGREEMENT

BETWEEN

THE MASSACHUSETTS WATER RESOURCES AUTHORITY

AND

THE CITY OF WORCESTER

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

RECITALS

- R.1. The MWRA was created by the Massachusetts legislature in December, 1984 to operate, regulate, finance, and modernize the waterworks and sewerage systems serving the greater metropolitan Boston area. Operating pursuant to the terms of its Enabling Act, chapter 372 of the Acts of 1984 (the "Act"), the MWRA currently provides water supply and distribution services and wastewater collection and treatment services, to certain cities, towns and special service districts (the "Communities") within its service area.
- R.2. The MWRA desires to continue to provide safe and sufficient water supplies to the City and to provide system-wide assistance to help protect and conserve water supplies.
- R.3. Section 8(d) of the Act permits the MWRA to enter into an arrangement to provide the continued delivery of water to a Community if specified requirements are met.
- R.4. A regulation entitled "Continuation of Contract Water Supply," promulgated by the MWRA at 310 C.M.R. 11.00 and most recently revised on November 18, 1994, (the "Regulations") defines more specifically the requirements of section 8(d) of the Act and governs the continued delivery of water by the MWRA to the Communities which purchase water in accordance with contracts.
- R.5. The City executed a contract dated June 5, 1971 for the purchase of water from the MDC. That contract remained in effect on January 1, 1985, was terminated as of June 9, 1991, and was thereafter replaced by contracts which were subject to the terms of the Act.
- R.6. The City subsequently executed new contracts for the purchase of water from the MWRA in 1991 and 1998, the latter contract which, by its term, expired on June 30, 2006.

- R.7 The City's local sources are typically sufficient to meet projected demand. The City does not anticipate using water from MWRA's supplies except during emergencies and for limited pump maintenance and testing for one and one half hours no more than twice per year. The City, though, has the ability to pump MWRA water from the MWRA Quabbin Tunnel at Shaft 3 and from a pumping station at Wachusett Reservoir to augment local sources in emergency situations. Under normal conditions, the City's local sources are also used in certain communities and districts which are not listed in Section 8 (d) of the Act.
- R.8 Worcester's connection to MWRA is at Shaft 3 of the MWRA Quabbin Tunnel, via a Worcester Booster Pumping station that is located on top of MWRA's Shaft. Worcester also has a now inactive connection at Wachusett Reservoir with a pumping station located at South Bay, which was first constructed in 1911 and pumps directly to the City's distribution system via a 30-inch water main. Both connections allow the City to take untreated water from the MWRA.
- R.9 Meters measuring flow of MWRA water to the City include ultrasonic flow meters which are not consistent with MWRA's specifications. Real-time accurate reporting of the City's withdrawals is desired. The City and MWRA are working together to verify the accuracy of the City's meters and to allow these meters to be read on a real-time basis by MWRA. The meter at Wachusett Reservoir Pumping Station is of unknown condition but will be upgraded by the City to meet MWRA specifications prior to use of the station.
- R.10. The City, pursuant to the Regulations, has requested from the MWRA that its water supply be continued and has submitted a continuation request, a Supply Analysis Report, a Demand Analysis Report and a plan for water conservation and demand management pursuant to 310 C.M.R. 11.08.
- R.11. The City has adopted an ordinance for the protection of local sources.
- R.12. The City has submitted a detailed description of local user charge systems and accounting systems which meet the Regulations' requirement for conservation based rates.
- R.13 Based on its review of the submittals described in the recitals numbered R.10., R.11. and R.12., MWRA finds that the requirements of section 8(d) of the Act have been met as follows:
- (1) the safe yield of the watershed system as of the date of this contract and as projected for the term hereof, is sufficient to meet the projected demand of the City;
 - (2) no existing or potential water supply source for the City has been abandoned;
 - (3) effective demand management measures have been developed by the City;
 - (4) a local water supply source feasible for development has not been identified by either the City or the Department of Environmental Protection (the "DEP");
 - (5) a water use survey has been completed which identifies all users within the City that consume in excess of twenty million gallons a year; and

R.14. MWRA and the City wish to formalize their rights and obligations regarding the supply of water to the City and therefore enter into this Agreement.

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

1. The term ("Term") of this Agreement shall be ten (10) years beginning on December 1, 2016 and ending at midnight on November 30, 2026.
2. The City agrees that during the Term it will operate its local water supply system in such a manner so as to make maximum use of local water supply sources.
3. The City and MWRA agree that the City does not anticipate using water from MWRA's supplies on a regular non-emergency basis, based on projected demand and projected supply from local sources. However, for the purpose of pump maintenance and testing, the City does expect to operate pumps at its Shaft 3 pump station and expects to withdraw up to 3 million gallons annually for this purpose. The City shall be allowed to perform maintenance and testing of Shaft 3 and the Aqueduct pump station. The MWRA shall during the Term provide the City with water on an as-needed basis, subject to all other terms and provisions of this Agreement.

In the event of unusual water demand or supply conditions or a declared water supply emergency and upon written notice to the MWRA disclosing and explaining those conditions, MWRA agrees that it will use its best efforts to supply the City with those quantities of water as are necessary to meet its legitimate needs. In that event, the City anticipates that it would require up to 18.5 million gallons per day on a maximum daily water volume basis from Shaft 3 and up to 7.5 million gallons per day on a maximum daily water volume basis from Wachusett Reservoir. These maximum daily water volume withdrawals are based on the historic pumping capacity at each of these stations, and the Parties understand that both stations might not be used concurrently. Prior to activating either shaft station, the City will be in a water restriction mode.

4. Prior to the City taking any water from the MWRA system, the City must request and receive approval from the MWRA's Chief Operating Officer or his designee, and such approval may contain conditions for metering and reporting of withdrawals. The conditions include but are not limited to working with MWRA to verify, to MWRA's reasonable satisfaction, the accuracy of the City's meters measuring emergency water supply withdrawals from MWRA, and daily reporting on the volume of water withdrawn. MWRA's approval may be obtained verbally and shall not be unreasonably withheld. If verbal approval is given, the MWRA will confirm its approval in writing to the City within five working days.
5. In the event that revised circumstances regarding local demand and/or supply

should occur and the City determines that the volume designated in this Agreement to be supplied from the MWRA system is insufficient to meet the City's newly projected demand, the City may petition the MWRA to amend this Agreement pursuant to 360 C.M.R. 11.11.

6. The MWRA shall bill the City and the City shall pay to the MWRA charges for all water supplied under this Agreement at the MWRA's applicable prevailing rate(s). All billing procedures, due dates, and interest charges for late payments shall be in accordance with the MWRA's standard rates, policies and procedures.
7. The premises of the City known as the Shaft 3 Pump Station shall be maintained by the City with sanitary protections and in accordance with DEP guidelines. MWRA shall have the right to enter and inspect the Shaft 3 Pumping Station from which facility MWRA is able to gain access to Shaft 3 of its waterworks system. MWRA agrees that it will attempt to verbally notify the City in advance of the need for such entry, but will notify the City in writing within twenty-four hours after any such entry. Any condition or circumstance which is discovered by MWRA upon such an inspection at the facility which threatens water quality, impedes MWRA's ability to transport or deliver water, or undermines the security or reliable operation of the City waterworks system, shall be promptly corrected by the City if such condition or circumstance has been caused by the City. In the event of the discovery of any emergency conditions affecting Shaft 3 at the facility, MWRA, after notice to the City, reserves the right to effect a repair or correction with MWRA's own personnel, consultants and contractors for which it will seek reimbursement, if appropriate, from the City. Notwithstanding, the MWRA agrees to allow the City a reasonable opportunity to effect any such emergency repair or correction, to the extent feasible under the circumstances.
8. In the event that the City upgrades or substantially modifies its pump station at Shaft 3 of the MWRA Quabbin Tunnel, the City shall work with MWRA to determine if there is an appropriate more permanent meter than the ultrasonic meters now used to measure withdrawals at Shaft 3.
9. Any modifications to the Shaft 3 Pump Station by the City shall require 8(m) permit review by MWRA.
10. The City agrees to continue in effect during the Term a user charge system and an accounting system that meets the Regulation's requirement for conservation based rates.
11. The City shall develop and implement a full cost pricing system within twelve (12) months from the date that all communities listed in section 8(d) of the Act, other than those subject to 360 CMR 11.00, have implemented a full cost pricing system.
12. The City agrees that during the Term it shall continue the implementation of its current and proposed local demand management programs, including participation in MWRA conservation programs, and distribution of MWRA-provided materials to all water users.

13. The City agrees that during the Term it shall not abandon any local source and substitute for it water from MWRA sources unless DEP has declared that the local source is to be or has been abandoned, is unfit for drinking, and cannot be economically restored for drinking purposes.
14. The City agrees to continue in full force and effect during the Term its local Ordinance for the protection of local water sources and to attempt through cooperative steps to have ordinances for the protection of the City's water sources enacted in the communities where sources are located.
15. Any dispute arising between the MWRA and the City under the terms of this Agreement shall be resolved exclusively in accordance with the dispute resolution process set forth at 360 CMR 11.14 and the administrative procedures set forth at 360 CMR 1.00.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed on this day of December, 2016 by their duly authorized representatives.

MASSACHUSETTS WATER RESOURCES AUTHORITY

By:

Frederick A. Laskey
Executive Director

CITY OF WORCESTER

By:

Edward M. Augustus, Jr.
City Manager

Recommended for approval:

Department of Public Works and Parks

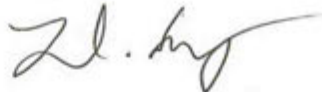
By:

Paul J. Moosey, PE
Commissioner

Approved as to form

Jennifer H. Beaton
Deputy City Solicitor


STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director 
DATE: December 14, 2016
SUBJECT: Wachusett Aqueduct Pumping Station Design, Construction Administration and Resident Inspection Services
Stantec Consulting Services Inc.
Contract 7156, Amendment 3

COMMITTEE: Water Policy & Oversight

INFORMATION
 VOTE

William G. Sullivan, P.E., Sr. Program Manager
A. Navanandan, P.E., Chief Engineer
Preparer/Title

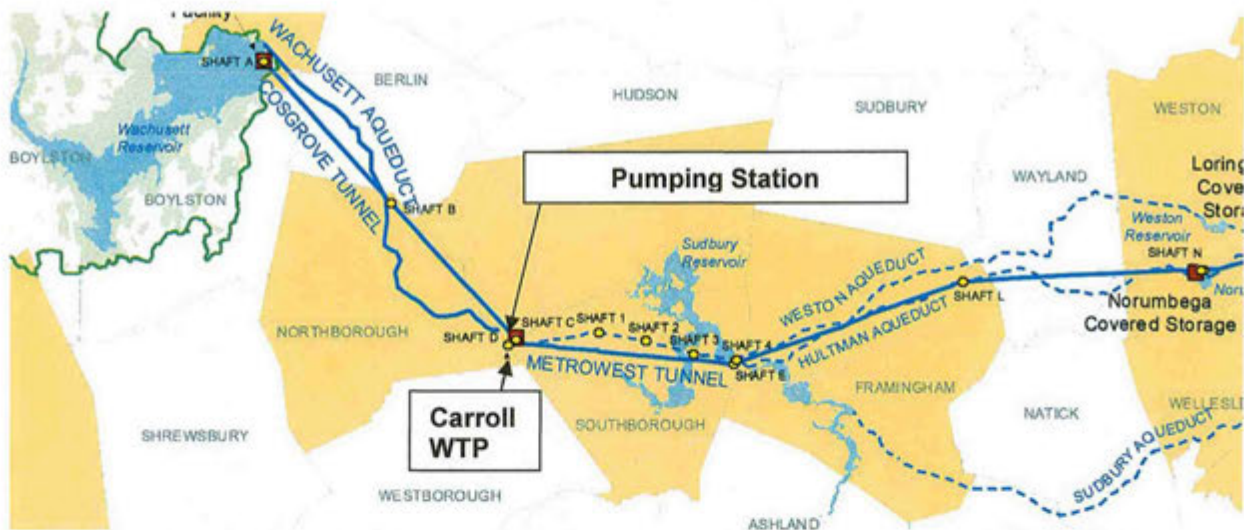

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Amendment 3 to Contract 7156, Wachusett Aqueduct Pumping Station Design, Construction Administration and Resident Inspection Services with Stantec Consulting Services Inc., in the amount of \$349,742.76 increasing the contract amount from \$6,542,240.32 to \$6,891,983.08 with no change in the contract term.

DISCUSSION:

On January 18, 2012, the Board approved the award of Contract 7156, Wachusett Aqueduct Pumping Station Design, Construction Administration and Resident Inspection Services to Fay, Spofford and Thorndike, LLC. Fay Spofford & Thorndike, LLC was subsequently acquired by Stantec Consulting Services Inc. This contract is part of MWRA's long-term redundancy plan for its water transmission system. The pumping station, located adjacent to the John J. Carroll Water Treatment Plant in Marlborough (see location map and artist's rendering on the following page), will address a major weakness in the current redundancy from the Wachusett Reservoir to the Carroll Treatment Plant in Marlborough. When complete, this project will provide redundancy for the Cosgrove Tunnel, currently the sole water supply conduit to the Carroll Treatment Plant.



Location Plan – Wachusett Aqueduct Pumping Station



Rendering – Wachusett Aqueduct Pumping Station

This Amendment

This amendment request is to provide additional funds for new design work identified after the original contract execution. This work is described below.

Change in Support of Excavation

\$161,110.64

The original contract documents specified a secant pile type support of excavation due to the proximity of the excavation to the Forebay and the Wachusett Aqueduct extension pipe. The contractor proposed to substitute a sheet pile support of excavation for the specified secant pile design. Change Order 1 to the Wachusett Aqueduct Pumping Station construction contract incorporated this change and provided a credit to MWRA of \$1.2 million and a 6-month reduction in the contract duration. Stantec attended design development meetings, reviewed the contractor's submittals, furnished full-time resident inspection by a geotechnical engineer, assisted with development of the dewatering plan and reviewed the contractor's design to provide supplemental sheet pile restraint.

Change to the Carroll WTP Front Gate Canopy

\$115,715.28

The Wachusett Aqueduct Pumping Station project includes construction of improvements to the front entrance to the John J. Carroll Water Treatment Plant. These improvements include security gates, a guard house and a canopy. These improvements will be located adjacent to the 16-inch water main that supplies the City of Marlborough. The City reviewed the contract documents prior to bidding and offered no objections. However, following damage to a service line on the 16-inch main during construction, the City suspended work near the 16-inch main. The water main is a critical supply line for Marlborough and damage to the line would cause service interruptions. Redesign efforts were undertaken to minimize possible impacts to the 16-inch water main. This required the preparation of alternative designs for the canopy structure and foundation, geotechnical investigation for the revision to a micropile foundation, redesign of the storm drains in the area, redesign of the telephone duct bank from buried above Marlborough's water main to overhead lines, and meetings with the City.

Change the Photovoltaic System

\$21,486.88

The project includes the installation of a photovoltaic system as part of the Zero Net Energy design of the facility. After award of the construction contract, National Grid required changes to the connection of the photovoltaic system to its electrical grid. The design was changed to utilize the power from the photovoltaic system at the Carroll Plant, which eliminated the export of power from the site. This change required changes to the design of the electrical switchgear and components.

Other Changes

\$51,429.96

Several smaller design changes were identified including the change of the soil disposal location, foundation H-pile installation differences, and the station pipe gallery dehumidification system improvements. Change Order 1 to the Wachusett Aqueduct Pumping Station construction contract included the substitution of disposal of excess excavate at the Carroll Plant Designated Fill Area for the specified off-site disposal. This substitution resulted in a credit to MWRA of \$300,000. Evaluation of the impact of using the Designated Fill Area and obtaining regulatory approval was required. A number of the pumping station foundation H piles deviated from the required alignment. This necessitated the redesign of rebar in the 2-foot thick floor slab that will

be constructed on top of the H piles. Recent operating experience with the Carroll Plant Ultraviolet Room dehumidification system has shown that the as-bid dehumidifiers in the pumping station pipe gallery should be improved. To provide better operation and reliability a different dehumidifier design will be substituted to provide better performance. The dehumidifier redesign will result in a future change order to the construction contract.

This amendment addresses new, out of scope work only. In addition, the Consultant has submitted an amendment request for a significant increase in the level of effort and cost associated with the base work of this project. Staff have requested justification from the consultant for this request and staff will review and evaluate that information before any further amendment is recommended.

CONTRACT SUMMARY:

	<u>AMOUNT</u>	<u>TIME</u>	<u>DATED</u>
Original Contract:	\$4,542,283.24	1,857 Days	2/1/2012

AMENDMENTS:

Amendment 1*	\$231,612.93	0 Days	4/2/2014
Amendment 2	\$1,768,344.15	1,157 Days	7/15/2015
Proposed Amendment 3	<u>\$349,742.76</u>	<u>0 Days</u>	Pending
Adjusted Contract:	\$6,891,983.08	3,014 Days	

*Approved under Delegated Authority

BUDGET/FISCAL IMPACT:

FY17 CIP contains a budget of \$6,542,240.32 for Contract 7156. Including this amendment, the adjusted subphase total will be \$6,891,983.08 or \$349,742.76 over budget. This amount will be covered within the five-year CIP spending cap.

MBE/WBE PARTICIPATION:

The Contractual MBE and WBE participation requirements of 7.59% and 10.10% respectively, remain unchanged by this amendment.

STAFF SUMMARY


TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: December 14, 2016
SUBJECT: Wachusett Aqueduct Pumping Station
BHD/BEC JV 2015, A Joint Venture
Contract 7157, Change Order 5



COMMITTEE: Water Policy and Oversight

INFORMATION
 VOTE

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


Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Change Order 5 to Contract 7157, Wachusett Aqueduct Pumping Station, with BHD/BEC JV 2015, A Joint Venture, for a lump sum amount of \$328,039, increasing the contract amount from \$45,750,217.92 to \$46,078,256.92, with no increase in contract term.

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

DISCUSSION:

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

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

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

This Change Order

The City of Marlborough reviewed the contract documents pre-bid and offered no objections related to construction activities directly adjacent to its 16-inch water main that conveys water from the City of Marlborough Pump Station. The City's water supply system is not operating at full capacity because the Marlborough water treatment and storage facilities are currently off line (unrelated to MWRA construction contract). Therefore, the 16-inch water main now functions as the sole water supply for the City. After commencement of construction, in July 2016, the Contractor damaged a 1-inch service off the main resulting in a temporary isolation of this main and loss of all water supply to the City while the damage was repaired at no additional cost to the Authority. MWRA will reserve its rights to recover any additional costs that may arise from Marlborough out of this July 2016 incident. The work was suspended at the front entrance at the request of Marlborough pending review of construction impacts to the main. Staff met with the City's Department of Public Works on several occasions to re-design the front entrance work to minimize construction impacts to it's water main.



Architectural Rendering of the Canopy and Guardshack



Construction progress of the new Guardshack

Change Order 5 consists of the following four items:

Perform a Soil Boring, Furnish and Install Two Concrete Piers and Pile Cap and Six Micro Piles in Lieu of the Specified Concrete Piers and Footings;
Extend Milestone 1 by 244 days from March 1, 2017 to October 31, 2017 \$257,892

The front entrance canopy was designed to be placed and secured on concrete piers and footings. The concrete piers and footings installation requires excavations extending to about 7 feet below the existing surface grade. Two of the proposed piers and footing are in close proximity (both horizontally and vertically) to the City of Marlborough's 16-inch diameter water main. The

redesign resulted in deletion of the two canopy footings in closest proximity to the water main and replacement with micro-piles. The micro-piles eliminate the conventional open cut and reduce vibration excavation of spread footings as they are installed using drill rigs to bore small diameter cylindrical holes which are then filled with grout and steel reinforcement.

The approved PCO for this item has been identified by MWRA staff as an unforeseen condition. MWRA staff, the Consultant, and the Contractor have agreed to a lump sum amount of \$257,892 for this additional work and extend the internal milestone 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.

Revise the Location of the Proposed Drainage System \$41,465

The front entrance work included an underground duct-bank and front entrance drainage improvements in close proximity to Marlborough's 16-inch diameter water main. Specifically, the July 2016 incident occurred while excavating for a proposed catch basin structure adjacent to the water main; further a 12-inch reinforced concrete pipe drain line connecting to this catch basin was specified to cross over the water main. Post incident, the City required the drainage improvements to be re-designed to eliminate crossing over their main and relocation of structures away from their main.

The approved PCO for this item has been identified by MWRA staff as an unforeseen condition. MWRA staff, the Consultant, and the Contractor have agreed to a lump sum amount of \$41,465 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.

Establish a Temporary 24-foot Driveway for Winter Access \$37,521

Due to the suspension of work at the front entrance pending re-design of utilities, it was necessary to remove the temporary access roadway into Carroll Water Treatment Plant and re-establish the pre-construction driveway alignment for winter access. The contract requires a temporary roadway with a wide sweep around the work zone to construct the front entrance improvements. The wide sweep makes snow removal for chemical deliveries difficult. Removal of the temporary access road and re-establishing the pre-construction driveway alignment allows safe passage of chemical deliveries through the winter months. The Contractor will remove the winter access road after March 15, 2017.

The approved PCO for this item has been identified by MWRA staff as an unforeseen condition. MWRA staff, the Consultant, and the Contractor have agreed to a lump sum amount of \$37,521 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.

Delete the Requirement to Furnish and Install an Electrical and Telephone Duct Bank from Existing Utility Pole UP5 to existing Utility Pole B (\$8,839)

The route of the proposed underground electrical and Verizon duct banks will cross over the existing 16-inch diameter water main. The Verizon duct bank crosses City of Marlborough property. Verizon requested an easement for its underground duct bank from the City of Marlborough. The City will not act on the easement request until the water main crossing concerns are addressed. The revised design eliminates the underground duct banks and relocates the wires overhead on existing utility poles.

The approved PCO for this item has been identified by MWRA staff as an unforeseen condition. MWRA staff, the Consultant, and the Contractor have agreed to a lump sum credit amount of (\$8,839) for this additional work with no increase in contract term.

CONTRACT SUMMARY:

	<u>Amount</u>	<u>Time</u>	<u>Dated</u>
Original Contract:	\$47,011,000.00	1,260 Days	03/01/16
Change Orders:			
Change Order 1*	(\$1,500,000.00)	(180) Days	07/25/16
Change Order 2*	\$14,766.00	0 Days	10/26/16
Change Order 3*	\$24,822.00	0 Days	11/16/16
Change Order 4*	\$199,629.92	0 Days	Pending
Change Order 5	\$328,039.00	0 Days	Pending
Total of Change Orders:	(\$932,743.08)	(180) Days	
Adjusted Contract:	\$46,078,256.92	1,080 Days	

*Approved under delegated authority

If Change Order 5 is approved, the cumulative total value of all change orders to this contract will be (\$932,743.08) or (1.98%) of the original contract amount. Work on this contract is 23% complete.

BUDGET/FISCAL IMPACT:

The FY17 CIP includes a budget of \$45,511,000 for Contract 7157. Including this change order for a lump sum amount of \$328,039, the adjusted sub phase total will be \$46,078,256.92 or \$567,256.92 over budget. This will be covered within the five-year CIP Spending Cap.

MBE/WBE PARTICIPATION:

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



MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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

PERSONNEL & COMPENSATION COMMITTEE

to be held on

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

Wednesday, December 14, 2016

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

Time: Immediately following Water Committee

AGENDA

A. Approvals

1. PCR Amendments – December 2016
2. Appointment, Program Manager Security/Safety

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the
Personnel and Compensation Committee

November 16, 2016

A meeting of the Personnel and Compensation Committee was held on November 16, 2016 at the Authority headquarters in Charlestown. Chair Wolowicz presided. Present from the Board were Messrs. Blackmon, Carroll, Cotter, Pappastergion, Peña, Vitale and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Michele Gillen, Karen Gay-Valente, and Bonnie Hale. The meeting was called to order at 12:05 p.m.

Approvals

*PCR Amendments – November 2016

The Committee recommended approval of amendments to the Position Control Register (ref. agenda item A.1).

*Appointment of Security Services Administrator, Office of Emergency Preparedness

The Committee recommended approval of the appointment of Ms. Kathryn White (ref. agenda item A.2).

*Appointment of Network Administrator III, MIS

The Committee recommended approval of the appointment of Mr. Seolito Rodriguez (ref. agenda item A.3).

The meeting adjourned at 12:10 p.m.

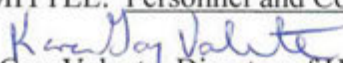
* Approved as recommended at November 16, 2016 Board of Directors meeting.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: December 14, 2016
SUBJECT: December PCR Amendments



COMMITTEE: Personnel and Compensation


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

 INFORMATION

 X VOTE


Michele S. Gillen
Director, Administration

RECOMMENDATION:

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

DISCUSSION:

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

December PCR Amendment

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

The amendment is:

1. Title and grade change to a vacant position in the MIS Department, IS Project Leader, DITP Systems, Unit 6, Grade 10, to a Business Systems Analyst III, Unit 6, Grade 12, to address staffing needs in the department.

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

BUDGET/FISCAL IMPACT:

The annualized budget impact of this PCR amendment is a savings of \$17,375 to a cost of \$17,375 depending on the individual selected for the vacant position upon the completion of the hiring processes. Staff will ensure that any cost increase associated with this PCR amendment will not result in spending over the approved FY17 Wages and Salary budget.

ATTACHMENTS:

New/Old Job Descriptions

MASSACHUSETTS WATER RESOURCES AUTHORITY
 POSITION CONTROL REGISTER AMENDMENTS
 FISCAL YEAR 2017

PCR AMENDMENTS REQUIRING PERSONNEL & COMPENSATION COMMITTEE APPROVAL - December 14, 2016

Number	PCR #	V/F	Type	Current Title	UN	GR	Amended Title	UN	GR	Salary	New Salary	\$ Impact	For Amendment
PERSONNEL & COMP COMMITTEE TOTAL=					0		SUBTOTAL:					\$0 - \$0	

PCR AMENDMENTS REQUIRING BOARD APPROVAL- December 2016

Number	Current PCR #	V/F	Type	Current Title	UN	GR	Amended Title	UN	GR	Current/Budget Salary	Estimated New Salary	Estimated Annual \$ Impact	Reason For Amendment
B24	Administration MIS 8610078	V	T,G	IS Project Leader, DITP Systems	6	10	Business Systems Analyst III	6	12	\$88,883	\$71,508 - \$106,258	-\$17,375 - \$17,375	To meet current staffing needs in the MIS Department, Administration Division
BOARD TOTAL =					1		SUBTOTAL:					-\$17,375 - \$17,375	
GRAND TOTAL =					1		TOTAL ESTIMATED COSTS:					-\$17,375 - \$17,375	

MWRA
POSITION DESCRIPTION

OLD

POSITION: IS Project Leader, DITP Systems

PCR#:

DIVISION: Administration & Finance

DEPARTMENT: MIS

BASIC PURPOSE:

Performs Technical Support Analyst role for the Authority's PC users. Provides back-up and first level of systems management support for disaster recovery resources hosted at DITP.

SUPERVISION RECEIVED:

Works under the general supervision of the Information Center Manager and the Network & Systems Manager.

SUPERVISION EXERCISED:

None

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Configures, tests and installs microcomputer hardware, software, and peripheral products for the MWRA.
- Performs user orientation upon installation and provides continuing hands-on and telephone support services to the MWRA users.
- Investigates, diagnoses, tests and resolves a wide variety of microcomputer hardware, peripheral device and software problems reported by users through the Helpline or other sources.
- Leads or participates on microcomputer hardware, software, network, or peripheral device project teams to assist MWRA users with introduction to new or modified microcomputer environments.
- Documents the assembly, configuration, set-up and installation features of each system type for inclusion in the configuration management inventory data base.

- Updates and maintains the configuration management inventory data base for all microcomputer hardware, software peripheral devices or products used in problem resolution.
- Performs first level system management functions for Open-VMS, UNIX and assigned NT/2000/03 systems and client server configurations.
- Performs system back-ups, console operations and other related duties for disaster recovery resources.
- Optimizes available resources through management of shared resources, monitoring of system performance and reviewing system utilization.
- Operates and monitors a variety of computer equipment and systems, to ensure maximum performance and availability including MPFlix, VMS, NT/2000 and UNIX Operating Systems; file and mail servers; laser, and full-size impact printers; tape drives and libraries; and a variety of environmental and peripheral equipment.
- Assist in the development and maintenance of SOPs for disaster recovery resources.
- Shares in on-call and emergency response tasks for Deer Island.

SECONDARY DUTIES:

Perform related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A four (4) year program in computer science or related field; and
- (B) Four (4) to six (6) years experience in technical support in a large customer/user support environment; or
- (C) Any equivalent combination of education and/or experience. -

Necessary Knowledge, Skills and Abilities:

- (A) Skills in microcomputer hardware, peripheral and software operation.
- (B) Demonstrated ability to troubleshoot, diagnose and resolve PC hardware, software and peripheral device problems.
- (C) Technical knowledge of and demonstrated experience with UNIX systems and Microsoft Server Operating System.
- (D) Excellent analytical, interpersonal, written and oral communication skills are required. (E)

Proficiency with the following is required:

- a.) Operating System/Environments: Microsoft Windows NT/2000/XP, Mac OS X.
- b.) Desktop Productivity Software: Microsoft Office 2000 Professional.
- c.) Groupware/Messaging Software: Microsoft Exchange and Internet Explorer.
- d.) Graphics/Presentation Software: Coral Draw, Canvas, or PowerPoint.
- e.) Hardware Environment: IIP/Compaq PCs, IIP printers, and various peripherals (scanners, CD-RWs, modems).
- f.) Network: Ethernet and TCP/IP concepts; and Windows 2000 products.

SPECIAL REQUIREMENTS:

A+ or similar industry standard certification and MCO certification are required. MCSE is preferred but passage of at least 2 of the 7 required exams is required prior to completing the first six (6) months of employment (new employees and promotions). IIP UNIX Systems Administer certification.

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 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 stand and talk or hear. The employee is occasionally required to walk; sit; climb or balance; stoop, kneel, 'crouch, or crawl; taste or smell.

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

WORK ENVIRONMENT:

The work 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 various field settings and in an office environment. The employee regularly works near moving mechanical parts, and is occasionally exposed to risk of vibration. The employee is occasionally exposed to risk of electrical shock.

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



MWRA
POSITION DESCRIPTION

POSITION: Business Systems Analyst III
PCR#:
DIVISION: Administration
DEPARTMENT: Management Information System (MIS)

BASIC PURPOSE:

The Business Systems Analyst III works with business unit staff to understand business processes and to document and prioritize user requirements and functional specifications for new and existing systems that support the organizational needs. Serves as the conduit between the development team and the rest of the organization. Facilitates communications to expeditiously translate business requirements to help develop technical specifications as well as translate technical specification into language accessible to user and management audiences. Communicates and consults with end users or management to provide information regarding the costs and ramifications of the decisions made.

Evaluates MWRA application and business workflows, identifies improvements, documents requirements, prototyping, quality assurance and makes recommendations on how business processes can be improved through better implementation of technology. Identifies stake holders and develops Requirements Development Work Plans.

In addition, the Business Systems Analyst III will serve as Business Systems Analyst team lead and will update and maintain Business Systems Analysis specific project plans and schedules.

SUPERVISION RECEIVED:

Works under the general supervision of the Manager II, Business Systems Analysis

SUPERVISION EXERCISED:

Exercises supervision of assigned vendor resources and IT project team.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Use proven business analysis methodologies and elicitation techniques to:

- Gather and document business, functional and technical requirements from business leaders, end users, and vendors for new and upgraded software applications (in-house and third party software).
 - Document project scope and vision documents.
- Support Quality Assurance/Quality Control activities including developing functional and user test acceptance test plans in conjunction with IT and user stakeholders.
- Research new approaches to improve business and system processes and develop reports and/or proposals for new or enhanced solutions.
- Identify and document documents gaps between the current as-is and recommended to-be processes.
- Collaborate with IT Department engineering staff contractors and vendors to support development of technical specification for appropriate system infrastructure hardware and software.
- Research, design, and test interfaces between existing and new system applications and platforms to produce seamless integration that complies with business requirements.
- Maintain professional interaction with the IT staff and user community to ensure adequate system functionality, promote team participation and encourage user confidence in the applications staff quality of service.
- Develop and maintains design documentation, report requirements and test plans of applications throughout the design process.
- Support user acceptance testing and release management activities.
- Coordinate vendor access and resources as assigned.
- Documents and communicates issues and risks.
- Develops and maintains Business Systems Analyst functional unit's business continuity documentation as appropriate.
- Maintains professional interaction with the Business Systems Analyst staff, user and extended IT community (i.e. project teams) to ensure adequate system functionality, promotes team participation and encourages user confidence in the IT Department's quality of service.
- Conducts stakeholder analyses by gathering and assessing information to determine whose interests should be taken into account for each project. Based on this analysis, identifies the stake holders for each project.

- Develops Requirements Work Plan.
- Manages Issue & Risk Lists as assigned.
- Coordinates project team testing and user acceptance testing for assigned projects ensuring testing is formalized, adheres to department standards and best practices.

SECONDARY DUTIES:

Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) A four (4) year college program in management science, engineering management, computer science or related fields; and
- (B) Five (5) to seven (7) years experience gathering functional requirements, analyzing and accurately documenting requirements specifications, workflow diagrams, data flow diagrams, etc. to effectively communicate needs to internal and external development teams and/or developing and testing prototypes.
- (C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- A) Formal training or certification on methodologies/frameworks for business systems analysis, project management, software development and IT Service Management such as:
 - Rapid Application Development SDLC methodologies such as Agile.
 - Project Management concepts and tools.
- (B) Analytical and interpersonal skills.
- (C) Written and oral communication skills.
- (D) Knowledge of the following is desirable: MS Project, MS Visio, MS .Net, J2EE, Crystal Reporting, ORACLE, SQL Server and PL/SQL.

SPECIAL REQUIREMENTS:

Information Technology Infrastructure Library (ITIL) Foundation Certification is required or the ability to obtain within 6 months.

International Institute of Business Analysis (IIBA) Certification or formal IIBA Training or the ability to obtain within one year.

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 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 and stand.

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

WORK ENVIRONMENT:

The work 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 various field settings and in an office environment. The employee regularly works near moving mechanical parts, and is occasionally exposed to risk of vibration.

The noise level in the work environment is very loud in field settings, moderately loud at other work locations and moderately quiet at office settings.

December 2016

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: December 14, 2016
SUBJECT: Appointment of Program Manager Security/Safety



COMMITTEE: Personnel & Compensation

 INFORMATION
 X VOTE

Andrew Hildick-Smith, Director, Emergency Planning & Preparedness

Karen Gay-Valente, Director of Human Resources

Preparer/Title



RECOMMENDATION:

To approve the appointment of Joseph Bibbo to the position of Program Manager, Security/Safety (Unit 9, Grade 29), at an annual salary of \$106,994.68 commencing on a date to be determined by the Executive Director.

DISCUSSION:

The Program Manager, Security/Safety reports directly to the Director, Emergency Planning and Preparedness. The position manages the volunteer Emergency Services Unit for Site Characterization in response to a drinking water contamination event. More broadly it manages security and safety programs in support of MWRA operations including the development and maintenance of emergency preparedness and response documents. The position became vacant when the previous incumbent laterally transferred within the MWRA.

Selection Process:

The position was posted internally. Three candidates were referred for interviews. Each candidate was interviewed by the Director, Emergency Planning and Preparedness, the Manager, SCADA and Process Control and a representative from MWRA's Affirmative Action and Compliance Unit. At the conclusion of the interviews, Mr. Bibbo was recommended for selection as the best candidate for the position based on qualifications and experience.

Mr. Bibbo is an excellent candidate. He has 28 years of experience with safety, security, emergency preparedness and the assessment of environmental hazards. In 1986 Mr. Bibbo worked for a year as an Environmental Analyst in private industry sampling for contaminants. He then worked for two years as an Environmental Engineer doing wetlands site evaluations. Mr. Bibbo began working at the MWRA in 1989 and has assumed positions of increasing levels of responsibility since that time. Mr. Bibbo began working in TRAC for his first nine years, where he had roles as a Senior Sampling

Associate, Project Manager, and Sampling Coordinator. He performed sampling, supervised sampling, prepared NPDES reports and drafted SOPs and facility safety plans. After that Mr. Bibbo worked for eight years as a Project Manager in Process Control and is now in Wastewater Operations. During this time his work included managing the Union Park contract, leading the effort on emergency preparedness for hurricane flooding, drafting SOPs, and establishing procedures for safe handling of hydrogen Peroxide.

Mr. Bibbo has been actively involved with the Emergency Services Unit for site characterization for the past ten years. Other coursework completed by Mr. Bibbo that will assist him in this position are the OSHA 40-hour Hazardous Waste Operations and Emergency Response Standards class and the US EPA Air Monitoring for Hazardous Materials class. He also has Incident Command System certifications for ICS-100, 200, 300, 400 and NIMS-700, a Wastewater Operator Grade 6C license and a Wastewater System Grade IV Collections certification. Mr. Bibbo has a Bachelor in Science degree in biology with a minor in chemistry.

Additionally, Mr. Bibbo also has thirteen years of part-time experience in security and public safety as a Deputy with the Middlesex Sheriff's Office, supervising a staff of 18. Mr. Bibbo's experience and education, combined with safety training roles in confined space entry and Right-To-Know, provide him an excellent background to manage the Emergency Services Unit as well as to work on security, safety and emergency preparedness programs.

BUDGET/FISCAL IMPACT:

There are sufficient funds for this position in the FY17 Current Expense Budget.

ATTACHMENTS:

Resume of Joseph Bibbo
Position Description
Organization Chart

Joseph R. Bibbo

EMPLOYMENT

Massachusetts Water Resource Authority, Boston, MA.

04/13-Present

Acting Program Manager/ Project Manager, Wastewater Operations

Work on various projects assigned by the Deputy Chief Operating Officer, Director WW Ops & Maint, and Manager, SCADA, Process Control. Performed investigation into saltwater intrusion into the south sewer system. Developing and implementing plans for hurricane protection for all affected coastal wastewater facilities. Managing installation of flood protection systems for sixteen (16) MWRA facilities to ensure flood protection under FEMA flood water ratings. Draft contracts for service and construction for water distribution system. Manage Consultants in project design and implementation. Current lead member of MWRA ESU Team to respond to water and wastewater emergencies.

Middlesex Sheriff's Office

6/01 – 8/14
(part time)

Commissioned Deputy, Rank Lieutenant

Worked part time for the Middlesex Sheriff managing 18 subordinate staff providing law enforcement operational support, public safety and security for community events. Provided law enforcement mutual aid for communities within Middlesex County. Provided leadership, support and training for all deputies under my command to ensure staff and public safety while upholding to the highest standards of the Middlesex Sheriff's Office. Trained staff in traffic control, public safety, use of force, and defensive tactics.

Massachusetts Water Resource Authority, Boston, MA

07/08 – 04/13

Project Manager, Process Control & Project Support, Wastewater Operations

Perform planning, design and construction administrative services for various operations and maintenance projects and programs within Wastewater Operations. Manage Task Order projects for design and investigative work within the Pump Stations, CSO Facilities, and Headworks Facilities. Work in conjunction with CSO group, Wastewater Pumping group and Headworks group in developing standard operating procedures (SOPs) regarding equipment and facility operation. Train staff on SOPs. Troubleshoot and solve critical facility issues. Monitor status of Wastewater facilities through SCADA and PI. Liaison to the management of wastewater construction projects, perform design, procure equipment. Manage \$3 MIL Union Park PS/CSO contract. Respond to wastewater emergencies and any CSO issues. Prepare monthly NPDES reports and provide data for the MWRA Yellow and Orange Notebook. Team member in MWRA's Emergency Service Unit.

11/02 – 07/08

Sampling Coordinator, Wastewater Operations

Work in conjunction with CSO group, Technical Inspections group, Wastewater Pumping group and Headworks group in developing standard operating procedures (SOPs) regarding equipment and facility operation. Train staff on SOPs. Troubleshoot and solve critical facility issues. Manage wastewater construction projects, perform design, procure equipment, and manage staff. Liaison to the TRAC group, manage all CSO NPDES wastewater sampling to ensure compliance is met with EPA permit. Respond to wastewater emergencies and any CSO issues. Prepare monthly NPDES reports and provide data for the MWRA Yellow and Orange Notebook. Report directly to the Director of Wastewater on key projects. Active member of the MWRA Emergency Service Unit.

5/97 - 11/02

Sampling Coordinator, Toxic Reduction and Control (TRAC)

Managed monitoring projects in TRAC and ensured quality control of work. Coordinated work with MWRA's laboratory. Implemented Monitoring program and policies. Utilized TRACS' information systems, which include LIMS, PSI, and TRAC IS. Developed policies and procedures for staff. Coordinated Monitoring staff for special sampling projects and sampling activities requested by other departments and agencies. Drafted SOPs and Local Safety Plans for operational duties and emergency response. Trained staff in proper monitoring flow measuring, and safety protocols. Demonstrated and procured operational and safety equipment for TRAC staff. Acted as TRAC's On-Call Manager and MWRA's Incident Commander to respond to emergencies.

Joseph R. Bibbo

10/94 - 5/97

Project Manager, TRAC

Managed monitoring projects in TRAC including the direct supervision of 17 professional staff and ensured quality control of fieldwork. Coordinated work with MWRA's laboratory. Implemented Monitoring Program, policies and SOP's. Utilized TRAC's information systems, which included LIMS, PSI and TRAC IS. Developed policies and procedures for staff. Coordinated Monitoring staff and participated in responding to emergency spills and releases. Coordinated sampling activities requested by other departments and agencies. Supervised staff in proper monitoring and safety protocols.

4/94 - 10/94

and

10/90 - 10/93

Senior Sampling Associate

Provided leadership and oversight of wastewater monitoring in the Industrial Pretreatment Program. Supervised sampling staff. Assumed lead roles in special projects. Acted as mediator between sampling staff and managers. Inspected industry sample locations and performed industrial self-monitoring audits. Provided pertinent information for Inspections, Compliance, Permitting and Legal staff for TRAC.

10/93 - 4/94

Acting Industrial Waste Inspector

Inspected pretreatment systems of industrial waste dischargers. Inspected industrial records including but not limited to hazardous waste manifests, material safety data sheets, records of flow and wastewater pretreatment. Report in writing of all inspections performed.

11/89 - 10/90

Sampling Associate

Monitoring of industrial waste discharges which included: collection of wastewater samples, use of Sigma and ISCO automated sampling equipment and use of Sigma and ISCO flow measuring/recording devices. Prepared weekly reports which detailed sampling events. Performed oil/grease trap and municipal sewage monitoring.

One Stop Consolidated Services, Waltham, MA

5/81 - 6/86

and

6/87 - 11/89

Environmental Engineer

Performed job site investigations to determine environmental impact. Supervision of field crews for locating existing wetland boundaries, topographical view of terrain and exploration of soils. Prepared plans for local Conservation Commission, Board of Health and Department of Environmental Protection. Designed and managed the construction of local municipal collection and distribution systems, on-site sewage disposal systems and surface drainage systems. Performed land surveys with Topcon 3B Theodolite. Managed the construction of single and multi-family dwellings.

Jet-Line Services, Lowell, MA

6/86 - 6/87

Environmental Analyst

Retrieved multimedia samples for analysis. Analyzed samples for contaminants utilizing atomic absorption spectroscopy and gas chromatography. Supervised and participated in the Department of Environmental Protection laboratory certification tests. Completion of hazardous waste manifests and assisted in determining the destination of hazardous wastes.

EDUCATION

Suffolk University, Boston, MA

Bachelor of Science Degree, 1986

Major: Biology Minor: Chemistry

Massachusetts Criminal Justice Training Council 120 Hour Intermittent Police Academy Certified

LICENSES/ CERTIFICATES/ TRAINING

Licensed Wastewater Operators Grade 6C, Commonwealth of Massachusetts
Wastewater Systems Grade IV Collections License
Water Environmental Federation Operation & Maintenance of Collection Systems Certified
OSHA 40-Hour HAZWOPER
Board of Certified Safety Professional - Certification Eligible, Verified
Incident Commander 100, 200, 300, 400, 700 Certified
Licensed Construction Supervisor, Commonwealth of Massachusetts

Reliability Centered Maintenance Trained
California State Univ. Pretreatment Facility Inspection Certified
Commonwealth of Massachusetts Roadway Flagger Certified
US EPA Air Monitoring for Hazardous Materials Certified
Blood Borne Pathogen Certified
Former Confined Space Entry/Lead Instructor
MWRA Incident Investigation Trained
Graduate of MWRA's Leadership Institute
Lieutenant (Ret.), Middlesex Sheriff's Office
Municipal Police Training Council Firearms Instructor
First Responder/CPR Professional Rescuer

**MWRA
POSITION DESCRIPTION**

POSITION: Program Manager, Security/Safety

DIVISION: Office of Executive Director

DEPARTMENT: Office of Emergency Preparedness

BASIC PURPOSE:

Develops and manages security and safety programs which support Authority operations.

SUPERVISION RECEIVED:

Works under the general supervision of the Director, Office of Emergency Preparedness

SUPERVISION EXERCISED:

Emergency Services Unit volunteers.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Identifies, develops and manages security and safety programs for the Authority, based on the operational needs of the organization.
- Drafts, revises and publishes written security and safety programs and plans consistent with regulatory and industry standards.
- Supports in-house technical staff in the implementation of security and safety programs, including reviewing plans and developing strategy and audit protocols.
- Manages the Emergency Services Unit Team to insure response readiness through documentation, training, drills and equipment maintenance; and leads the team in actual responses.
- Oversees the work of professional consultants under contract to the Authority, including quality of output and budget.
- Develops and maintains emergency preparedness and response documents.
- Develops meaningful management indicators for use by senior managers.
- Recommends Authority policy regarding security sensitive and occupational safety and

health issues.

- Serves as technical consultant to senior management on issues relevant to security and occupational safety and health.
- Assists in the development of both departmental and Authority-wide APPOs and budgets related to the security and safety functions.
- Provides professional opinions to law, labor relations and risk management, including testifying as an expert witness.
- Represents the executive office in the investigation of serious or potentially serious accidents or security incidents.
- Interprets technical data provided by outside technical professionals.
- Serves as a technical advisor to the Security Task Force.

SECONDARY DUTIES:

- Participates in weekend/off-hours on-call coverage for OEP as part of a weekly coverage rotation.
- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

- (A) Knowledge of the principles and practices of a safety professional as normally attained through a graduate degree in science, engineering or related field; and
- (B) Knowledge of chemistry/biology as it relates to public health issues and hazardous materials incidents as gained through experience and education; and
- (C) Understanding of issues related to safety, emergency response, risk management, environmental health, behavioral and applied sciences as normally attained through five (5) to seven (7) years experience; or
- (D) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

- (A) Excellent interpersonal, oral and written communication skills.

SPECIAL REQUIREMENTS:

A valid Massachusetts Class D Motor Vehicle Operators License.

Certification by the Board of Certified Safety Professionals or the American Board of Industrial Hygiene, or current eligibility for certification.

24-hour HazMat Technician or higher level emergency response training certification.

Incident Command ICS 700, 100, 200 and 300 certification, within 6 months of appointment.

Trained and experienced in confined space entry.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

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

WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee regularly works in an office environment. The employee occasionally works in outside weather conditions. The employee is occasionally in environments with fumes and airborne particles, toxic or caustic chemicals, and risk of electric shock.

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

Office of Emergency Preparedness

December 14, 2016





MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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

BOARD OF DIRECTORS' MEETING

to be held on

Wednesday, December 14, 2016

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

Time: 1:00 p.m.

AGENDA

- I. APPROVAL OF MINUTES
- II. REPORT OF THE CHAIR
- III. REPORT OF THE EXECUTIVE DIRECTOR
- IV. BOARD ACTIONS

A. Approvals

1. Transmittal of the FY18 Proposed Capital Improvement Program to the MWRA Advisory Board (ref. AF&A B.1)
2. Memorandum of Understanding and Financial Assistance Agreement with the City of Cambridge for Implementation of CSO Control Projects, Amendment 13 and Progress of Cambridge Implemented CSO Projects and Financial Assistance through March 2017 (ref. WW A.1)
3. Financial Assistance Agreement with BWSC for Implementation of CSO Control Projects, Amendment 16 (ref. WW A.2)
4. Water Supply Contract Renewals - Southborough, Stoughton, Wakefield, and Worcester (ref. W A.1)
5. PCR Amendments – December 2016 (ref. P&C A.1)
6. Appointment, Program Manager Security/Safety (ref. P&C A.1)

B. Contract Awards

1. Janitorial Services at the Chelsea Facility: SJ Services, Inc., Contract WRA-4302Q (ref. AF&A C.1)
2. Management, Operation and Maintenance of the Union Park Pump Station/CSO Facility and the Unmanned Stations, Woodard & Curran, Inc., Contract S559 (ref. WW B.1)
3. Sewer Sections 4, 5, 6 and 186 Study: Hazen and Sawyer, Contract 7423 (ref. WW B.2)
4. Janitorial Services at the Deer Island Treatment Plant: Star Building Services, Inc., Contract WRA 4303Q (ref. WW B.3)
5. Deer Island Treatment Plant Motor Control Center and Switchgear Replacement Design, Engineering Services During Construction and Resident Engineering/ Inspection Services: AECOM, Contract 7419 (ref. WWj B.4)
6. Deer Island Treatment Plant Personnel Dock Rehabilitation: Coastal Marine Construction, Contract 7168 (ref. WW B.5)

C. Contract Amendments/Change Orders

1. Assignment and Assumption of Contract EXE-033 Security Guard Services for Various MWRA Facilities from AlliedBarton Security Services, Inc. to Universal Protection Service, LLC d/b/a Allied Universal Security Services; and Contract EXE-033, Amendment 1 (ref. AF&A D.1)
2. Wachusett Aqueduct Pumping Station Design, Construction Administration and Resident Inspection Services: Stantec Consulting Services, Inc., Contract 7156, Amendment 3 (ref. W B.1)
3. Wachusett Aqueduct Pumping Station: BHD/BEC JV 2015, Joint Venture, Contract 7157, Change Order 5 (ref. W B.2)

V. CORRESPONDENCE TO THE BOARD

VI. OTHER BUSINESS

VII. EXECUTIVE SESSION

A. Litigation:

1. Claim of Daniel O'Connell's Sons

B. Security:

1. Wachusett Reservoir Railroad

VIII. ADJOURNMENT

Meeting of the Board of Directors**November 16, 2016**

A meeting of the Board of Directors of the Massachusetts Water Resources Authority was held on November 16, 2016 at the Authority headquarters in Charlestown. Chairman Beaton presided. Present from the Board were Ms. Wolowicz and Messrs. Blackmon, Carroll, Cotter, Pappastergion, Peña, Vitale, and Walsh; Messrs. Flanagan and Foti were absent. Among those present from the Authority staff were Frederick Laskey, Executive Director, Steven Remsberg, General Counsel, Michael Hornbrook, Chief Operating Officer, Thomas Durkin, Director of Finance, Michele Gillen, Director of Administration, Stephen Estes-Smargiassi, Director of Planning and Sustainability, Kristen Patneaude, Program Manager, Energy Management, and Bonnie Hale, Assistant Secretary. The meeting was called to order at 1:10 p.m.

APPROVAL OF MINUTES

Upon a motion duly made and seconded, it was

Voted to approve the minutes of the Board of Directors' meetings of October 6, 2016 and October 12, 2016, as presented and filed with the records of the meeting.

REPORT OF THE CHAIRMAN

Chairman Beaton noted that while hiking with his family he happened upon a very informative program put on by the Department of Conservation and Recreation on Sunday mornings entitled "The History of Fishing in the Wachusett Reservoir" and recommended it to others.

REPORT OF THE EXECUTIVE DIRECTOR

Mr. Laskey reported on various matters, including: a meeting on tunnel redundancy being hosted by the MWRA Advisory Board on December 8 at Boston College; a valuable and instructive training session held on trench safety; congratulations to the TRAC Division on the receipt of the 2016 Regional Industrial Pretreatment Program Excellence Award from the EPA; and a study by the American Investment Council ranking the MWRA Retirement Board seventh nation-wide.

BOARD ACTIONS

APPROVALS

Approval of the Seventy-Fourth Supplemental Bond Resolution

Upon a motion duly made and seconded, it was

Voted to adopt the Seventy-Fourth Supplemental Resolution authorizing the issuance of up to \$55,000,000 of Massachusetts Water Resources Authority Subordinated General Revenue Bonds and the supporting issuance resolution, as presented and filed with the records of the meeting.

Emergency Water Supply Agreement with Cherry Valley and Rochdale Water District

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to execute a six-month Emergency Water Supply Agreement with the Cherry Valley and Rochdale Water District, substantially in the form presented and filed with the records of the meeting.

PCR Amendments – November 2016

Upon a motion duly made and seconded, it was

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

Appointment of Security Services Administrator, Office of Emergency Preparedness

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Ms. Kathryn White to the position of Security Services Administrator (Unit 6, Grade 10), at an annual salary of \$93,643.72 to be effective on the date designated by the Executive Director.

Appointment of Network Administrator III, MIS

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. Seolito Rodriguez to the position of Network Administrator III (Unit 6, Grade 12), in the MIS Department, at an annual salary of \$98,167.50 to be effective on the date designated by the Executive Director.

CONTRACT AWARDS

Security Equipment Maintenance and Repair Services: Viscom Systems, Inc., Contract EXE-038

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to approve the award of Contract EXE-038, Security Equipment Maintenance and Repair Services, to the lowest responsible and eligible bidder, Viscom Systems, Inc., and to execute and deliver said contract in the bid amount of \$1,874,705.20 for a term of 1,095 calendar days from the Notice to Proceed.

Harbor and Outfall Monitoring 2017-2020: Water Column Monitoring, Battelle Memorial Institute, Contract OP-326A; and Benthic, Fish and Shellfish Monitoring, Normandeau Associates, Inc., Contract OP-326B

Upon a motion duly made and seconded, it was

Voted to approve the recommendation of the Consultant Selection Committee to select two separate firms to provide Harbor and Outfall Monitoring

services from 2017 to 2020, and to authorize the Executive Director, on behalf of the Authority, to execute and deliver Contract OP-326A, with Battelle Memorial Institute, Water Column Monitoring, in an amount not to exceed \$2,302,775.39 for a term of 48 months from the Notice to Proceed; and Contract OP-326B, Benthic, Fish and Shellfish Monitoring, with Normandeau Associates, Inc. in an amount not to exceed \$1,305,851.42 for a term of 46 months from the Notice to Proceed.

Cooperative Research Project with Center for Coastal Studies in Provincetown to Conduct Water Quality Monitoring in Cape Cod Bay: Contract S556

Upon a motion duly made and seconded, it was

Voted to approve the award of Contract S556, a sole-source contract with the Center for Coastal Studies in Provincetown for a cooperative research project to conduct permit-required water quality monitoring in Cape Cod Bay, and to authorize the Executive Director, on behalf of the Authority, to execute and deliver said contract in the amount of \$383,367 for a term of three years from the Notice to Proceed.

Supply and Delivery of Ferrous Chloride to the Deer Island Treatment Plant: Kemira Water Solutions, Inc., Bid WRA-4291

Upon a motion duly made and seconded, it was

Voted to approve the award of Purchase Order Contract WRA-4291 for the supply and delivery of ferrous chloride to the Deer Island Treatment Plant, to the lowest eligible and responsible bidder, Kemira Water Solutions, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute and deliver said purchase order contract in an amount not to exceed \$1,000,000 for a period of one year from January 1, 2017 through December 31, 2017.

Commonwealth Avenue Pump Station Improvements – Design, Engineering Services During Construction and Resident Engineering/ Inspection Services: Black & Veatch Corp., Contract 7523

Upon a motion duly made and seconded, it was

Voted to approve the recommendation of the Consultant Selection Committee to select Black & Veatch Corporation to provide Design, Engineering Services during Construction and Resident Engineering/Inspection Services for the Commonwealth Avenue Pump Station Improvements, and to authorize the Executive Director, on behalf of the Authority, to execute and deliver said contract in an amount not to exceed \$2,775,831 for a term of 54 months from the Notice To Proceed.

Northern Intermediate High Sections 110 and 112 – Stoneham and Wakefield: Albanese D&S, Inc., Contract 7478

Upon a motion duly made and seconded, it was

Voted to approve the award of Contract 7478, Northern Intermediate High Section 110 and 112-Stoneham and Wakefield to the lowest eligible and responsible bidder, Albanese D&S, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute and deliver said contract in the bid amount of \$17,817,999.00 for a term of 610 calendar days from the Notice to Proceed.

Section 80 Repair - Weston: P. Caliacco Corporation, Contract 7532

Upon a motion duly made and seconded, it was

Voted to approve the award of Contract 7532, Section 80 Repair, to the lowest eligible and responsible bidder, P. Caliacco Corporation, and to authorize the Executive Director, on behalf of the Authority, to execute and deliver said contract in the bid amount of \$1,828,409 for a term of 212 calendar days from the Notice to Proceed.

Voted to enter executive session for the purpose of discussing strategy with respect to litigation, in that such discussion may have a detrimental effect on the litigating position of the Authority.

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

* * * *

EXECUTIVE SESSION

* * * *

The meeting returned to open session at 2:00 p.m. and adjourned.

DRAFT