MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Posted 03/15/2019
2:43 PM

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WASTEWATER POLICY & OVERSIGHT COMMITTEE MEETING

to be held on

Wednesday, March 20, 2019

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

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

Time: 10:00 a.m.

AGENDA

A. Information

1. Infiltration/Inflow Local Financial Assistance Program Annual Update

B. Contract Awards

1. Centrifuge Services at the Deer Island Treatment Plant: Alfa Laval, Inc., Contract S580
2. Combined Heat and Power Study, Deer Island Treatment Plant: Black & Veatch, Contract 6963A
3. Biosolids Processing Facility Capital Improvements: IPC Lydon, LLC, Contract 7153

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the

Wastewater Policy and Oversight Committee

February 20, 2019

A meeting of the Wastewater Policy and Oversight Committee was held on February 20, 2019 at the Authority headquarters in Charlestown. Committee Chair Flanagan presided. Present from the Board were Messrs. Carroll, Cook, Cotter, Pappastergion, Peña, Vitale, Walsh and Ms. Wolowicz. Mr. Foti was absent. Among those present from the Authority staff were Frederick Laskey, Carolyn Francisco Murphy, David Coppes, Carolyn Fiore, Rebecca Weidman, David Duest, Corrine Barret, Martin McGowan, John Colbert, David Pottle and Kristin MacDougall. The meeting was called to order at 11:25 a.m.

Approvals

* Amendments to the MWRA Regulations for Adjudicatory Proceedings, Enforcement and Administrative Penalties, and Sewer Use

Staff made a presentation. (Ms. Wolowicz left and returned to the meeting.) There were questions and answers.

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

* Assignment and Assumption of Bid WRA-4115 and Issuance of a New Purchase Order Contract for the Supply and Delivery of Polymer to the Deer Island Treatment Plant, Solenis, LLC

Staff made a verbal presentation.

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

Contract Amendments/Change Orders

* Chelsea Creek Headworks Upgrade, BHD/BEC JV 2015, A Joint Venture, Contract 7161, Change Order 26

Staff made a presentation. There were questions and answers. (Ms. Wolowicz returned to the meeting.)

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* Committee recommendation approved by the Board on February 20, 2019

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

* Alewife Brook Pump Station: Stantec Consulting Services, Inc., Contract 7034, Amendment 6

Staff made a presentation. There were questions and answers.

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

The meeting adjourned at 11:47 a.m.

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* Committee recommendation approved by the Board on February 20, 2019

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Infiltration/Inflow Local Financial Assistance Program Annual Update

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COMMITTEE: Wastewater Policy & Oversight

__X__ INFORMATION
_____ VOTE

Carolyn M. Fiore, Deputy Chief Operating Officer
Stephen Estes-Smargiassi, Director, Planning and Sustainability
Carl H. Leone, P.E., Senior Program Manager, Planning
Jon F. Szarek, P.E., Project Manager, Planning
Preparer/Title

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

RECOMMENDATION:

For information only.

DISCUSSION:

MWRA's Infiltration/Inflow (I/I) Local Financial Assistance Program was initiated in May 1993 to provide funding to member sewer communities to perform I/I reduction and sewer system rehabilitation projects within their locally-owned collection systems. The program's goal is to assist member communities in improving sewer system conditions to reduce I/I and ensure ongoing repair/replacement and efficient operation and maintenance of local collection systems. Staff review of long-term wastewater meter data and frequency and duration of sanitary sewer overflows (SSOs) indicates MWRA's financial assistance for local I/I reduction and collection system rehabilitation projects, together with CSO Control Program projects, are providing gradual flow reduction improvements for the regional wastewater collection system.

The I/I Local Financial Assistance Program is a critical component of MWRA's Regional I/I Reduction Plan.[1] Specifically, local sewer system rehabilitation projects are intended to offset ongoing collection system deterioration to prevent a net increase in regional I/I. In the long-term, ongoing system rehabilitation should result in lower I/I, which will allow for future increases in sanitary flows (residential, commercial, industrial, and institutional) without a net increase in total wastewater flow to the Deer Island Treatment Plant. Regional I/I reductions ensure that the dry day wastewater flow does not exceed the Deer Island NPDES permit limit of 436 mgd. Over the last 10 years, the dry day wastewater flow to the Deer Island plant has averaged 287 mgd, well below the NPDES permit limit (see Table 1).

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[1] As required by the National Pollutant Discharge Elimination System (NPDES) Permit for the Deer Island Treatment Plant, MWRA's Regional Infiltration/Inflow Reduction Plan was approved by MassDEP in November 2002. MWRA is required to report annually on the I/I Reduction Plan and present estimates of I/I.

Table 1 – Deer Island Treatment Plant Total and Dry Day Wastewater Flow

Calendar Year	Total Wastewater Flow	Dry Day Wastewater Flow
2009	355 mgd	320 mgd
2010	358 mgd	310 mgd
2011	379 mgd	328 mgd
2012	292 mgd	268 mgd
2013	318 mgd	263 mgd
2014	326 mgd	284 mgd
2015	295 mgd	256 mgd
2016	284 mgd	256 mgd
2017	318 mgd	280 mgd
2018	362 mgd	308 mgd
10 Year Average	329 mgd	287 mgd

Update on Distribution of I/I Financial Assistance to Communities

Since 1993, a total of $760.75 million in grant and loan funds (13 funding Phases) have been allocated to member sewer communities based on their respective share of sewer charges. Most recently in June 2018, the Board approved Phases 11, 12, and 13 at $100 million each. Distributions under Phases 11 and 12 will continue at 75% grants and 25% 10-year, interest-free loans (same as Phases 9 and 10). Phase 13 was added as a 10-year, interest-free loan-only phase, which communities can utilize if they exhaust their grant/loan allocations.

All 43 sewer customer communities are participating in the financial assistance program. Through February 2019, a total of $389.60 million has been distributed to member communities to fund 565 local sewer rehabilitation projects over the past 26 years. The remaining $371.15 million is approved for distribution through FY30. All scheduled community loan repayments have been made, a total of $169 million to date. Of the 565 total projects, 504 have been completed and 61 are ongoing in planning, design, or construction. Attachment 1 provides a summary of funds allocated, distributed, and remaining for each member community. Attachment 2 provides a summary of funding distributions by fiscal quarter since program inception in May 1993.

As recommended by the Advisory Board, sunset provisions for the grant portion of funding for Phases 6 and 7 were added in April 2014. The sunset provisions have proven successful in motivating communities to continue to invest in local sewer rehabilitation projects. In December 2018, the last of the Phase 6 funds were distributed. Only three communities have Phase 7 funds remaining to be distributed. The grant portion of Phase 7 funds will sunset at the end of FY21.

Grant and loan funding is provided to local communities for eligible I/I reduction projects including planning, design, construction, and engineering services during construction. These projects generally take one to three years to complete. Seventy-eight percent of the funds distributed to date have financed local construction projects. Table 2 details funds distributed for planning, design, construction and construction services for both completed and ongoing projects.

Table 2 – I/I Financial Assistance for Planning, Design, and Construction

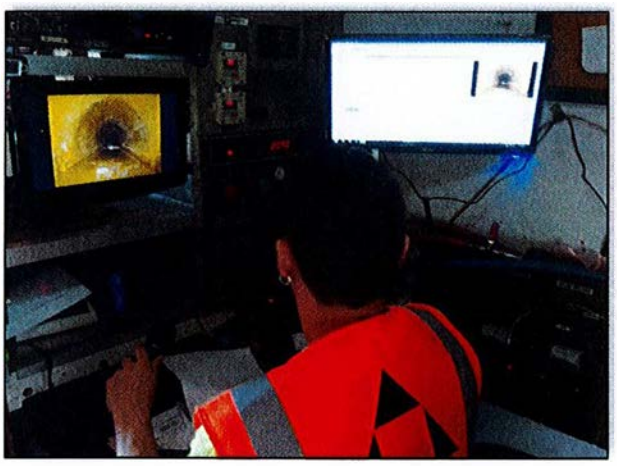
PROJECT PHASE	COMPLETED PROJECTS ($ millions)	ONGOING PROJECTS ($ millions)	TOTAL ($ millions)
Planning/Study:	$ 43.2	$ 6.1	$ 49.3 (13%)
Design:	13.4	2.4	15.8 (4%)
Construction:	228.8	75.9	304.7 (78%)
Eng. Services During Const.:	15.4	4.4	19.8 (5%)
TOTAL	$ 300.8 (77%)	$ 88.8 (23%)	$ 389.6 (100%)

Program Results

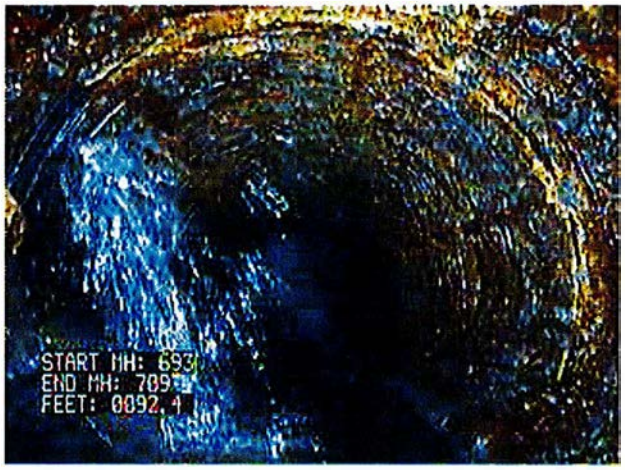
Through February 2019, a total of 565 local I/I reduction and sewer system rehabilitation projects have been funded through the MWRA's I/I Local Financial Assistance (grant/loan) Program. Cumulative results are summarized below.

Results for planning and sewer inspection projects:

- 2,074 miles of sewer TV inspected
- 1,450 miles of sewer flow isolated
- 1,331 miles of sewer smoke tested
- 58,664 sewer manholes inspected
- 77,894 buildings inspected



Sewer TV Inspection



Infiltration Source Identified by Sewer TV Inspection

Results for projects targeting infiltration reduction:

- 70 miles of sewer replaced
- 219 miles of cured-in-place-pipe (CIPP) liner installed
- 172 miles of sewer tested/chemically sealed
- 2,532 sewer spot repairs
- 13,206 service connection repairs
- 4.8 miles of underdrains sealed

Results for projects targeting inflow reduction:

- 1,060 catch basins disconnected
- 44 miles of new or replaced storm drains
- 18,187 manholes rehabilitated/sealed
- 3,165 manhole covers replaced or inflow seals installed
- 433 sump pumps redirected
- 5,352 downspouts/area drains disconnected

Private Source Inflow from a Sump Pump

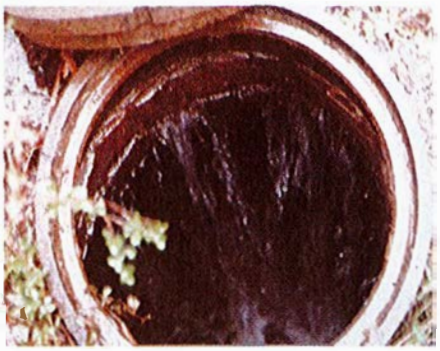
Sewer Manhole at Beach - Raised and Sealed

I/I and Stormwater Impacts on the MWRA Collection System

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

Infiltration into a Sanitary Sewer

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



Inflow into a Manhole during Flooding

Storm Water in Combined Sewers is, by design, collected in the combined sewer system to be transported to a downstream treatment facility. During rainfall events that cause the combined sewer system to reach capacity, a portion of wastewater flow is diverted to combined sewer overflow (CSO) storage facilities and CSO outfalls.

The volume of infiltration, inflow, and stormwater (in combined sewers) that is discharged by member sewer communities into the MWRA collection system is influenced by seasonal and wet-weather conditions as well as tide height and storm surge. Infiltration and inflow is extraneous water that enters all wastewater collection systems through a variety of sources. I/I and stormwater take-up pipeline capacity in the collection system that would otherwise be available to transport sanitary flow. During extreme storm events, particularly during periods of high groundwater, excessive I/I may cause sewer system surcharging and sanitary sewer overflows (SSOs). I/I entering the collection system also results in the transport of groundwater and surface water out of the natural watershed.

Review of Total, North, and South System Flows in the MWRA Collection System

Attachment 3 provides graphs of long-term wastewater flow data (30 years from 1989-2018) for the total collection system to the Deer Island Treatment Plant as well as flow data for the north and south collection systems. The five-year running average wastewater flow is overlaid on each flow graph to smooth the annual variability in the flow data. Annual rainfall from the Logan Airport gauge is also displayed on Attachment 3. The long-term average daily flow for the total system is 353 mgd and the average annual rainfall is 43.4 inches. Over the long-term, the total system average daily flow has declined approximately 70 mgd, a reduction of 18% in total system wastewater flow. The north collection system decreased by approximately 50 mgd, while the south collection system decreased by approximately 20 mgd.

The long-term flow reductions noted above are the result of a number of factors, some helping decrease wastewater flow while others increase wastewater flow:

- CSO separation projects reduce stormwater tributary to the combined sewer system leading to decreased flows. However, MWRA's pumping and interceptor relief upgrades, as well as CSO optimization projects, are intended to maximize sewer flow to the treatment plant leading to increased flows.
- MWRA's financial assistance for local I/I reduction and sewer rehabilitation projects provide gradual improvements to the regional collection system reducing I/I and stormwater. However, each year the regional collection system gets older and continues to deteriorate, which increases I/I.
- Water use within the 43 sewer service area communities has decreased significantly over the long-term. To eliminate outdoor water use trends, community winter water use data over the last 20 years was analyzed. A total reduction of approximately 46 mgd of winter water use was identified, however, only approximately 22 mgd of decreased wastewater flow was realized. The 20-year analysis identified:
  - Water leakage out of the distribution system was estimated to be reduced by 24 mgd, this water use reduction does not impact wastewater flow.
  - Indoor water use was estimated to be reduced by 40 mgd (approximately 20 gallons per capita per day) due to water conservation trends. However, over the same 20-year period, sewered area population increased by 270,000 people resulting in an estimated increased indoor water use of 18 mgd. The net indoor winter water use reduction is estimated to be 22 mgd.

Review of Individual Community Wastewater Flow Changes

For a more detailed evaluation of long-term wastewater flow changes, staff compared individual community sewered population and metered wastewater flows over a 20-year span. The two years 1997 and 1998 were selected to compare with 2016 and 2018. These two year periods were selected since each had one very dry year (1997 and 2016) with less than 33 inches of rain and each had one very wet year (1998 and 2018) with more than 53 inches of rain. The comparison of sewered population and metered average daily wastewater flow data is presented on Attachment 4.

Reviewing the 20-year sewered population change data, the total system increase was approximately 270,000 people and the average increase for all communities was 14%. Two communities (Ashland and Wilmington) had very large sewered population increases (over 60%). Five communities had large sewered population increases (over 30%) including Chelsea, Hingham, Holbrook, Walpole, and Westwood.

Next, reviewing the 20-year wastewater flow change data, the total system flow decrease was approximately 60 mgd (42 mgd for the north system and 18 mgd for the south system) and the average decrease for all communities was 16%. Four communities had wastewater flow increases (displayed in bold type in Attachment 4), including Ashland, Braintree, Chelsea, and Hingham. Six communities had wastewater flow reductions of 33-40% over the 20-year span, including Belmont, Dedham, Milton, Needham, Stoneham, and Woburn. Nine communities had wastewater flow reductions of between 25-30%. In terms of actual wastewater flow reductions, eight communities had wastewater flow reductions of more than 2.00 mgd, including Boston - 11.80 mgd, Newton - 5.75 mgd, Woburn - 3.71 mgd, Brookline - 3.09 mgd, Quincy - 2.77 mgd, Medford - 2.58 mgd, Dedham - 2.50 mgd, and Needham - 2.31 mgd.

The 20-year review of individual community wastewater flow changes helps to identify communities that are having the greatest success in reducing flow through investments in I/I reduction and combined sewer separation projects. Some caveats to the individual community data are noted below:

- Communities that historically had significant sanitary sewer overflow (SSO) issues that have been reduced, may not see their full flow reduction results represented in the metered flow comparison since the reduced SSOs are not measured.
- The total Boston (BWSC) flow reduction of 11.80 mgd was due to flow reductions in Boston-North only (the combined sewer system portion of Boston), which had a reduction of 12.76 mgd. The Boston-South (separate system) had a flow increase of 0.94 mgd.
- The total Brookline flow reduction of 3.09 mgd was due to flow reductions in Brookline-North (the previously combined sewer system portion of Brookline) with a reduction of 2.14 mgd, as well a Brookline-South (separate system), which had a flow reduction of 0.96 mgd.
- The Woburn flow reduction of 3.71 mgd was significantly influenced by loss of the City's largest industrial wastewater flow discharger (Atlantic Gelatin), which closed its operation in 2016.

Staff have begun a review of the potential impacts of current and future development to inform decision-making around capital investments.

Review of South Collection System Flows by Sewer Subareas

To take a more detailed look at long-term wastewater flow changes in the south collection system, staff grouped the 17 south collection system communities (or portions of communities tributary to the south system) into five geographic sewer subareas. The five sewer subareas are listed below along with the aggregate flow change based on the 20-year metered flow comparison presented in Attachment 4. The total south collection system flow decrease was 18 mgd.

- Wellesley Extension Sewer Subarea (Ashland, Framingham, Natick, Wellesley, and Needham): 20-year flow reduction of 5.21 mgd (22% reduction).
- New Neponset Sewer Subarea (Walpole, Norwood, Stoughton, Canton, and Westwood: 20-year flow reduction of 2.08 mgd (11% reduction).
- Braintree-Weymouth Sewer Subarea (Hingham, Holbrook, Randolph, Braintree, and Weymouth): 20-year flow reduction of 0.92 mgd (4% reduction).
- High Level Sewer Subarea (Newton-South, Brookline-South, Dedham, Milton, and Quincy): 20-year flow reduction of 10.97 mgd (24% reduction).
- Boston-South Sewer Subarea (only the portion of BWSC's system tributary to the Nut Island Headworks): 20-year flow increase of 0.94 mgd (6% increase).

Attachment 5 provides graphs of long-term wastewater flow data (25 years from 1994-2018) for the five south collection system sewer subareas. As noted in the flow change data above and as displayed on the graphs in Attachment 5, the High Level Sewer Subarea communities (24% reduction) and Wellesley Extension Sewer Subarea communities (22% reduction) have accounted for the most significant wastewater flow reductions in MWRA's south collection system.

Review of Frequency and Duration of (SSO) Events

Staff have reviewed SSO events over the last 20 years (1999-2018) and have presented the SSO data in Attachments 6 and 7. These tables are intended to show that both the frequency and duration of SSOs have gradually declined during periods of comparable rainfall over the last 20 years. SSO data pre-1999 has not been presented, since 1999 represents the first complete year when full pumping capacity at Deer Island Treatment Plant was reached (following completion of the Nut Island Headworks and Inter-Island Tunnel). For comparable rainfall, the frequency of SSOs pre-1999 was significantly higher.

A single month with very high rainfall or the cumulative effect of consecutive months with medium to high rainfall may put MWRA's regional collection system at risk of SSOs. Attachment 6 displays monthly rainfall totals (Logan Airport) with the blocks shaded darker blue to represent larger monthly rainfall totals. The blocks shaded pink list the number of north and south "SSO Risk Assessment Areas" that had an active SSO during the month (north SSOs are listed on top and south SSOs are listed on the bottom). The "SSO Risk Assessment Areas" (12 in the north and 8 in the south) are one or more manholes or structures where SSOs have historically occurred and are hydraulically connected within a small geographic area.

As shown on Attachment 6, there were SSOs in the north and south system during three different months in one year (2008); there were SSOs during two different months in six years (2000, 2002, 2003, 2006, 2010, and 2015); there were SSOs during one month in eleven years; and only during 2009 and 2016 were there no SSOs in either the north or south systems. The extraordinarily rainy spring of 2010 (over 14 inches of rain in March) and December 2014 (three consecutive months

of over 5 inches of rain) were the last two storm events which produced widespread SSOs in MWRA's system. Analysis of the 1999-2018 SSO data during periods of comparable rainfall indicates the frequency of SSOs has gradually declined over the last 20 years.

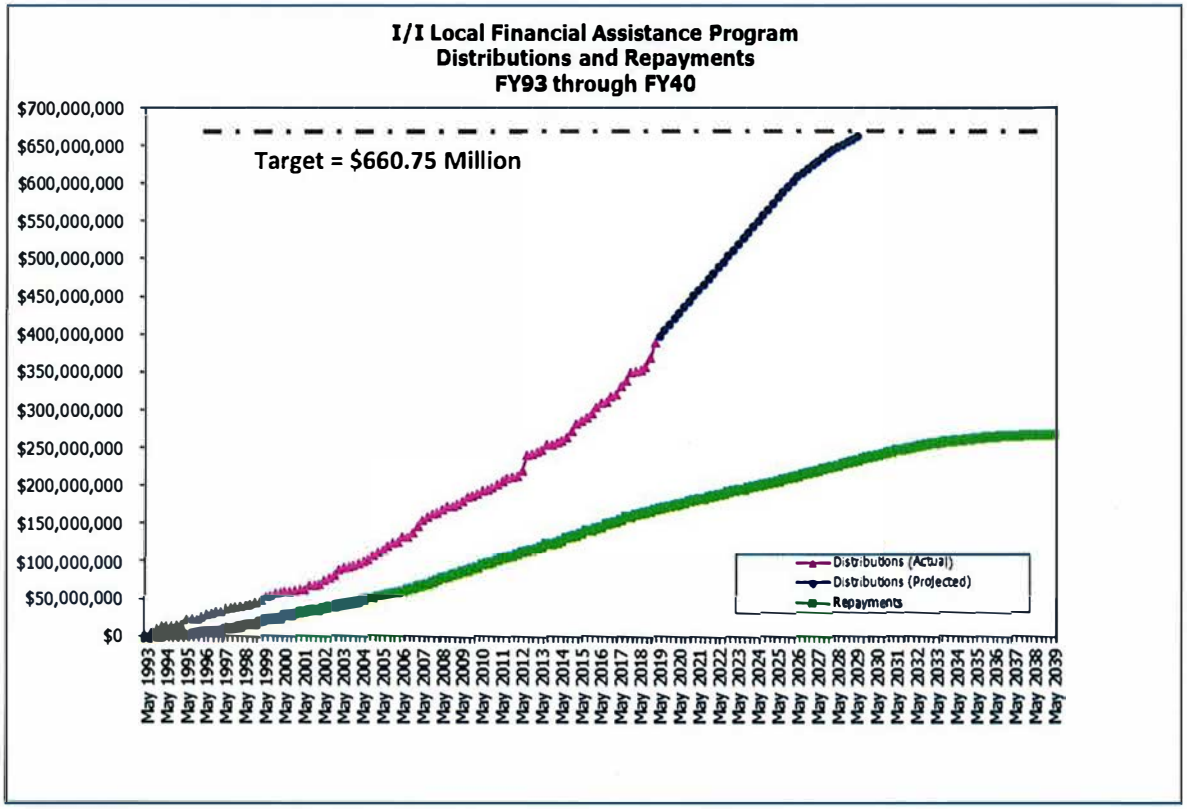
Attachment 7 again displays monthly rainfall totals (Logan Airport) with the blocks shaded darker blue to represent larger monthly rainfall totals. In Attachment 7, the blocks shaded pink list the duration of the SSO in hours at the most frequent South System SSO Risk Assessment Area (S-1 Smelt Brook Siphon headhouse at the Braintree/Weymouth Town Line). Analysis of the 1999-2018 SSO data during periods of comparable rainfall indicates the duration of SSO at the Smelt Brook Siphon has gradually declined over the last 20 years. From 1999 through 2010, it was not unusual for SSOs at this location to continue for more than two days. During 2011 through 2017, the site's four SSOs events had a duration of 4 and 11 hours. The most recent SSO at this site lasted for 26 hours during the March 2-3, 2018 severe storm event which included multiple extreme high tides from storm surge and significant south coastal flooding. During this event, storm surge raised the high tide elevation a few inches above the Smelt Brook Siphon headhouse structure.

In summary, MWRA's financial assistance for local I/I reduction and collection system rehabilitation projects are providing gradual flow reduction improvements for the regional wastewater collection system.

BUDGET/FISCAL IMPACT:

The FY19 CIP includes an overall budget of $392.6 million for the grant portion of the I/I Local Financial Assistance Program. An additional $368.2 million is budgeted for the loan portion of the program. However, the loan portion is offset by an equal amount of loan repayments over time. Depending on the timing and level of community loan requests, loan distributions can fluctuate, sometimes causing overspending or underspending (versus budget) for any particular fiscal year.

For the total program, the budget target is $760.75 million for grant and loan distributions. To date, $389.60 million in grants and loans ($191.1 million in grants and $198.5 million in loans) have been distributed. The program has a remaining balance of $371.15 million in future community grants and loans through FY30. Community loan repayments to date are $169 million. As community loans are repaid, the funds are deposited into MWRA's construction fund. Community grants and loans are financed through MWRA 30-year bonds. The graph below presents grant and loan distributions and loan repayments (actual and projected) for Program Phases 1-12 (FY93 through FY40), not including the 100 million loan only Phase 13.



MBE/WBE PARTICIPATION:

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

ATTACHMENTS:

Attachment 1 - Community Funding Summary
Attachment 2 - Summary of Funding Distributions by Fiscal Quarter
Attachment 3 - Long-Term Regional Flow Data
Attachment 4 - Sewered Population and Wastewater Flow Comparison from 1997/98 to 2016/18
Attachment 5 - South Collection System Sewer Subareas Long-Term Annual Flow Data
Attachment 6 - Monthly Rainfall Data 1999-2018 and SSOs at Risk Assessment Areas
Attachment 7 - Monthly Rainfall Data 1999-2018 and Duration of SSO (Hours)
at Risk Assessment Area S-1 at Smelt Brook Siphon

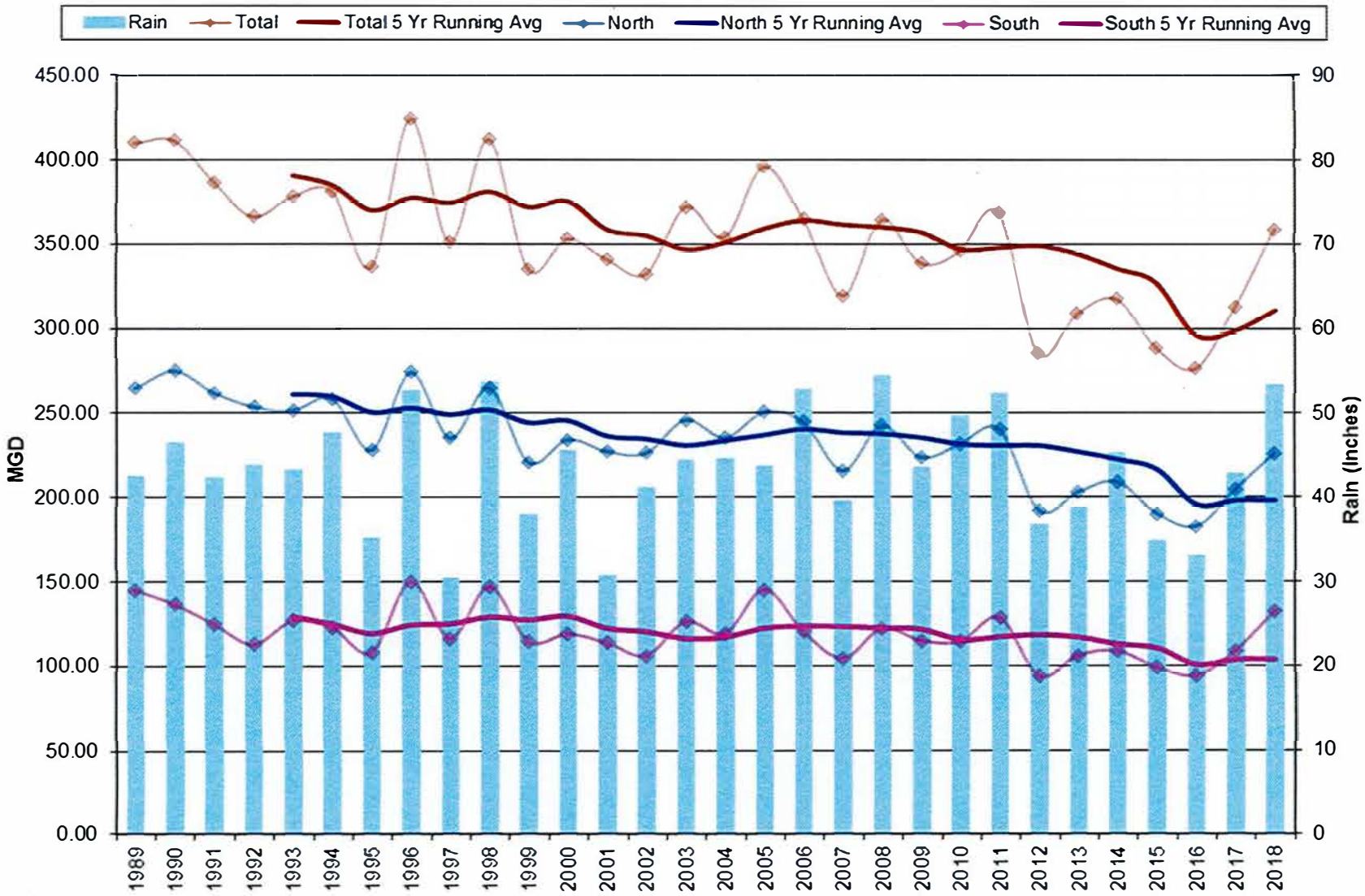
ATTACHMENT 1
MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
FUNDING SUMMARY AS OF FEBRUARY 2019

Community	Total Allocations (Phases 1 - 13)	Total Distributions (Phases 1 - 13)	Percent Distributed	Funds Remaining
Arlington	$13,703,000	$8,423,000	61%	$5,280,000
Ashland	$3,818,500	$1,742,450	46%	$2,076,050
Bedford	$5,654,600	$1,999,600	35%	$3,655,000
Belmont	$8,255,100	$2,992,100	36%	$5,263,000
Boston	$218,001,200	$94,112,776	43%	$123,888,424
Braintree	$14,419,000	$8,359,000	58%	$6,060,000
Brookline	$21,355,200	$7,666,200	36%	$13,689,000
Burlington	$8,432,800	$5,102,800	61%	$3,330,000
Cambridge	$39,250,100	$28,830,100	73%	$10,420,000
Canton	$6,635,900	$2,675,900	40%	$3,960,000
Chelsea	$11,760,100	$5,551,100	47%	$6,209,000
Dedham	$9,220,000	$5,740,000	62%	$3,480,000
Everett	$13,381,500	$6,650,500	50%	$6,731,000
Framingham	$20,375,000	$8,803,910	43%	$11,571,090
Hingham	$2,802,500	$2,022,500	72%	$780,000
Holbrook	$2,779,600	$896,562	32%	$1,883,038
Lexington	$12,125,300	$9,005,300	74%	$3,120,000
Malden	$20,683,900	$5,641,900	27%	$15,042,000
Medford	$19,637,600	$7,961,600	41%	$11,676,000
Melrose	$10,126,300	$7,157,300	71%	$2,969,000
Milton	$9,014,500	$5,564,500	62%	$3,450,000
Natick	$9,332,600	$5,582,600	60%	$3,750,000
Needham	$9,977,600	$3,218,600	32%	$6,759,000
Newton	$34,937,400	$25,777,400	74%	$9,160,000
Norwood	$11,589,400	$6,879,400	59%	$4,710,000
Quincy	$32,780,000	$23,302,039	71%	$9,477,961
Randolph	$10,070,800	$3,894,800	39%	$6,176,000
Reading	$7,749,100	$4,629,100	60%	$3,120,000
Revere	$16,940,900	$5,502,900	32%	$11,438,000
Somerville	$25,955,800	$10,117,800	39%	$15,838,000
Stoneham	$7,829,900	$5,889,900	75%	$1,940,000
Stoughton	$7,902,900	$5,122,900	65%	$2,780,000
Wakefield	$9,806,900	$6,493,310	66%	$3,313,590
Walpole	$6,110,000	$3,042,000	50%	$3,068,000
Waltham	$22,282,400	$11,377,400	51%	$10,905,000
Watertown	$10,155,800	$5,235,800	52%	$4,920,000
Wellesley	$9,249,700	$3,582,504	39%	$5,667,196
Westwood	$4,302,300	$2,091,300	49%	$2,211,000
Weymouth	$19,100,900	$9,425,900	49%	$9,675,000
Wilmington	$4,232,000	$1,606,000	38%	$2,626,000
Winchester	$6,793,000	$4,183,000	62%	$2,610,000
Winthrop	$5,553,400	$3,066,900	55%	$2,486,500
Woburn	$16,665,500	$12,685,500	76%	$3,980,000
Totals	$760,750,000	$389,606,151	51%	$371,143,849

ATTACHMENT 2
MWRA I/I Local Financial Assistance Program - Fiscal Year Breakdown

FY	Distribution Cycle	Distribution Amount	Distribution Cycle	Distribution Amount	Distribution Cycle	Distribution Amount	Distribution Cycle	Distribution Amount	FY Total
FY93	Aug 1992	$0	Nov 1992	$0	Feb 1993	$0	May 1993	$2,714,883	$2,714,883
FY94	Aug 1993	$3,096,468	Nov 1993	$4,096,133	Feb 1994	$3,191,032	May 1994	$251,494	$10,635,127
FY95	Aug 1994	$354,126	Nov 1994	$976,700	Feb 1995	$1,894,030	May 1995	$6,489,891	$9,714,747
FY96	Aug 1995	$0	Nov 1995	$504,100	Feb 1996	$2,921,600	May 1996	$3,902,426	$7,328,126
FY97	Aug 1996	$1,682,061	Nov 1996	$1,581,266	Feb 1997	$395,100	May 1997	$3,530,758	$7,189,185
FY98	Aug 1997	$1,066,300	Nov 1997	$1,157,260	Feb 1998	$909,350	May 1998	$2,001,608	$5,134,518
FY99	Aug 1998	$1,521,100	Nov 1998	$2,464,263	Feb 1999	$1,481,700	May 1999	$5,758,077	$11,225,140
FY00	Aug 1999	$1,315,767	Nov 1999	$1,847,900	Feb 2000	$1,679,000	May 2000	$1,070,100	$5,912,767
FY01	Aug 2000	$1,148,400	Nov 2000	$388,000	Feb 2001	$1,640,931	May 2001	$804,800	$3,982,131
FY02	Aug 2001	$4,480,735	Nov 2001	$704,040	Feb 2002	$1,804,200	May 2002	$5,002,691	$11,991,666
FY03	Aug 2002	$1,962,600	Nov 2002	$4,461,768	Feb 2003	$7,955,752	May 2003	$1,836,600	$16,216,720
FY04	Aug 2003	$2,021,940	Nov 2003	$1,306,200	Feb 2004	$1,770,760	May 2004	$3,295,400	$8,394,300
FY05	Aug 2004	$2,756,659	Nov 2004	$6,013,436	Feb 2005	$4,054,060	May 2005	$2,636,700	$15,460,855
FY06	Aug 2005	$5,377,487	Nov 2005	$4,589,600	Feb 2006	$1,519,463	May 2006	$6,489,676	$17,976,226
FY07	Aug 2006	$0	Nov 2006	$4,947,414	Feb 2007	$8,789,300	May 2007	$8,121,023	$21,857,737
FY08	Aug 2007	$3,915,500	Nov 2007	$4,355,750	Feb 2008	$1,392,400	May 2008	$4,436,600	$14,100,250
FY09	Aug 2008	$4,196,399	Nov 2008	$352,000	Feb 2009	$1,990,300	May 2009	$4,872,400	$11,411,099
FY10	Aug 2009	$5,462,736	Nov 2009	$616,600	Feb 2010	$2,679,600	May 2010	$4,845,000	$13,603,936
FY11	Aug 2010	$723,700	Nov 2010	$3,183,250	Feb 2011	$4,123,100	May 2011	$4,258,900	$12,288,950
FY12	Aug 2011	$3,695,100	Nov 2011	$2,417,378	Feb 2012	$848,300	May 2012	$7,010,324	$13,971,102
FY13	Aug 2012	$21,299,965	Nov 2012	$1,004,610	Feb 2013	$2,460,000	May 2013	$2,675,000	$27,439,575
FY14	Aug 2013	$7,550,310	Nov 2013	$0	Feb 2014	$2,929,700	May 2014	$2,271,852	$12,751,862
FY15	Aug 2014	$4,053,000	Nov 2014	$7,647,400	Feb 2015	$10,128,648	May 2015	$4,803,450	$26,632,498
FY16	Aug 2015	$3,983,100	Nov 2015	$5,783,000	Feb 2016	$7,195,116	May 2016	$5,483,000	$22,444,216
FY17	Aug 2016	$2,352,100	Nov 2016	$6,553,200	Feb 2017	$2,918,900	May 2017	$10,434,030	$22,258,240
FY18	Aug 2017	$8,085,900	Nov 2017	$10,311,545	Feb 2018	$1,377,800	May 2018	$1,909,730	$21,684,975
FY19	Aug 2018	$4,107,370	Nov 2018	$12,150,449	Feb 2019	$19,027,200	May 2019		$35,285,019
Total		$96,208,823		$89,413,272		$97,077,342		$106,906,713	$389,606,151
Average		$3,700,339		$3,438,972		$3,733,744		$4,111,785	$14,984,840

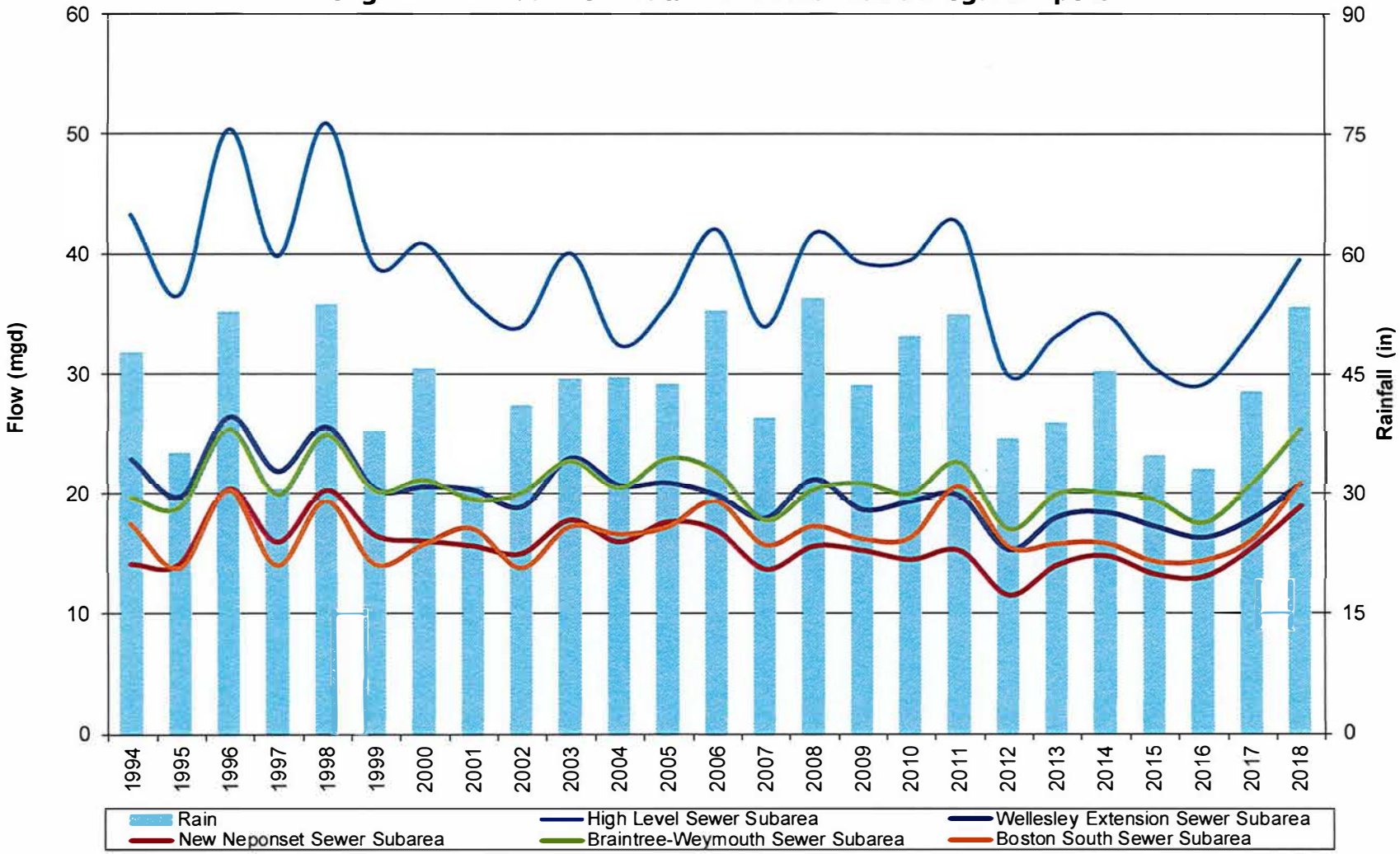
ATTACHMENT 3
MWRA Long-Term Regional Flow Data
NOAA Annual Rainfall at Logan Airport



ATTACHMENT 4
Sewered Population and Wastewater Flow Comparison
from 1997/1998 to 2016/2018

Community	2016/2018 Average Sewered Population	Change in Population from 1997/1998 Sewered Population	% Change in Population from 1997/1998 Sewered Population	2016/2018 Average ADF	Change in Flow from 1997/1998 Average ADF	% Change in Flow from 1997/1998 Average ADF
Arlington	44,504	892	2.0%	4.62	-1.54	-25.0%
Ashland	13,583	5,560	69.0%	1.26	**0.49**	**64.0%**
Bedford	13,895	2,270	20.0%	2.50	-0.43	-15.0%
Belmont	25,352	1,813	8.0%	2.85	-1.84	-39.0%
BWSC	658,579	100,743	18.0%	90.09	-11.80	-12.0%
Braintree	36,804	2,270	7.0%	7.28	**0.79**	**12.0%**
Brookline	59,068	5,148	10.0%	8.19	-3.09	-27.0%
Burlington	25,299	2,981	13.0%	3.47	-0.12	-3.0%
Cambridge	108,954	15,341	16.0%	17.93	-1.40	-7.0%
Canton	15,406	983	7.0%	3.03	-0.69	-18.0%
Chelsea	38,135	10,555	38.0%	5.38	**0.83**	**18.0%**
Dedham	23,738	1,469	7.0%	3.69	-2.50	-40.0%
Everett	43,888	8,917	25.0%	5.24	-1.00	-16.0%
Framingham	68,219	8,523	14.0%	7.44	-1.15	-13.0%
Hingham	6,989	1,814	35.0%	1.33	-0.05	-3.0%
Holbrook	9,773	2,674	38.0%	0.92	**0.07**	**8.0%**
Lexington	32,486	4,977	18.0%	4.85	-1.96	-29.0%
Malden	60,371	7,675	15.0%	8.73	-0.48	-5.0%
Medford	57,134	1,000	2.0%	7.26	-2.58	-26.0%
Melrose	27,792	393	1.0%	4.21	-0.04	-1.0%
Milton	26,614	2,884	12.0%	3.22	-1.59	-33.0%
Natick	31,726	5,989	23.0%	2.95	-1.02	-26.0%
Needham	28,607	3,562	14.0%	3.67	-2.31	-39.0%
Newton	87,530	9,298	12.0%	14.91	-5.75	-28.0%
Norwood	28,867	315	1.0%	5.99	-0.38	-6.0%
Quincy	93,591	8,145	10.0%	13.41	-2.77	-17.0%
Randolph	33,483	3,082	10.0%	3.50	-0.77	-18.0%
Reading	25,057	3,708	17.0%	3.03	-0.16	-5.0%
Revere	53,310	11,591	28.0%	6.35	-0.95	-13.0%
Somerville	80,063	5,781	8.0%	10.53	-1.19	-10.0%
Stoneham	21,535	-43	0.0%	2.93	-1.66	-36.0%
Stoughton	19,672	2,634	15.0%	3.14	-0.57	-15.0%
Wakefield	26,336	2,644	11.0%	4.25	-1.03	-19.0%
Walpole	18,167	4,371	32.0%	2.09	-0.43	-17.0%
Waltham	61,716	4,559	8.0%	8.81	-1.98	-18.0%
Watertown	33,511	1,053	3.0%	3.43	-1.36	-28.0%
Wellesley	28,409	3,262	13.0%	3.26	-1.22	-27.0%
Westwood	14,409	3,673	34.0%	1.78	-0.03	-1.0%
Weymouth	54,006	3,300	7.0%	8.54	-0.96	-10.0%
Wilmington	4,834	1,853	62.0%	1.42	-0.27	-16.0%
Winchester	22,429	2,131	10.0%	2.28	-0.90	-28.0%
Winthrop	18,151	863	5.0%	2.12	-0.17	-7.0%
Woburn	38,423	3,077	9.00%	6.22	-3.71	-37.0%
TOTAL	2,220,415	273,730	14.0%	308.10	-59.68	-16.0%

ATTACHMENT 5
South Collection System Sewer Subareas
Long-Term Annual Flow Data - NOAA Rainfall at Logan Airport



ATTACHMENT 6
Community Support Program Tracking

Monthly Rainfall Data 1999-2018 and SSOs at Risk Assessment Areas

Monthly Rainfall >/= 9.0"
Monthly Rainfall >/= 5.0" and < 9.0"
Monthly Rainfall >/= 3.5" and < 5.0"

Average Annual Rainfall	1872-2018	41.9"
	1996-2018	43.1"
Average Monthly Rainfall	1872-2018	3.5"
	1996-2018	3.6"

# of MWRA N/S SSOs at Risk Assessment Areas
12 Risk Assessment Areas in North System
8 Risk Assessment Areas in South System

Year	Jan	N/S SSOs	Feb	N/S SSOs	Mar	N/S SSOs	Apr	N/S SSOs	May	N/S SSOs	Jun	N/S SSOs	Jul	N/S SSOs	Aug	N/S SSOs	Sep	N/S SSOs	Oct	N/S SSOs	Nov	N/S SSOs	Dec	N/S SSOs	Total
1999	5.69		3.51		2.52		0.83		2.70		0.00		3.51		1.33		9.86	2 1	4.30		2.14		1.52		37.91
2000	2.62		2.55		3.59		5.02	4 2	2.88		6.61	2 0	5.20		2.22		2.87		2.86		4.51		4.67		45.60
2001	1.58		1.37		7.57	10 3	0.88		1.23		4.99		2.13		4.14		2.29		0.98		0.73		2.83		30.72
2002	3.14		1.81		3.52		2.61		4.48		4.77		1.42		2.13		3.39		3.47		5.03	0 1	5.30	1 1	41.07
2003	1.81		4.21		4.00	0 1	4.00	0 1	4.12		4.69		2.11		2.89		2.65		6.20		2.63		5.06	0 1	44.37
2004	1.01		1.45		3.38		9.57	7 2	3.07		1.95		3.87		4.38		7.44		1.88		2.91		3.66		44.57
2005	4.45		2.70		3.89		3.17		3.98		1.46		3.37		2.88		1.78		9.41	4 1	3.71		2.87		43.67
2006	4.55		2.64		0.56		1.83		12.48	7 3	10.09	3 3	3.58		3.20		1.72		4.50		5.80		1.89		52.84
2007	2.57		2.20		4.31		6.71	5 3	3.70		2.12		5.26		0.66		1.81		2.08		2.80		5.25		39.47
2008	2.69		7.94	2 4	4.66	0 2	2.98		2.73		3.46		6.00		4.47		6.45		1.41		4.57		7.10	4 3	54.46
2009	3.35		1.94		2.51		4.13		2.69		3.22		6.90		3.24		3.09		5.17		3.34		3.91		43.49
2010	2.91		3.34	4** 1**	14.87	11 8	1.78		2.90		3.18		2.66		5.75		1.80		3.90		2.96		3.61		49.66
2011	4.57		4.57		2.10	2 0	4.03		3.23		4.76		2.04		7.74		4.40		6.77		4.21		3.97		52.39
2012	2.67		1.00		1.21		3.09		3.43		4.71		3.88		3.08		4.10		2.62		1.01		5.93	2** 0	36.73
2013	1.08		3.66	0 1*	3.32		1.37		3.22		10.50		3.61		1.84		2.21		0.61		2.72		4.62		38.76
2014	3.24		4.13		4.48		3.24		2.86		2.62		4.57		1.75		0.70		5.83		5.27		6.56	7 3	45.25
2015	3.57		3.37		3.05	0 1**	2.28		1.22		5.01		2.09		2.19		3.93	2 0	1.74		2.07		4.28		34.80
2016	3.27		4.17		3.16		2.91		2.83		1.33		0.87		1.72		1.38		5.46		2.70		3.25		33.05
2017	3.50		3.22		4.18		5.73	0 1	3.45		4.85		4.03		1.58		3.73		4.14		1.80		2.49		42.70
2018	4.92		3.76		5.07	0 2***	4.62		1.90		2.96		4.55		4.65		5.12		3.78		9.26		2.72		53.31

* Rag clogging at B/W Pump Stations - Limited Pumping
** Significant Snow Melt
*** Extreme High Tide with Storm Surge on South Coast

ATTACHMENT 7
Community Support Program Tracking

Monthly Rainfall Data 1999-2018 and Duration of SSO (Hours) at Risk Assessment Area S-1
Smelt Brook Siphon - Braintree/Weymouth

South System

Monthly Rainfall >/= 9.0"
Monthly Rainfall >/= 5.0" and < 9.0"
Monthly Rainfall >/= 3.5" and < 5.0"

Average Annual Rainfall	1872-2018	41.9"
	1996-2018	43.1"
Average Monthly Rainfall	1872-2018	3.5"
	1996-2018	3.6"

# of Hours of SSO at Risk Assessment Area S-1

Year	Jan	South SSOs	Feb	South SSOs	Mar	South SSOs	Apr	South SSOs	May	South SSOs	Jun	South SSOs	Jul	South SSOs	Aug	South SSOs	Sep	South SSOs	Oct	South SSOs	Nov	South SSOs	Dec	South SSOs	Total
1999	5.69		3.51		2.52		0.83		2.70		0.00		3.51		1.33		[illegible]	9	4.30		2.14		1.52		37.91
2000	2.62		2.55		3.59		5.02	97	2.88		6.61		5.20		2.22		2.87		2.86		4.51		4.67		45.60
2001	1.58		1.37		7.57	151	0.88		1.23		4.99		2.13		4.14		2.29		0.98		0.73		2.83		30.72
2002	3.14		1.81		3.52		2.61		4.48		4.77		1.42		2.13		3.39		3.47		5.03	4	5.30	24	41.07
2003	1.81		4.21		4.00	48	4.00	77	4.12		4.69		2.11		2.89		2.65		6.20		2.63		5.06	30	44.37
2004	1.01		1.45		3.38		9.57	54	3.07		1.95		3.87		4.38		7.44		1.88		2.91		3.66		44.57
2005	4.45		2.70		3.89		3.17		3.98		1.46		3.37		2.88		1.78		9.41	0	3.71		2.87		43.67
2006	4.55		2.64		0.56		1.83		12.48	52	10.09	28	3.58		3.20		1.72		4.50		5.80		1.89		52.84
2007	2.57		2.20		4.31		6.71	18	3.70		2.12		5.26		0.66		1.81		2.08		2.80		5.25		39.47
2008	2.69		7.94	8	4.66	7	2.98		2.73		3.46		6.00		4.47		6.45		1.41		4.57		7.10	23	54.46
2009	3.35		1.94		2.51		4.13		2.69		3.22		6.90		3.24		3.09		5.17		3.34		3.91		43.49
2010	2.91		3.34	0	14.87	105	1.78		2.90		3.18		2.66		5.75		1.80		3.90		2.96		3.61		49.66
2011	4.57		4.57		2.10		4.03		3.23		4.76		2.04		7.74		4.40		6.77		4.21		3.97		52.39
2012	2.67		1.00		1.21		3.09		3.43		4.71		3.88		3.08		4.10		2.62		1.01		5.93		36.73
2013	1.08		3.66	8	3.32		1.37		3.22		10.50		3.61		1.84		2.21		0.61		2.72		4.62		38.76
2014	3.24		4.13		4.48		3.24		2.86		2.62		4.57		1.75		0.70		5.83		5.27		6.56	10	45.25
2015	3.57		3.37		3.05	4	2.28		1.22		5.01		2.09		2.19		3.93		1.74		2.07		4.28		34.80
2016	3.27		4.17		3.16		2.91		2.83		1.33		0.87		1.72		1.38		5.46		2.70		3.25		33.05
2017	3.50		3.22		4.18		5.73	11	3.45		4.85		4.03		1.58		3.73		4.14		1.80		2.49		42.70
2018	4.92		3.76		5.07	26	4.62		1.90		2.96		4.55		4.65		5.12		3.78		9.26		2.72		53.31

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Centrifuge Services at the Deer Island Treatment Plant
Alfa Laval, Inc.
Contract S580

COMMITTEE: Wastewater Policy & Oversight

____ INFORMATION
__X__ VOTE

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

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

RECOMMENDATION:

To approve the award of Contract S580, Centrifuge Services, Deer Island Treatment Plant, to the lowest responsive bidder, Alfa Laval, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of $649,750.00, for a contract term of 730 calendar days from the Notice to Proceed.

DISCUSSION:

Centrifuges provide waste secondary sludge and scum thickening with the aid of polymers to help thicken the mixture. Waste sludge and scum coming out of secondary goes into the centrifuges at roughly 0.15% total solids, and is thickened to 5.5% total solids for introduction into the anaerobic digesters. Contract S580 will provide for maintenance and technical support services as required for six Alfa Laval PM95000 centrifuge units located in the Centrifuge Thickening Building at the Deer Island Treatment Plant. There are a total of 16 centrifuges installed on Deer Island, four of which serve as backup units (see Figure 1). Deer Island operates six units continuously on average. However, the plant can operate as few as four units or as many as nine units, depending on secondary waste sludge quantities.

The PM95000 units, manufactured by Alfa Laval, were installed under the Boston Harbor Project in 1998. Preventive maintenance and service to these centrifuges are essential to ensure continued operational reliability and optimum performance. Monthly preventive maintenance is currently performed by MWRA staff. However, in accordance with the manufacturer's recommended maintenance schedule, after approximately 25,000 run hours, these centrifuge units require a more extensive servicing utilizing highly specialized equipment. This service is complex, invasive, and requires a specialized skill set that only centrifuge experts can provide. Staff determine when the

units require servicing based on a unit's operating hours, reduced operational performance, or in the remote instance of an unexpected failure. In general, centrifuges are sent out for this specialized servicing every five to seven years.

Figure 1- Centrifuge Facility

Contract S580 is a two-year contract that will provide complete servicing for six centrifuge units. Deer Island staff will continue to perform monthly routine preventive maintenance on these units and the associated ancillary systems. The Contract includes allowances for technical support services to assist maintenance staff on an as-needed basis to address unique or unforeseen circumstances. The contract also includes an allowance for replacement parts.

Under this Contract, MWRA staff will remove each of the six centrifuge rotating assemblies from its frame (see Figure 2) and place it onto a flatbed trailer truck for shipment to the offsite servicing facility where the work will be completed. Upon completion of the work, the units will be shipped back to Deer Island and MWRA staff will then reinstall the equipment.

Figure 2 – Centrifuge Prepared for Shipment for Servicing

Procurement Process

Contract S580 was advertised and bid as a non-professional services contract. Bids were opened on February 6, 2019 with the following results:

Bidder	Bid Amount
Alfa Laval, Inc.	$649,750.00
Engineer's Estimate	**$671,750.00**

The Engineer's Estimate was formulated by utilizing cost criteria from three previously awarded centrifuge contracts. To date all maintenance services contracts, which have been competitively bid have been awarded to Alfa Laval.

Staff have determined that the difference between the bid price and the cost estimate is attributed to a labor rate estimated slightly higher than the contractor used in its bid.

Staff contacted Frazenburg, a subsidiary of Cenco LLC, and Centrysis, which were the only other qualified companies identified on the plan holders list. Frazenburg indicated that its closest maintenance facility is located in the Midwest and it is concerned about the logistics with transportation and the turnaround time for the work. Centrysis indicated it would not be competitive due to costs associated with purchasing parts from the original equipment manufacturer Alpha Laval, who is a direct competitor.

References were checked and found to be favorable. Staff have also reported complete satisfaction with Alfa Laval's past performance on previous MWRA contracts. All references indicated that Alfa Laval has shown that it possesses the expertise and skill set necessary to complete this type of project. Staff are of the opinion that Alfa Laval possesses the skill, ability, and integrity necessary to successfully complete the work under this contract. Therefore, staff recommend the award of this contract to Alfa Laval, Inc. as the lowest responsible and eligible bidder.

BUDGET/FISCAL IMPACT:

The FY19 Current Expense Budget includes $160,000 for the first year of this contract. Appropriate funding for the remaining years of the contract will be included in subsequent CEB requests.

MBE/WBE PARTICIPATION:

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

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Combined Heat and Power Study – Deer Island Treatment Plant
Black & Veatch Corporation
Contract 6963A

COMMITTEE: Wastewater Policy & Oversight

___ INFORMATION
_X_ VOTE

Michele S. Gillen
Director of Administration

David F. Duest, Director, Deer Island WWTP
Richard J. Adams, Manager, Engineering Services
Brian Driscoll, P.E., Senior Program Manager
Preparer/Title

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

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to award Contract 6963A, Combined Heat and Power Study, Deer Island Treatment Plant, to Black & Veatch Corporation, and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the amount of $1,149,500, for a contract term of 15 months from the Notice to Proceed.

BACKGROUND:

The Deer Island Wastewater Treatment Plant consists of a number of complex wastewater treatment processes that consume a significant amount of energy in the form of both heat and electricity. The main source of electrical power to operate Deer Island is transmitted from a 115 kV submarine cable spanning approximately six miles from Eversource's K Street Substation in South Boston, buried below the sea bed in Boston Harbor, to the HEEC Substation on Deer Island. The voltage in the cable is reduced from 115 kV to 13.8 kV through two transformers. This power is distributed to and fulfills the power requirements on Deer Island.

Should the connection to the electrical grid through the HEEC cable be lost, Deer Island can meet all of its on-island electrical demand by operating two 26 MW Pratt & Whitney FT-8 combustion turbine generators (CTGs) which are located inside the On-Site/Thermal Power Plant (see Figure 1). The CTGs, which operate on No. 2 ultra-low sulfur diesel fuel, are "black start" capable and can reach Deer Island's nominal load in 10 to 15 minutes. Deer Island is required by federal and state permits to have sufficient back-up power to operate the treatment plant at full operation.

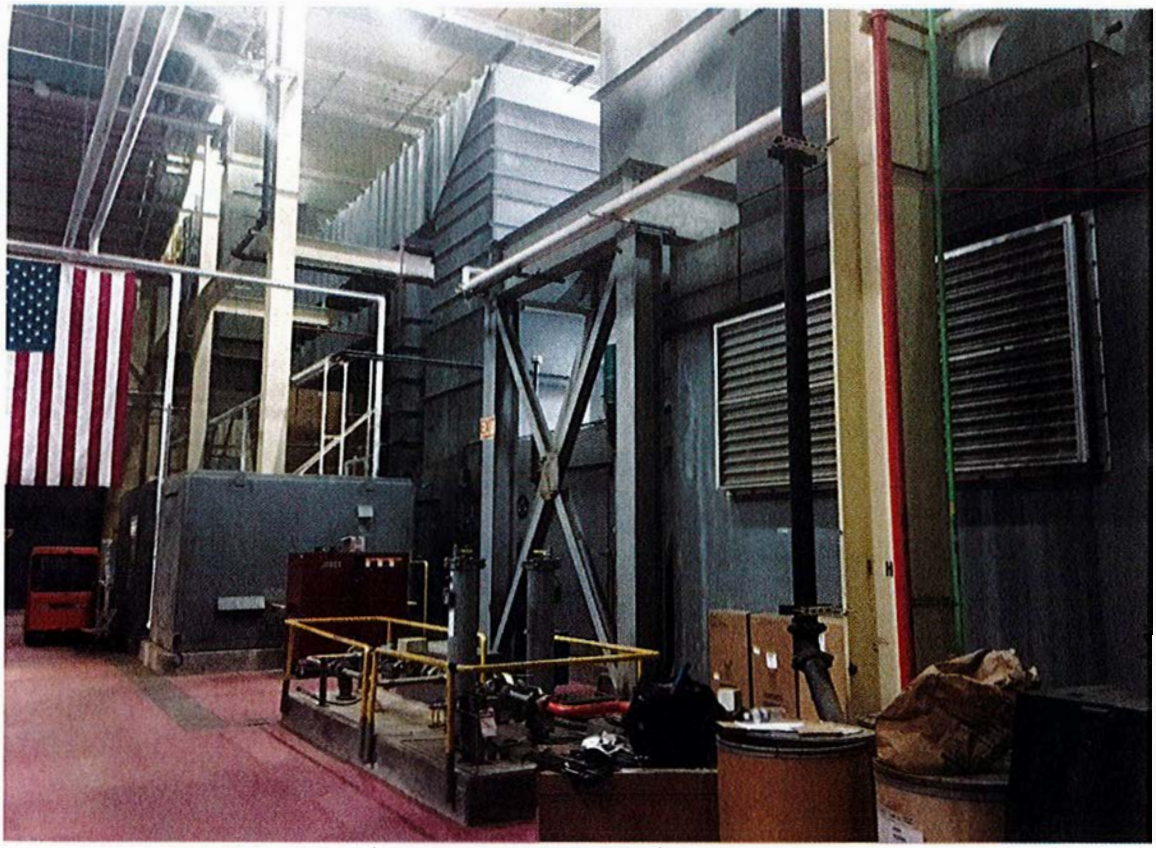


Figure 1 - Combustion Turbine Generator

Deer Island meets a significant portion of its energy requirements through on-site generation. Deer Island collects sludge from its primary and secondary treatment processes and transports it to 12 3-million gallon egg-shaped digesters for further processing by anaerobic microorganisms. The biogas generated within the digesters (primarily methane and carbon dioxide) is then piped into two 3-million-gallon capacity gas and digested sludge holding tanks. The gas is compressed and piped to the power plant. A digester gas purification system in the power plant removes hydrogen sulfide from the digester gas before it is fired in one of the two high pressure boilers to create steam.

Each boiler is designed to produce 150,000 pounds per hour of 700° superheated steam at 600 psig, which is passed through an 18 MW Steam Turbine Generator (see Figure 2) and a 1.2 MW Back Pressure Steam Turbine Generator to generate electricity. The low-pressure steam discharged from these generators also provides the heat required throughout Deer Island for the anaerobic digestion process and all other building heat demands, utilizing a system of heat exchangers connected to a continuously-operating hydronic heat loop distribution system. The boilers can also operate on No. 2 ultra-low-sulfur diesel fuel if, for any reason, digester gas is not available or during sustained extreme cold periods during the winter months when digester gas alone cannot meet the heating demand. Fuel is stored in two 750,000 gallon tanks located adjacent to the power plant.

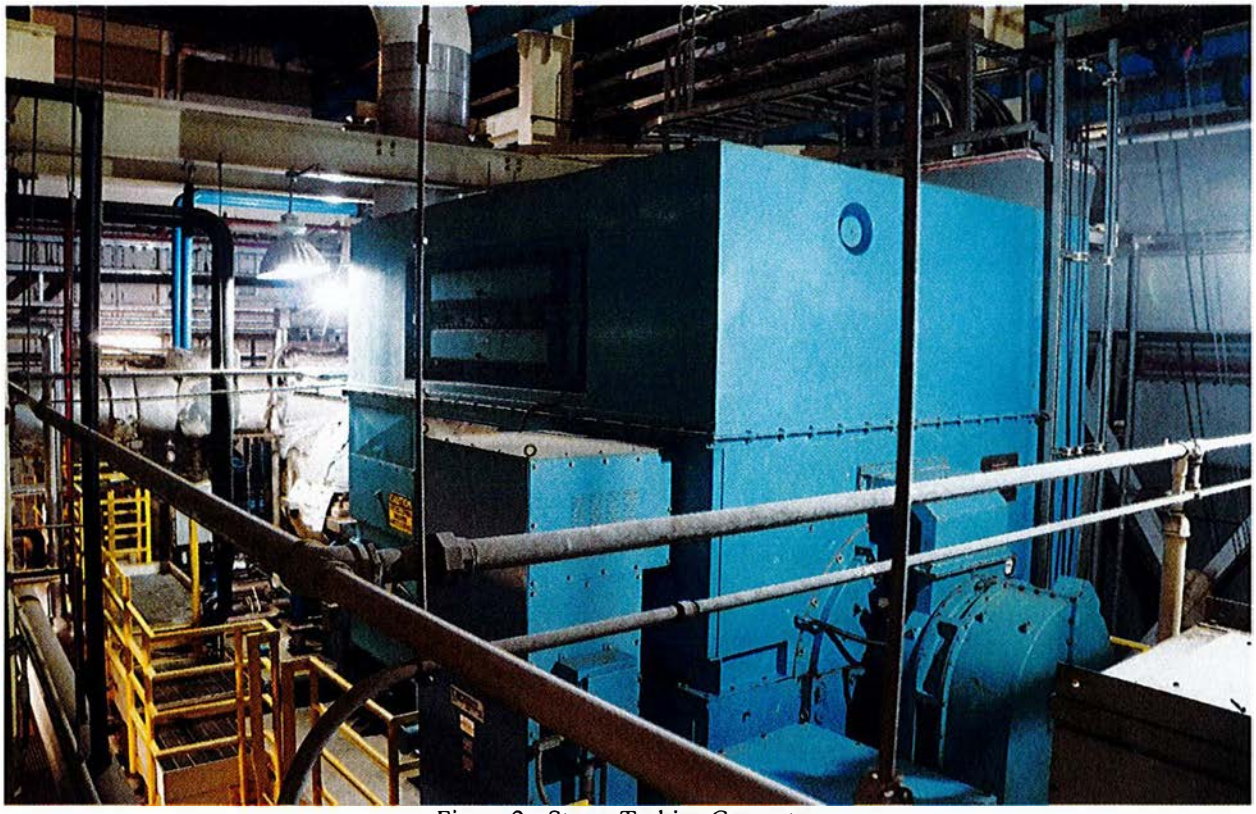


Figure 2 - Steam Turbine Generator

The current Deer Island combined heat and power system utilizes the methane gas from the digesters to meet the heat demands of the plant and the treatment process. As an additional benefit, electricity is generated. The current use of digester gas in the existing system meets greater than 94% of the heat needs of the plant and over 22% of the electrical demand of the plant and provides $16 to $24 million dollars in energy savings annually.

In 2013, MWRA contracted with CDM Smith to conduct a Residuals Technology Options Assessment (MWRA Contract 7147A). As part of this study, CDM Smith also performed a conceptual level evaluation of Deer Island's existing combined heat and power system to evaluate ways to improve its operation by gaining efficiencies in the use of its digester gas. CDM Smith concluded it was possible for Deer Island to change the concept of how it produced electricity and heat. CDM recommended MWRA replace its existing system with a new system that would primarily generate electricity and then perform heat recovery. This approach would maintain the ability to meet the plant's heat needs but also increase its electric power generation by a factor of 3-4 times, thereby bringing electrical generation by digester gas above 70% of Deer Island energy demand. The estimated payback for the new concept was in the order of 7 to 9 years. This was a high-level analysis which requires a more thorough analysis before moving forward with a specific plan to meet the Deer Island's long-term energy needs.

DISCUSSION:

The scope of this contract consists of evaluating the existing energy infrastructure of Deer Island and performing a comprehensive evaluation of multiple long-term energy supply and on-site generation alternatives to cost-effectively meet the energy demands of Deer Island while also

satisfying the critical regulatory requirement for an independent standby power system. The study will include evaluation of 13 energy system alternatives which range from an in-kind replacement of Deer Island's existing power assets at the end of their useful lives to a new combined heat and power system sized to meet all of Deer Island's heat and power needs using a combination of digester gas and natural gas. (Refer to Attachment A for additional information regarding the alternatives to be evaluated under this study.)

The evaluation performed for each alternative will consist of a conceptual design to confirm engineering viability, a performance simulation to predict system operation, and an economic analysis to determine economic benefits, including payback period so that a comparison between each alternative can be made.

The Consultant will prepare a report detailing the evaluation of each alternative. The Consultant will make recommendations for the alternative that most reliably and economically meets Deer Island's long-term energy needs and goals to maximize on-site generation and reduce the purchase of electricity. This information will be used by staff to develop future capital projects for Deer Island's combined heat and power systems.

Procurement Process

Staff issued a one-step Request for Qualifications/Proposal (RFQ/P) on May 16, 2018 that was publicly advertised in the Central Register, Boston Herald, Banner Publications and El Mundo. A pre-proposal meeting and site visit was held on October 11, 2019 and attended by representatives from three companies. Twenty-seven firms requested the RFQ/P, and on November 30, 2018, MWRA received proposals from two firms: Black & Veatch Corporation and Jacobs Engineering Group, Inc. Black & Veatch's proposal included a teaming arrangement with CDM Smith.

Participation by only two firms is explained chiefly by high experience thresholds intentionally set to reflect the importance and complexity of the project. Several firms did not propose due to insufficient experience in wastewater treatment facilities. One firm that did meet those experience requirements indicated that it did not have the energy marketplace expertise, necessitating too great a role for the energy subconsultant. One other firm stated that it could not meet the experience requirements for personnel.

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), Relevant Experience/Past Performance (20 points), Technical Approach (17 points), Capacity/Organization and Management Approach (10 points) and Minority and Women-Owned Business Enterprise Participation (3 points).

Proposed contract costs and levels of effort were:

Proposer	Proposed Contract Cost	Level of Effort
Jacobs	$856,196.77	4,434 hours
Engineer's Estimate	*$1,076,682.00*	*5,358 hours*
Black & Veatch	$1,149,500.00	5,978 hours

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

Proposers	Points	Total Rank*	Final Ranking
Black & Veatch	410	5	1
Jacobs	335	10	2

* Total Rank 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 voted unanimously to rank Black & Veatch first. Black & Veatch has extensive experience with complex, large-scale energy projects, including energy projects related to large wastewater treatment facilities. The firm proposed an excellent project team with significant relevant experience and past performance on several non-MWRA projects. The firm, as well as its subconsultant, CDM Smith, has extensive prior experience with MWRA. The Selection Committee was in agreement that Black & Veatch's technical approach was comprehensive and provided relevant details on how it would evaluate the alternatives. Black & Veatch's proposal included an appropriate number of total hours, which were distributed appropriately among highly experienced staff.

The Selection Committee members concluded that a number of key personnel proposed by Jacobs did not meet the professional experience and/or educational requirements established in the RFQ/P. The firm demonstrated the requisite general experience with large wastewater treatment plants; however, it was not able to show significant relevant experience for combined heat and power projects at wastewater treatment plants. The Selection Committee determined that Jacobs' technical approach was average with concerns raised regarding the robustness of the proposed modeling software. While the cost proposed by Jacobs was the lower of the two firms, Selection Committee members found that Jacobs' proposed level of effort was too low for key portions of the scope of services.

The Selection Committee members determined that Black & Veatch's proposal represents the best overall value (total cost and level of effort by a highly qualified team) of the two proposals. The Selection Committee members were of the opinion that Black & Veatch included the best team and the appropriate number of hours, by category, with the proper staffing mix (senior and junior level) to successfully complete the scope of services. The Selection Committee concluded that Black & Veatch's past experience on several similar projects was excellent.

Based on final rankings, the Selection Committee recommended award of this contract to Black & Veatch in an amount not to exceed $1,149,500.

BUDGET/FISCAL IMPACT:

The Final FY19 CIP includes $6,000,000 for Contract 6963, the Combined Heat and Power Design project. This Combined Heat & Power Study project was added in order to determine the most feasible and beneficial option for the Authority to pursue for subsequent design and construction of a new combined heat and power facility. The Final FY19 CIP contains adequate funding for the Combined Heat & Power Study.

MBE/WBE PARTICIPATION:

There are no MBE and WBE participation requirements for this project due to the specialized nature of the services.

ATTACHMENTS:

Attachment A – Summary of Combined Heat and Power Alternatives

ATTACHMENT A
SUMMARY OF COMBINED HEAT AND POWER ALTERNATIVES

Alternative Group 1

Alternative Group 1 includes the evaluation of the following Deer Island existing power assets, including replacement of in-kind assets at the end of their useful life. Alternative Group 1 includes the following four (4) alternatives:

- **Alternative 1A – Maintenance of Existing Equipment**
- **Alternative 1B – Maintenance of Existing Equipment with addition of Natural Gas**
- **Alternative 1C – Maintenance of Existing Equipment with Energy Storage**
- **Alternative 1D – Maintenance of Existing Equipment with Redundant Utility Feed and Energy Storage**

Alternative Group 2

This alternative group evaluates the addition of CHP fueled by the Deer Island's digester gas supply and is supplemented with diesel fuel when required to meet plant demand based on sizing requirements. Alternative Group 2 includes the following four (4) alternatives:

- **Alternative 2A – New Digester Gas CHP – Sized for Digester Gas Supply**
- **Alternative 2B – New Digester Gas/Diesel CHP – Sized for Heat Load**
- **Alternative 2C – New Digester Gas/Diesel CHP – Sized for Heat Load with Energy Storage**
- **Alternative 2D – New Digester Gas/Diesel CHP – Sized for Heat Load with Redundant Utility Feed and Energy Storage**

Alternative Group 3

This alternative group evaluates the addition of CHP that is sized to supply all of the electrical needs of Deer Island using a combination of natural gas and digester gas. All cases include the installation of a new natural gas service to Deer Island of a size sufficient to serve the alternative's thermal and electrical load. Alternative Group 3 includes the following three (3) alternatives:

- **Alternative 3A – CHP Sized for the Deer Island Electrical and Thermal Demand**
- **Alternative 3B – New CHP Sized for Electrical Export**

- **Alternative 3C – Repurpose CTGs into CHP**

Alternative Group 4

The Consultant will propose two (2) additional alternatives for analysis. The proposed alternatives will be a variation of the alternatives listed in Alternative Groups 1, 2 or 3. The proposed alternatives will require approval from staff before the Consultant is allowed to proceed.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Capital Improvements at the Biosolids Processing Facility
IPC Lydon, LLC
Contract 7153

COMMITTEE: Wastewater Policy & Oversight

____INFORMATION
__X__VOTE

Michele S. Gillen
Director of Administration

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

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

RECOMMENDATION:

To approve the award of Contract 7153, Capital Improvements, Biosolids Processing Facility, to the lowest responsible and eligible bidder, IPC Lydon, LLC. and to authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of $8,681,776.00, with a contract term of 500 calendar days from the Notice to Proceed.

DISCUSSION:

The Biosolids Processing Facility (Pelletizing Plant), located in the City of Quincy, was constructed in 1991 (see Figure 1). The facility allowed the MWRA to eliminate the decades-old practice of discharging sludge directly into Boston Harbor.

Sludge is collected by Deer Island Treatment Plant's primary and secondary treatment and is further processed in the anaerobic digesters. The remaining sludge from the digesters is temporarily stored and then pumped seven miles through a pair of conduits located in the Inter-Island Tunnel to the Pelletizing Plant. There it is dewatered in centrifuges and dried in thermal dryers. The resulting product is fertilizer pellets that are beneficially used and marketed as a Class A fertilizer.

The Pelletizing Plant is operated and maintained under contract to MWRA by New England Fertilizer Company (NEFCO). The current Contract began in 2001 and was extended by an amendment in 2015 to December 2020. The Contract amendment set aside $7 million for capital improvements that will ensure the continued reliable operation of the facility. MWRA is responsible for procurement of the construction contracts for the projects, while NEFCO is responsible for design and administration services. NEFCO retained Tighe and Bond to furnish design and related services for these projects. The $7 million capital improvement budget includes

payment to NEFCO of 15% of the construction contract award amount for design and construction administration services.

Figure 1 - Pelletizing Plant

MWRA staff and NEFCO identified three capital improvement projects to be included in the $7 million capital program. The first two projects: Contract 7151, Sludge Tank and Silo Coating, and Contract 7153A, Expedited Mechanical Improvements - Conveyors, have recently been completed. This Contract includes the third and final project that staff and NEFCO originally identified. This project also includes the removal and replacement of three sludge processing rotary dryer drums, which are included separately in MWRA's Capital Improvement Plan. Staff will be tracking the costs of the sludge processing dyers replacement separately.

The Pelletizing Plant contains six individual processing trains. Each train contains two mechanical conveyors to move and dry biosolids, for a total of 12 conveyors. Three of the mechanical conveyors were replaced under prior contracts. This contract will replace the remaining nine mechanical conveyors and furnish and install ancillary equipment including chutes, discharge boxes pneumatic slide gates, two dust collection systems, dome cover braces for four storage tanks, a nitrogen purge generator, an air compressor, a boiler and, in addition, replace three sludge processing rotary dryer drums. The Contractor will make required electrical and controls modifications for the replacement equipment.

Procurement Process

Contract 7153 was bid in accordance with Chapter 149 of Massachusetts General Laws and publicly advertised in the Central Register, Boston Herald, Banner Publications and El Mundo. General bids were received, opened and reviewed on February 15, 2019, from three contractors as follows:

Bidders	Bid Amount
Engineer's Estimate	*$7,850,200*
IPC Lydon, LLC	$8,681,776
Walsh Construction Company II,	$9,101,495
Waterline Industries Corp	$9,577,677

MWRA staff interviewed IPC Lydon, LLC and reviewed its bid in detail, which is approximately 10.6% higher than the Engineer's Estimate. Staff have determined that the bid is complete, reasonable, and includes the payment of prevailing wages as required. Staff have also determined that the Engineer's Estimate did not accurately reflect the cost of the electrical equipment for this work. The estimate for electrical equipment had a shortfall of approximately $700,000, which accounts for the majority of the difference between the Engineer's Estimate and the lowest bid. References for IPC Lydon, LLC were checked and found to be favorable. Based upon the information received during the interview, staff are of the opinion that IPC Lydon, LLC understands the scope, nature, and complexity of the project, has the skill, ability, and integrity necessary to complete the work, and is qualified to do so.

Therefore, staff recommend that Contract 7153 be awarded to IPC Lydon, LLC as the lowest responsible and eligible bidder.

BUDGET/FISCAL IMPACT:

The FY19 Capital Improvement Program includes $6,086,128 for the electrical and mechanical improvements. An additional $3,897,915 was budgeted in the Residuals Phase 2-Construction to cover the costs associated with the dryer drum replacements.

MBE/WBE PARTICIPATION:

The MBE and WBE participation requirements for this contract were established at 7.24% and 3.6%, respectively. The Affirmative Action and Compliance Unit has reviewed the bid and has determined that it meets these requirements.

MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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

WATER POLICY & OVERSIGHT COMMITTEE MEETING

to be held on

Wednesday, March 20, 2019

Chair: B. Peña
Vice-Chair: C. Cook
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. Information

1. Local Water System Assistance Program Annual Update

B. Approvals

1. Memorandum of Agreement Between the Authority and the City of Newton: Rehabilitation of Sections 23, 24 and 47 Water Mains, Contract 6392

C. Contract Awards

1. Program Support Services for the Metropolitan Tunnel Redundancy Program: JCK Underground, Inc., Contract 7655

D. Contract Amendments/Change Orders

1. Southern Extra High Pipeline – Section 111 (Dedham North): P. Gioioso and Sons, Inc., Contract 7504, Change Order 6

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the

Water Policy and Oversight Committee

February 20, 2019

A meeting of the Water Policy and Oversight Committee was held on February 20, 2019 at the Authority headquarters in Charlestown. Committee Chair Peña presided. Present from the Board were Ms. Wolowicz and Messrs. Carroll, Cook, Cotter, Flanagan, Foti, Pappastergion, Vitale and Walsh. Among those present from the Authority staff were Frederick Laskey, Carolyn Francisco Murphy, David Coppes, Carolyn Fiore, John Gregoire, John Colbert, Kathleen Cullen, Corinne Barrett, Vincent Spada and Kristin MacDougall. The meeting was called to order at 11:47 a.m.

Contract Awards

* Dam Safety Compliance and Consulting Services – Repairs, Design and Engineering Services During Construction: GZA Environmental, Inc., Contract 7614

Staff made a presentation. (Mr. Foti joined the meeting. Mr. Flanagan briefly left and returned to the meeting.)

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

* Chestnut Hill Emergency Pumping Station Improvements Design and Engineering Services During Construction, Hazen and Sawyer, Contract 7574

Staff made a presentation. There was discussion and questions and answers.

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

Contract Amendments/Change Orders

* Wachusett Aqueduct Pumping Station, BHD/BEC JV 2015, A Joint Venture, Contract 7157, Change Order 55

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

The meeting adjourned at 12:07 p.m.

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* Committee recommendation approved by the Board on February 20, 2019

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Local Water System Assistance Program Annual Update

COMMITTEE: Water Policy & Oversight

_X_ INFORMATION
____ VOTE

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

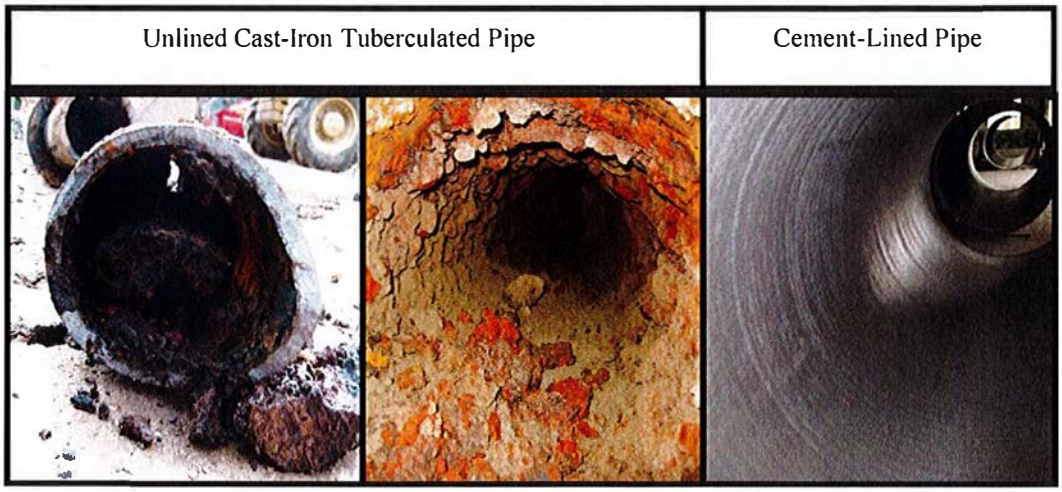
David W. Coppes, P.E.
Chief Operating Officer

RECOMMENDATION:

For information only.

DISCUSSION:

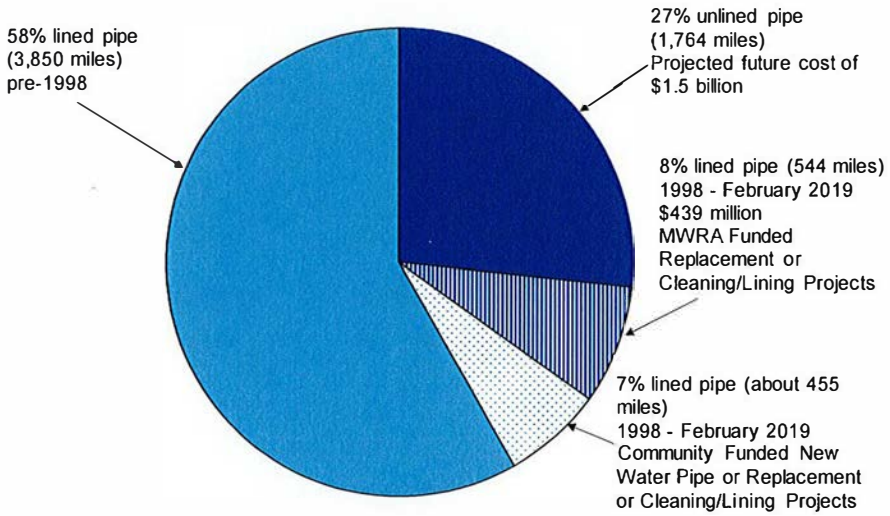
MWRA's goal in providing financial assistance to member communities is to improve local water systems to help maintain high water quality as it passes from MWRA's facilities through local pipelines to customers' taps. Older water mains, particularly those constructed of unlined cast-iron pipe, need to be replaced or cleaned and lined to prevent tuberculation (rust build-up), loss of disinfectant residual, and potential bacteria growth. Replacement of lead service lines improves water quality by reducing the risk that lead can leach into the water consumed in customer's homes.



Prior to 1998, 3,850 miles (58%) of the 6,613-mile regional distribution system was lined water pipe. Since 1998, MWRA's community financial assistance programs (including the $30 million pilot program in 1998/99) have invested $439 million in local water distribution systems and

resulted in the replacement or cleaning and lining of 544 miles of water mains. Additional community-only funded rehabilitation or new pipeline projects have added 455 miles of lined water mains. Approximately 1,764 miles (27%) of locally-owned distribution systems remain unlined, representing a regional need of about $1.5 billion for future water main rehabilitation. Attachment 1 provides individual statistics for the total miles of lined and unlined water main in each member communities' water system.

Regional Water System Lined and Unlined Pipe
6,613 Miles of Community Water Mains
Updated as of February 2019



Update on Distribution of Water Loan Funds

Under the Local Water System Assistance Program, the Board has authorized a total of $724 million for community water loans from FY01 through FY30. Loan funds are allocated to member water communities based on a combination of their percent share of unlined pipe and wholesale water charge. MWRA's partially supplied communities receive pro-rated shares based on their percentage use of MWRA water. Through February 2019, $409 million in 10-year interest-free loans have been distributed to member communities to finance 446 projects that will help maintain high water quality in local distribution systems. Of the 446 total projects, 386 have been completed and 80 are in construction. Community loans are repaid to MWRA over a ten-year period. All scheduled community loan repayments have been made, a total of $260 million to date. Forty-two of the 45 eligible member water communities[1] have participated in the Program.

[1] MWRA has a total of 50 water communities (with Dedham/Westwood Water District counted as one). Under MWRA's Local Water System Assistance Program, 45 are allocated loan funds. The five ineligible water communities have special case considerations: Cambridge receives water on an emergency-only basis; Lynn receives water only for the GE plant; and Clinton, Leominster, and Worcester (also emergency only) receive untreated water from the Wachusett Reservoir. The three Chicopee Valley Aqueduct (CVA) communities (Chicopee, South Hadley FD#1, and Wilbraham) are allocated funds under Phases 2 and 3 of the Loan Program, but were not originally allocated loan funds under the Phase I – Local Pipeline Assistance Program, as that program was initiated as part of the treatment decision for the John J. Carroll Water Treatment Plant.

The photos below are typical examples of local water system rehabilitation construction work funded through the MWRA Local Water System Assistance Program.

Water Main Replacement Construction

Old Unlined Cast Iron Water Main Pipe

Rehabilitated Water Storage Tank

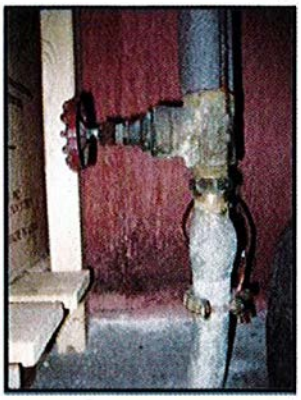
The Phase 1 - Local Pipeline Assistance Program began in FY01 and was completed at the end of FY13. It provided $222.3 million in 10-year interest-free loans to water system communities for water main replacement, cleaning and lining projects, and lead service line replacements.

The Phase 2 - Local Water System Assistance Program commenced in FY11 and distributions are approved through FY23. The Phase 2 expansion of the water loan program added $210 million in interest-free loans for member water communities (including a $10 million allocation for the three Chicopee Valley Aqueduct (CVA) communities – Chicopee, South Hadley FD#1, and Wilbraham). Through February 2019, $164.3 million in Phase 2 funds have been distributed and $45.7 million remain to be distributed. Twenty-one communities have received their entire Phase 2 funding allocation (see Attachment 2 - Allocation and Fund Utilization by Community).

The Phase 3 - Local Water System Assistance Program commenced in FY18 and distributions are approved through FY30. The Phase 3 expansion of the water loan program added $292 million in interest-free loans for member water communities (including a $14 million allocation for the three CVA communities). Through February 2019, $22.5 million in Phase 3 funds have been distributed and $269.5 million remain to be distributed (see Attachment 2 - Allocation and Fund Utilization by Community).

The majority of financial assistance loans (95%) under Phases 2 and 3 have continued to fund replacement/rehabilitation of unlined water mains, lead service line replacements, water tank rehabilitation, and other water quality projects. In addition, some communities have undertaken system efficiency (Tier 2) projects such as water meter replacements, automated meter reading systems, and booster pump station rehabilitation.

Lead Service Line Replacement Loan Program



In March 2016, the Board approved an enhancement to the Local Water System Assistance Program to provide up to an additional $100 million in 10-year interest-free loans to communities solely for efforts to fully replace lead service lines. Under MWRA's Lead Service Line Replacement Loan Program, each community can develop its own program tailored to its local circumstances. Through February 2019, MWRA has distributed a total of $10.1 million in lead loans to nine communities:

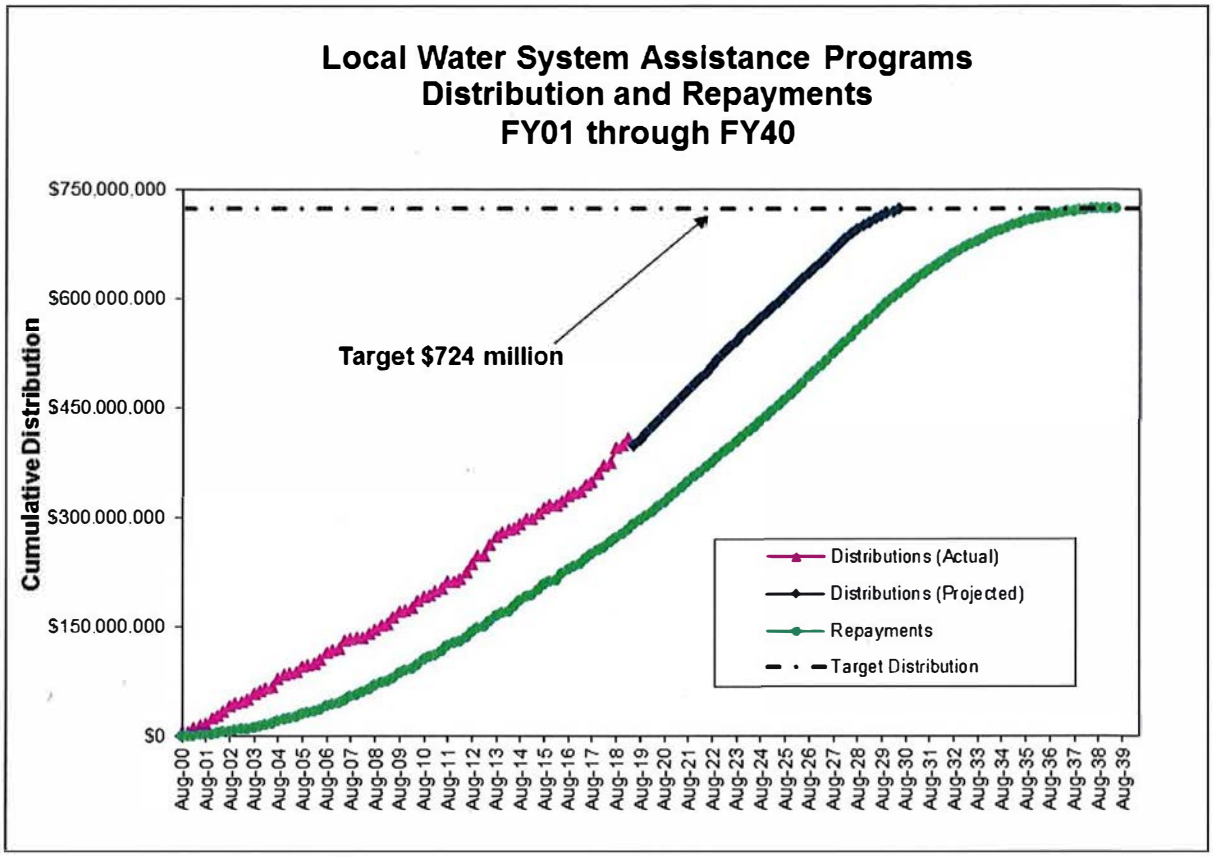
- Quincy: $1.5 million in FY17;
- Winchester: $500,000 in FY17 and $500,000 second phase in FY18;
- Newton: $4.0 million in FY17;
- Marlborough: $1.0 million in FY18;
- Revere: $195,000 in FY18;
- Winthrop: $284,000 in FY18;
- Needham: $1.0 million in FY18;
- Everett: $1.0 million in FY19; and
- Chelsea: $100,000 in FY19.

Details on the Lead Service Line Replacement Loan Program were recently presented to the Board in January 2019.

BUDGET/FISCAL IMPACT:

The FY19 CIP includes an overall net budget of zero dollars for both the Local Water System Assistance Program and the Lead Service Line Replacement Loan Program because community loans are offset by repayments over time. However, depending on the timing and level of community loan requests, annual loan distributions can fluctuate, sometimes causing over-spending or under-spending (versus budget) for any particular year. The Local Water System Assistance Program Guidelines restrict each community's annual allocation to the larger of: (1) 10% of their total allocation, or (2) $500,000. If not utilized in a given year, annual allocations roll-over and accumulate up to the community's total allocation. The annual allocation restrictions are intended to limit MWRA's annual financial exposure for community loan distributions.

The program budget target is $724 million for water system rehabilitation loan distributions and repayments (not including the $100 million for additional lead service line replacement loans). To date, $409 million in loans have been distributed and community loan repayments are $260 million. As community loans are repaid, the funds are deposited into MWRA's construction fund. The FY19 CEB budget includes $4.8 million for the cost of the interest as a separate line item under Debt Service. The graph below presents loan funding distributions (actual and projected) and corresponding repayments for the water system loans program - FY01 through FY40.



MBE/WBE PARTICIPATION:

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

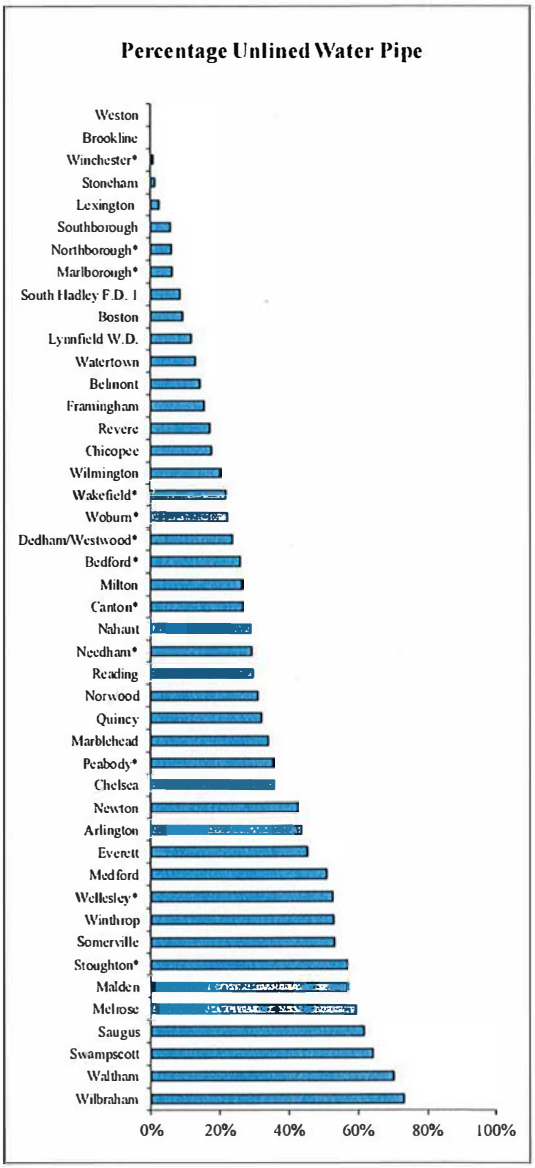
ATTACHMENTS:

Attachment 1 – Lined and Unlined Pipe by Community
Attachment 2 – Phase 2 and 3 – Local Water System Assistance Program Allocation and Fund Utilization by Community

ATTACHMENT 1
MWRA LOCAL WATER SYSTEM ASSISTANCE PROGRAM
LINED AND UNLINED PIPE BY COMMUNITY
THROUGH FEBRUARY 2019

Community	Total Miles of Pipe	Miles of Lined Pipe	Miles of Unlined Pipe	Percent Unlined
Arlington	132	74	58	44%
Bedford*	85	63	22	26%
Belmont *	93	80	13	14%
Boston	1011	916	95	9%
Brookline	140	140	0	0%
Canton*	128	94	34	27%
Chelsea	59	38	21	36%
Chicopee	269	221	48	18%
Dedham/Westwood*	203	155	48	24%
Everett	68	37	31	45%
Framingham	276	233	43	16%
Lexington	165	161	4	2%
Lynnfield W.D.	29	26	3	12%
Malden	121	52	69	57%
Marblehead	97	64	33	34%
Marlborough*	180	169	11	6%
Medford	144	71	73	51%
Melrose	82	33	49	60%
Milton	138	102	36	26%
Nahant	23	16	7	29%
Needham*	135	95	40	29%
Newton	319	183	136	43%
Northborough*	65	61	4	6%
Norwood	119	82	37	31%
Peabody*	208	134	74	36%
Quincy	240	163	77	32%
Reading	114	80	34	30%
Revere	107	89	18	17%
Saugus	125	48	77	62%
Somerville	125	59	66	53%
South Hadley F.D. 1	83	76	7	9%
Southborough	87	82	5	6%
Stoneham	80	79	1	1%
Stoughton*	151	65	86	57%
Swampscott	58	21	37	64%
Wakefield*	114	89	25	22%
Waltham	150	45	105	70%
Watertown	82	71	11	13%
Wellesley*	150	71	79	53%
Weston	111	111	0	0%
Wilbraham	74	20	54	73%
Wilmington	126	101	25	20%
Winchester*	112	111	1	1%
Winthrop	45	21	24	53%
Woburn*	190	147	43	22%
TOTAL	6,613	4,849	1,764	27%

* Partially Served Communities



ATTACHMENT 2
MWRA LOCAL WATER SYSTEM ASSISTANCE PROGRAM
ALLOCATION AND FUND UTILIZATION BY COMMUNITY
THROUGH FEBRUARY 2019

Community	Community Total Phase 2 Allocation	Phase 2 Funds Distributed Thru Dec 18	Total Remaining Phase 2 Funds	Community Total Phase 3 Allocation	Community Phase 3 Annual Allocation	Phase 3 Allocation To Date (Year 2)	Phase 3 Funds Distributed Thru Dec 18	Phase 3 Funds Currently Available	Total Phase 2 and 3 Funds Available
Arlington	$6,225,000	$4,400,000	$1,825,000	$8,687,000	$868,700	$1,737,400	$0	$1,737,400	$3,562,400
Bedford *	$2,418,000	$2,418,000	$0	$3,649,000	$500,000	$1,000,000	$0	$1,000,000	$1,000,000
Belmont	$3,477,000	$3,477,000	$0	$3,852,000	$500,000	$1,000,000	$1,000,000	$0	$0
Boston	$38,754,000	$38,754,000	$0	$52,787,000	$5,278,700	$10,557,400	$6,420,098	$4,137,302	$4,137,302
Brookline	$3,426,000	$660,000	$2,766,000	$4,585,000	$500,000	$1,000,000	$0	$1,000,000	$3,766,000
Canton *	$3,216,000	$2,000,000	$1,216,000	$2,971,000	$500,000	$1,000,000	$0	$1,000,000	$2,216,000
Chelsea	$3,814,000	$3,011,200	$802,800	$5,039,000	$503,900	$1,007,800	$0	$1,007,800	$1,810,600
Dedham/Westwood *	$503,000	$503,000	$0	$849,000	$500,000	$849,000	$0	$849,000	$849,000
Everett	$4,672,000	$4,441,000	$231,000	$6,298,000	$629,800	$1,259,600	$0	$1,259,600	$1,490,600
Framingham	$7,357,000	$7,357,000	$0	$9,003,000	$900,300	$1,800,600	$1,800,600	$0	$0
Lexington	$3,024,000	$1,145,015	$1,878,985	$3,777,000	$500,000	$1,000,000	$0	$1,000,000	$2,878,985
Lynnfield Water Dist.	$1,396,000	$1,146,800	$249,200	$1,678,000	$500,000	$1,000,000	$0	$1,000,000	$1,249,200
Malden	$7,272,000	$1,774,000	$5,498,000	$10,605,000	$1,060,500	$2,121,000	$0	$2,121,000	$7,619,000
Marblehead	$4,237,000	$0	$4,237,000	$5,112,000	$511,200	$1,022,400	$0	$1,022,400	$5,259,400
Marlborough *	$1,917,000	$1,283,800	$633,200	$3,512,000	$500,000	$1,000,000	$0	$1,000,000	$1,633,200
Medford	$6,959,000	$2,075,000	$4,884,000	$10,800,000	$1,080,000	$2,160,000	$0	$2,160,000	$7,044,000
Melrose	$3,988,000	$3,988,000	$0	$6,865,000	$686,500	$1,373,000	$431,000	$942,000	$942,000
Milton	$4,123,000	$3,500,000	$623,000	$5,967,000	$596,700	$1,193,400	$0	$1,193,400	$1,816,400
Nahant	$1,490,000	$1,142,100	$347,900	$1,835,000	$500,000	$1,000,000	$0	$1,000,000	$1,347,900
Needham *	$794,000	$794,000	$0	$1,894,000	$500,000	$1,000,000	$337,265	$662,735	$662,735
Newton	$13,602,000	$10,881,600	$2,720,400	$20,837,000	$2,083,700	$4,167,400	$0	$4,167,400	$6,887,800
Northborough *	$1,048,000	$986,053	$61,947	$1,450,000	$500,000	$1,000,000	$0	$1,000,000	$1,061,947
Norwood	$4,395,000	$4,395,000	$0	$6,296,000	$629,600	$1,259,200	$1,259,200	$0	$0
Peabody *	$1,089,000	$1,089,000	$0	$2,756,000	$500,000	$2,756,000	$2,756,000	$0	$0
Quincy	$10,505,000	$10,505,000	$0	$14,252,000	$1,425,200	$2,850,400	$1,174,459	$1,675,941	$1,675,941
Reading	$4,146,000	$4,146,000	$0	$5,073,000	$507,300	$1,014,600	$0	$1,014,600	$1,014,600
Revere	$5,034,000	$5,034,000	$0	$5,315,000	$531,500	$1,063,000	$1,016,000	$47,000	$47,000
Saugus	$6,621,000	$4,012,054	$2,608,946	$9,688,000	$968,800	$1,937,600	$0	$1,937,600	$4,546,546
Somerville	$7,419,000	$5,898,234	$1,520,766	$10,791,000	$1,079,100	$2,158,200	$0	$2,158,200	$3,678,966
Southborough	$1,512,000	$0	$1,512,000	$1,920,000	$500,000	$1,000,000	$0	$1,000,000	$2,512,000
Stoneham	$2,339,000	$2,339,000	$0	$2,742,000	$500,000	$1,000,000	$0	$1,000,000	$1,000,000
Stoughton*	$2,506,000	$2,506,000	$0	$3,547,000	$500,000	$1,000,000	$0	$1,000,000	$1,000,000
Swampscott	$3,755,000	$3,755,000	$0	$5,276,000	$527,600	$1,055,200	$194,468	$860,732	$860,732
Wakefield *	$2,325,000	$2,325,000	$0	$3,356,000	$500,000	$1,000,000	$1,000,000	$0	$0
Waltham	$10,293,000	$5,520,201	$4,772,799	$14,904,000	$1,490,400	$2,980,800	$0	$2,980,800	$7,753,599
Watertown	$2,978,000	$2,978,000	$0	$3,745,000	$500,000	$1,000,000	$500,000	$500,000	$500,000
Wellesley *	$2,350,000	$241,569	$2,108,431	$3,268,000	$500,000	$1,000,000	$0	$1,000,000	$3,108,431
Weston	$1,625,000	$1,005,000	$620,000	$2,295,000	$500,000	$1,000,000	$0	$1,000,000	$1,620,000
Wilmington *	$611,000	$611,000	$0	$1,306,000	$500,000	$1,000,000	$0	$1,000,000	$1,000,000
Winchester *	$882,000	$775,000	$107,000	$1,394,000	$500,000	$1,000,000	$0	$1,000,000	$1,107,000
Winthrop	$3,312,000	$3,312,000	$0	$4,119,000	N/A +	$4,119,000	$4,119,000	$0	$0
Woburn *	$2,591,000	$2,591,000	$0	$3,905,000	$500,000	$1,000,000	$0	$1,000,000	$1,000,000
SUBTOTAL	**$200,000,000**	**$158,775,626**	**$41,224,374**	**$278,000,000**	**$32,359,500**	**$70,443,000**	**$22,008,090**	**$48,434,910**	**$89,659,284**
Chicopee	$7,153,000	$4,035,600	$3,118,000	$9,774,000	$977,400	$1,954,800	$0	$1,954,800	$5,072,800
South Hadley F.D. 1	$1,538,000	$1,538,000	$0	$2,026,000	$500,000	$1,000,000	$500,000	$500,000	$500,000
Wilbraham	$1,309,000	$0	$1,309,000	$2,200,000	$500,000	$1,000,000	$0	$1,000,000	$2,309,000
SUBTOTAL	**$10,000,000**	**$5,573,000**	**$4,427,000**	**$14,000,000**	**$1,977,400**	**$3,954,800**	**$500,000**	**$3,454,800**	**$7,881,800**
TOTAL	**$210,000,000**	**$164,348,626**	**$45,651,374**	**$292,000,000**	**$34,336,900**	**$74,397,800**	**$22,508,090**	**$51,889,710**	**$97,541,084**

* Partially Served Communities

+ Exempt per Board Approval

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Memorandum of Agreement between the Authority and the City of Newton
Rehabilitation of Sections 23, 24 and 47 Water Mains
Contract 6392

COMMITTEE: Water Policy & Oversight

____ INFORMATION
_X_ VOTE

Michele S. Gillen
Director of Administration

John P. Colbert, P.E., Chief Engineer
Ester N. Lwebuga P.E., Program Manager
Preparer/Title

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

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to execute a Memorandum of Agreement with the City of Newton, substantially in the form attached hereto, related to reimbursement to the Authority for construction costs associated with the replacement of a City of Newton 20-inch diameter water main.

DISCUSSION:

MWRA's Section 23, 24, and 47 water mains are part of the Southern High Service System. The water mains are 101 to 122 year-old cast iron pipes serving Boston and Watertown and provide redundancy for parts of Newton. Rehabilitation of these water mains will:

- improve water quality by reducing the length of unlined cast iron water mains in the Authority's system;
- improve reliability of the water mains;
- restore hydraulic looping and redundancy between the Authority's Weston Aqueduct Supply Main 2 and 4; and
- facilitate conveyance of high service water from Shaft 7 of the City Tunnel to the communities of Boston, Newton, and Watertown.

The work under future Contract 6392 (currently under design) will include cleaning and cement mortar lining of approximately:

- 4,500 linear feet of Section 23, a 36-inch diameter cast iron water main;
- 11,000 feet of Section 24 and Section 47, 20-inch cast iron water mains; and
- 500 feet of 20-inch steel water main along Section 24.

The work will also include installation of replacement pipe for approximately 4,200 feet of 36-inch ductile iron Section 23 water main, 6,200 feet of 24-inch ductile iron Section 24 water main,

including valves and appurtenances, and replacement of the check valve assembly at revenue Meter 120 to Boston.

The City of Newton has a 140-year-old, 20-inch diameter cast iron water main, approximately 2,400 linear feet, running parallel to the MWRA's Section 23 and Section 24 in Ward Street. The City requested that MWRA include replacement of this portion of its 20-inch water main as part of Contract 6392 and has agreed to reimburse MWRA for the added construction cost to install this water main at an estimated cost of $2,700,000. Actual costs will be determined after construction bid award.

Advertisement of Contract 6392 has been delayed as work to relocate National Grid gas lines to accomplish the water pipe installation in approximately 60% of the pipe route was held up during the recent labor lockout. When National Grid provides a planned schedule for gas pipe relocation, this contract will be advertised.

Proposed Cost Sharing Agreement

The design of the project is now complete and staff have negotiated an agreement with the City for the added construction cost of its work as detailed in the attached Memorandum of Agreement. The bid documents for Contract 6392 will include a separate line item for replacement of approximately 2,400 linear feet of the City's 20-inch water main. The City will be responsible for 100 percent of the construction cost and for police detail services arising out of the work of this item.

Other Major Provisions of the Agreement

- The City has contracted directly with MWRA's consultant for its portion of design, construction administration, and resident inspection of its work.

  The Authority will require its selected contractor for the project to name the City as an additional insured on all insurance policies required to be provided by such contractor for the project, except for Workers Compensation.

- The City will be responsible for its share of any potential construction change orders.

BUDGET/FISCAL IMPACT:

The FY19 CIP includes a budget of $14,322,000 for Contract 6392.

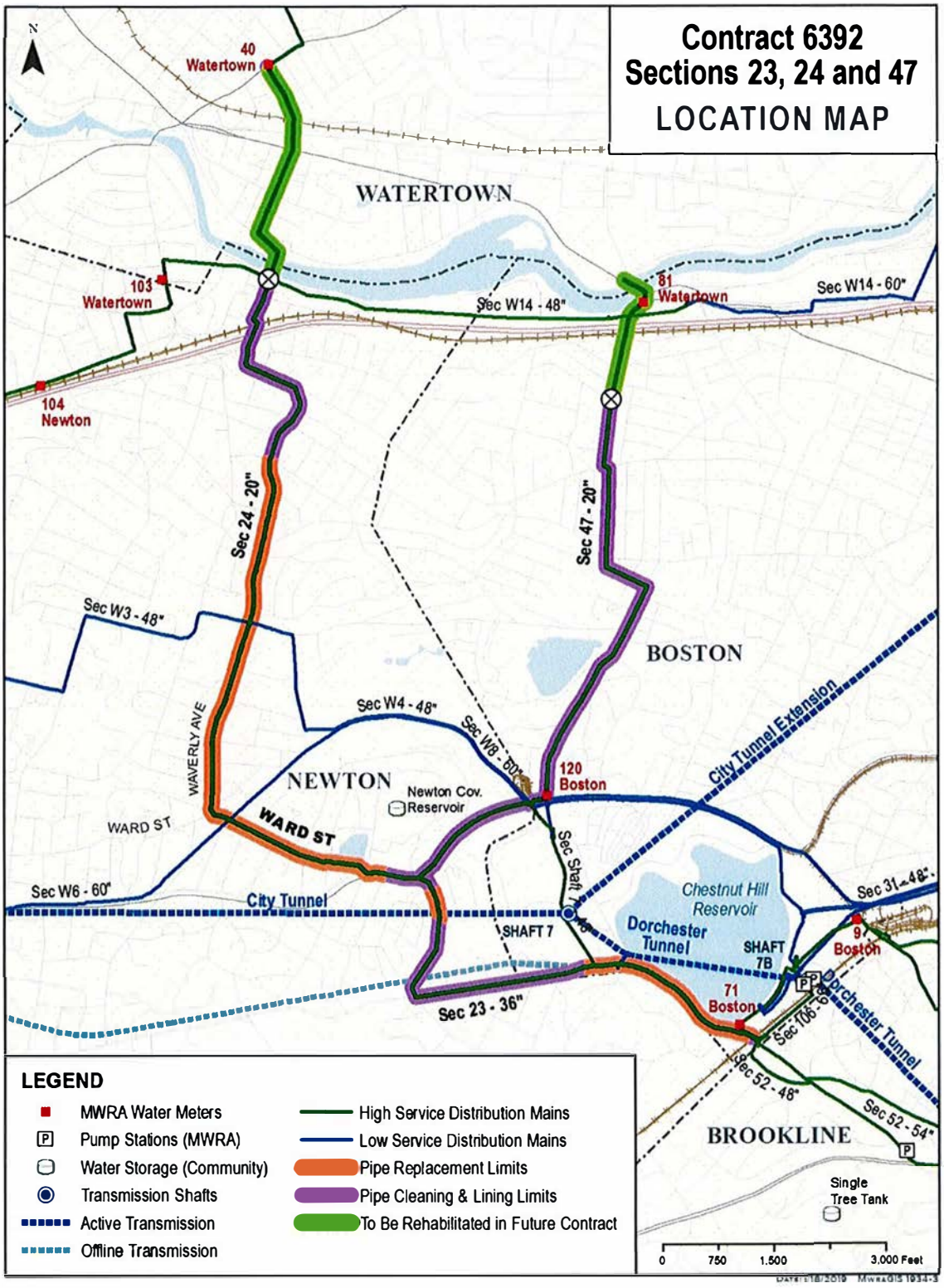
MBE/WBE PARTICIPATION:

The D/MBE and D/WBE participation requirements for this contract has been established by the Affirmative Action and Compliance Unit at 4.2% and 4.5% respectively.

ATTACHMENTS:

Attachment A - Sections 23, 24 and 47 Location Map
Attachment B - Draft Memorandum of Agreement

Attachment A



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

This MEMORANDUM OF AGREEMENT ("MOA") is made this _____ day of _____, 2019, by and between the MASSACHUSETTS WATER RESOURCES AUTHORITY ("MWRA"), a body corporate and politic and an independent authority pursuant to St. 1984, c. 372 of the laws of the Commonwealth of Massachusetts, as amended, and the CITY OF NEWTON ("City of Newton"), duly incorporated as a City under the laws of the Commonwealth of Massachusetts (each individually a "Party" and collectively the "Parties").

RECITALS

WHEREAS, MWRA is planning to rehabilitate Sections 23, 24, and 47 water pipelines in its Southern High Service System, which provide water to the communities of Boston, Newton, and Watertown, as part of MWRA Contract 6392 – Rehabilitation of Sections 23, 24, and 47 Water Mains ("Contract");

WHEREAS, as part of the Contract, MWRA is planning to: (a) replace approximately 4,200 linear feet of the 36-inch cast iron Section 23 water pipeline with a new 36-inch water pipeline and rehabilitate approximately 4,500 linear feet of 36-inch cast iron Section 23 water pipeline in the City of Boston and City of Newton; (b) replace approximately 6,200 linear feet of the 20-inch cast iron Section 24 water pipeline with a new 24-inch water pipeline and rehabilitate approximately 3,200 linear feet of 20-inch cast iron Section 24 water pipeline in the City of Newton; and (c) rehabilitate approximately 8,200 linear feet of 20-inch cast iron Section 47 water pipeline in the City of Newton and City of Boston;

WHEREAS, the City of Newton would like to replace approximately 2,400 linear feet of the 20-inch municipal water pipeline in Ward Street in Newton from Manet Road to Waverly Avenue, which runs parallel to MWRA's proposed replacement of Sections 23 and 24 water mains in Ward Street ("City of Newton Work");

WHEREAS, the City of Newton has requested that MWRA include the City of Newton Work in the Contract;

WHEREAS, the Parties have determined that it is in their mutual best interests to: (a) add the City of Newton Work to the Contract; and (b) have MWRA advertise and accept bids for the Contract;

WHEREAS, MWRA plans to seek authorization from its Board of Directors to award the Contract and issue a Notice to Proceed in or about April, 2019; and

WHEREAS, the Parties wish to enter into this MOA regarding certain aspects of the construction, as well as payment for and sharing of costs with respect to the City of Newton Work.

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

1. PROJECT RESPONSIBILITIES AND ALLOCATION OF COSTS

1.1 MWRA will, in coordination with its design consultant, complete the design of the rehabilitation of Sections 23, 24, and 47 water mains project (the "Project") and include the scope of this work in the Contract documents. The City of Newton has contracted with the same design consultant as MWRA for the design and construction administration engineering services for the City of Newton Work, and the scope of this work will also be included in the Contract documents. The City of Newton shall be responsible for the design and construction administrative costs associated with the City of Newton Work and will pay its design consultant directly for any design and construction administrative costs.

1.2 The bid documents for the Contract will include a separate line item for all the work associated with the installation of the City of Newton Work. All work described in this section is detailed in the plans and specifications dated October 2018 for the Contract. The City of Newton shall pay MWRA 100 percent of this line item, which includes, but is not limited to, the replacement of the approximately 2,400 linear feet of 20-inch pipeline, temporary water bypassing, side connections, replacement of drain lines and sanitary sewers, temporary and permanent patching of pavement, and disposal of contaminated soils. The City of Newton shall also pay MWRA for police detail services and any extra and change order work, subject and pursuant to the requirements set forth in section 3 herein, arising out of or related to the City of Newton Work. The City of Newton shall make payments to MWRA in accordance with Section 6 of this MOA.

1.3 Consistent with the provisions of G.L. c. 44, §31C, the City of Newton certifies that it has duly appropriated funds for the cost of the City of Newton Work, based upon its current cost estimate of $2.7 million, plus additional costs for police detail services. MWRA shall notify the City of Newton of the bid results for the Contract prior to award. Following the bid opening for the Contract and prior to any contract award by MWRA, the City of Newton shall re-certify that it has duly appropriated funds to cover all costs for both the design and construction of the City of Newton Work.

1.4 In the Contract documents, MWRA shall require its selected contractor for the Project to name the City of Newton as an additional insured on all insurance policies required to be provided by such contractor for the Project, except for Workers Compensation.

1.5 In the Contract documents, MWRA shall cause its contractor to warrant, for the benefit of the City of Newton, the City of Newton Work to be installed as part of MWRA Contract 6392 against defects in materials and workmanship for a period of one (1) year from substantial completion of the Project in accordance with standard MWRA terms.

Provision shall be made for the contractor to repair or replace all defective work within said one-year period.

1.6 In the Contract documents, MWRA shall cause its contractor to indemnify and hold harmless the City of Newton to the same extent that MWRA requires its contractor to indemnify and hold harmless the MWRA.

1.7 The City of Newton shall provide and pay for its own resident inspection solely for that portion of the Project concerning the installation of the City of Newton Work. MWRA agrees that it shall provide access to the City of Newton's inspector at the work site and shall cooperate with the City of Newton's inspector with regard to any reasonable requests for assistance in inspecting the City of Newton Work.

2. ADVERTISEMENT AND AWARD OF CONTRACT

2.1 In accordance with Massachusetts procurement laws, MWRA shall advertise and accept bids for the Contract. MWRA, in its sole discretion, reserves the right to accept or reject any and all bids in accordance with Massachusetts law, including for the reasons articulated in the Contract bid solicitation materials.

2.2 MWRA will enter into a contract with the successful bidder and be responsible for construction.

2.3 The Contract shall provide for the installation of the City of Newton Work, in accordance with the plans and specifications dated October 2018.

3. CHANGE ORDERS

In the event of a request for a change order relating solely to the installation of the City of Newton Work, MWRA will provide the City of Newton with a copy of the proposed change order for review and approval, which approval shall be in writing. Upon approval thereof by the City of Newton, MWRA shall process such change order. Payments for such change order shall be invoiced with the monthly pay request to MWRA by its contractor, which will then invoice the City of Newton for 100 percent of such change order cost. The City of Newton shall make payments to MWRA in accordance with Section 6 of this MOA.

4. HAZARDOUS MATERIALS

MWRA shall be responsible for, and shall take all actions necessary or appropriate in accordance with MGL Chapter 21E and the Massachusetts Contingency Plan ("MCP") Utility Related Abatement Measures ("URAM") necessary to conduct the work under the Project. The City of Newton shall be responsible for all costs associated with the disposal of contaminated soils related to the installation of the City of Newton Work. The City of Newton shall make payments to MWRA in accordance with Section 6 of this MOA.

5. TERM

The term of this MOA shall, unless otherwise agreed to by the Parties, commence on the date written above and continue until final completion of the Project and any warranty period in the Contract.

6. PAYMENT BY THE CITY OF NEWTON

The City of Newton shall make payment to MWRA of the amounts requested in the Contractor's monthly invoice for the work in the bid items associated with the installation of the portion of the City of Newton Work referenced herein within thirty (30) days of receiving invoices from MWRA. Payment amounts shall be in accordance with the Schedule of Values submitted by the contractor and approved by MWRA. MWRA will invoice the City of Newton on a monthly basis.

7. AMENDMENTS

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

8. SEVERABILITY

If any part of this MOA is determined to be invalid, illegal, or unenforceable, such determination shall not affect the validity, legality, or enforceability of any other part of this MOA and the remaining parts of this MOA shall be enforced as if such invalid, illegal or unenforceable part were not contained herein, unless continued performance of the remaining provisions of this MOA, which have not been determined to be invalid, illegal or unenforceable, would result in the substantial loss of the benefit of the bargain to either MWRA or the City of Newton.

9. NOTICE

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

To Newton: Louis M. Taverna, P.E., City Engineer
Department of Public Works
Newton City Hall, Room 102
1000 Commonwealth Avenue
Newton Centre, MA 02459

To MWRA: Cori Barrett, Director, Construction
Massachusetts Water Resources Authority
2 Griffin Way
Chelsea, MA 02150

10. ENTIRE AGREEMENT

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

11. GOVERNING LAW

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

12. DISPUTES/COOPERATION

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

13. COUNTERPARTS

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

14. AUTHORITY

Each person signing in an official or representative capacity warrants that he or she is duly authorized to act for his or her principal and that he or she is so acting when signing this MOA, and that, when executed this MOA shall be a valid and binding obligation, enforceable in accordance with its terms.

IN WITNESS WHEREOF, the Parties hereto have caused the MOA to be executed as a sealed instrument and signed in duplicate by their duly authorized representatives.

EXECUTED AS A SEALED INSTRUMENT this _____ day of _____, 2019.

MASSACHUSETTS WATER RESOURCES

AUTHORITY

By: _____
Frederick A. Laskey
Executive Director

CITY OF NEWTON, MA

_____
James McGonagle, Commissioner Public Works

I certify that the following funds are available in the following accounts:

36B401R-R586011 = $1,360,200.00
36b401S-586011 = $1,360,200.00

_____
Susan Dzikowski, Comptroller

Approved as to legal form and character:

_____
Alissa O. Giuliani, City Solicitor
City of Newton

_____
Mayor Ruthanne Fuller
City of Newton

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Program Support Services for the Metropolitan Tunnel Redundancy Program
JCK Underground, Inc.
Contract 7655

COMMITTEE: Water Policy and Oversight

_____INFORMATION
__X__VOTE

Michele S. Gillen
Director of Administration

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

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

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to award Contract 7655, Program Support Services for the Metropolitan Tunnel Redundancy Program to JCK Underground, Inc. and to authorize the Executive Director, on behalf of the Authority, to execute said Contract in an amount not to exceed $10,247,877 for a contract term of 60 months from the Notice to Proceed. In addition to the initial 60-month term, the Authority may elect to exercise options to renew the contract for two additional 24-month terms subject to further approval of the Board of Directors.

BACKGROUND:

In October 2018, the Board of Directors approved staff's recommendation to issue an RFQ/P for Program Support Services for the Metropolitan Tunnel Redundancy Program.

The purpose of the Program Support Services contract is to assist Tunnel Redundancy staff with program-wide activities such as risk management planning, quality management, design criteria and standardization, document management and controls, design and construction package planning, independent technical reviews, field investigation procedures, rock core storage, critical path scheduling, and budget planning.

Engagement of a program-wide, independent consultant to support very large, long duration, complex projects is a common practice in the industry and generally consistent with past MWRA programs, such as the Lead Design Engineer and Program Manager/Construction Manager on the Boston Harbor Project, Design Management Support on the John J. Carroll Water Treatment Plant, and Owner's Representative on the Norumbega, Blue Hills and Spot Pond Covered Storage projects. In addition, most on-going, very large tunnel projects being conducted by other agencies and authorities across the country, include an independent consultant(s) in the form of an Owner's

projects. In addition, most on-going, very large tunnel projects being conducted by other agencies and authorities across the country, include an independent consultant(s) in the form of an Owner's Representative, Owner's Advisor, Program Manager, Geotechnical Consultant, Tunnel Consultant, or Program Support Services consultant.

The staff of the Tunnel Redundancy Department, with support from other MWRA departments as appropriate, will oversee the Tunnel Redundancy Program including all work of the Program Support Services consulting firm. The consultant organization chart, which was approved by the Board in October 2018, is attached. An update on overall progress to date is also attached.

DISCUSSION:

The Program Support Services consultant team consists mostly of senior professionals with significant experience in tunneling and complex underground construction. Key personnel include technical experts in the areas of program management, rock tunneling, geotechnical engineering, structural engineering, and cost estimating/scheduling with experience in the planning, design, and construction of similar complex rock tunneling and underground projects including mega projects (greater than $1.0 billion). A particular expertise that the consultant will provide is risk management/mitigation as well as an in-depth understanding of the state of the practice and current trends in the tunnel construction industry. These key personnel have the necessary skills in the area of tunneling and complex underground construction that is required to properly execute the Tunnel Redundancy Program but would be difficult for MWRA to hire as permanent staff.

The consultant will provide technical professional resources to the Tunnel Redundancy Department to support program-wide management, risk management, quality management, standardization, contract delivery, and contract packaging. The Consultant will include independent technical reviews, constructability reviews, critical path schedule evaluations, and cost estimating/opinions. The consultant will also provide advice on early engineering activities and will prepare early work products in advance of MWRA procuring the Preliminary Design Engineering Contract as the Tunnel Redundancy Department adds key permanent staff.

The consultant and its team members will be precluded from participating in either the preliminary or final design, or the construction phase of the project. Precluding the consultant from other phases of the project was intended to provide independence from the interests of other program participants, and encourage long-term commitment to the MWRA.

Procurement Process

On January 2, 2019, MWRA issued a one-step Request for Qualifications Statements/Proposals that was publicly advertised in the Central Register, Boston Herald, Banner Publications and El Mundo. In addition, written notice was sent to over 35 engineering firms, most of which had expressed interest in the Metropolitan Tunnel Redundancy Program. Prior to advertising the RFQ/P, staff made an informational presentation on the Tunnel Redundancy Program to consulting firms at a meeting hosted by the American Council of Engineering Companies of

Massachusetts (ACEC). The meeting was attended by over 50 professionals representing over 25 firms.

The following evaluation criteria were included in the RFQ/P: Cost (20 points), Qualifications and Key Personnel (20 points), Experience/Past Performance on Similar Non-Authority projects and Past Performance on Authority Projects (20 points), Technical Approach (20 points), Capacity/Organization and Management Approach (17 points), and MBE/WBE Participation (3 points).

Forty-nine firms requested copies of the RFQ/P. On February 15, 2019, MWRA received one proposal from JCK Underground, Inc. Prior to opening the proposal, staff contacted multiple firms to determine the reason why more firms did not submit proposals. Twelve firms indicated that they are closely monitoring the Tunnel Redundancy Program and are forming teams to pursue future design and/or construction management contracts under this program. Other firms indicated that they were interested in this contract, but they did not have sufficient qualified personnel in the local area or their qualified personnel were already committed on other projects. Several of the other firms who requested copies of the RFQ/P are smaller firms that would not qualify as a prime consultant but remain interested in the program. Staff considered re-advertising this procurement to try to engender more competition. However, based on the feedback from the firms it was ultimately determined that re-procuring would not likely yield any additional competition. Therefore, the proposal was distributed to the Selection Committee for review.

The Selection Committee reviewed the proposal and determined that the JCK team meets, and in many instances exceeds, the qualifications required for this contract and has extensive experience with deep rock water/waste water tunnel projects similar in size and scope to the Tunnel Redundancy Program. The firm is providing similar program support services to several other agencies including DC Water, Alexandria VA, Allegheny County Sanitary Authority, and Silicon Valley Clean Water. All of the key personnel are committed and available to work on this project.

The proposed Project Manager is based in New England and has 30 years of experience with over 25 years specializing in tunnels and underground structures. He had significant roles in the design and construction of the MWRA Boston Harbor Project Tunnels, MetroWest Water Supply Tunnel, and the Braintree-Weymouth Tunnel. More recently he has been working on the DC Water Clean Rivers CSO Tunnel program and the Silicon Valley Water Sewer Tunnel project. In addition, many of the other key personnel have extensive experience working with the MWRA.

The proposed team includes individuals with national reputations as leaders in the area of risk management and project delivery for large complex tunnel programs. Most key personnel are locally based and all are well-known industry leaders in rock tunnel design, underground structural design, geotechnical engineering, and cost controls.

JCK's technical approach demonstrated an excellent understanding of the Tunnel Redundancy Program and the services that are required under the contract. The proposal suggested

thoughtful enhancements for consideration. Numerous references were provided for the firm's performance on similar projects and for all of the key personnel. All of the references were excellent and expressed strong satisfaction with JCK. All references also indicated that JCK was responsive and that they would rehire them.

JCK's proposed cost and level of effort in comparison to the Engineer's Estimate are presented below:

	JCK Underground, Inc.	*Engineer's Estimate*
Proposed Cost (initial 60-month term)	$10,247,877.21	*$10,250,000*
Level of Effort	34,743 hours	*25,660 hours*
Allowance for First Optional 24-Month Renewal	$3,500,000[1]	*$3,500,000*
Allowance for Second Optional 24-Month Renewal	$3,750,000[1]	*$3,750,000*
Total Potential Contract Including Two Optional 24-Month Renewals	$17,497,877.21	*$17,500,000*

1. An allowance for the cost of two optional 24-month renewal periods was set by MWRA staff. If MWRA staff recommend and the Board approves the renewal of the contract at the end of the initial 60-month term, the actual cost will be determined at that time.

The Selection Committee determined that JCK exceeded the minimum requirements of the RFQ/P and that its proposed cost and level of effort is favorable. JCK's proposed cost is within 1% of the Engineer's Estimate and its proposed level of effort is 35% higher than the Engineer's Estimate. This is attributed to a proposed higher level of effort for tasks such as developing a database for geotechnical information, detailed review of change orders and claims from previous projects to include lessoned learned into this project, developing a master program schedule, facilitating integrated project scheduling sessions, and quality control of geotechnical field work. Staff supports this increased level of effort for the proposed technical approach and staff mix.

The average direct labor rate of key personnel proposed by JCK is slightly below the average rate that was assumed in the Engineer's Estimate based on a recent assessment of current local rates for similarly experienced professionals. The proposed overhead and profit percentages are very competitive and result in a much lower fully burdened billable rate than anticipated. This lower hourly rate has allowed a higher level of effort to be available to MWRA for services under this contract.

Staff met with representatives of JCK in order to confirm that they fully understand the scope of work and that they can complete the services for the proposed cost. Based on those discussions and for the reasons stated above, staff recommends that Contract 7655 be awarded to JCK Underground, Inc.

BUDGET/FISCAL IMPACTS:

The FY19 CIP includes a budget of $163,673,000 for Administration, Legal and Public Outreach, which was envisioned to include program-wide professional services such as Contract 7655 Program Support Services. Funds have been reallocated from this subphase to a separate contract in the Proposed FY20 CIP.

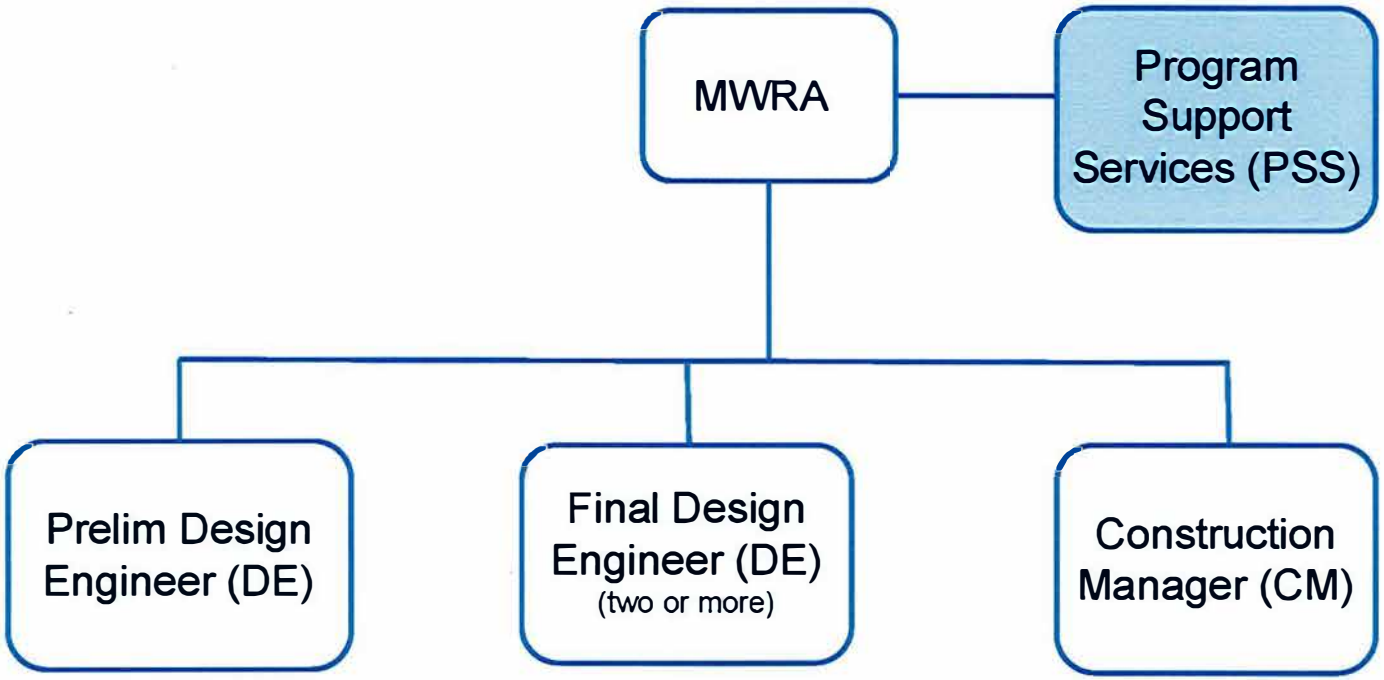
MBE/WBE PARTICIPATION:

The Affirmative Action and Compliance Unit established a MBE/WBE participation requirement for this project of 0%. JCK Underground proposed 18% MBE and 3% WBE participation which becomes a requirement for this contract.

ATTACHMENTS:

Consultant Organization Chart
Update on the Tunnel Redundancy Program

Metropolitan Tunnel Redundancy Program – Consultant Organization



Update on the Tunnel Redundancy Program

Since establishing the Tunnel Redundancy Department in June 2018, a number of activities have been initiated and are underway in addition to efforts to procure the Program Support Services consultant.

Revised Tunnel Alignment

Staff have evaluated a minor change to the alignment of the proposed tunnel to provide redundancy to MWRA's Section 80 pipeline, which is a single barrel pipeline that supplies Needham and Wellesley. The revised alignment would move a proposed tunnel shaft connection from the Commonwealth Avenue Pumping Station in Newton to the end of the Section 80 pipeline in Needham. The shaft connection at the Commonwealth Avenue Pumping Station is no longer needed because a new redundant pipe connection to the pumping station is under construction as part of the MWRA Interim Improvements Program. This new shaft connection would connect to the end of Section 80 and provide a second means of supply to Needham and Wellesley (see figure below).

Preliminary Design Engineering Contract

In addition to procurement of a Program Support Services consultant, staff are preparing a scope of services for preliminary design, geotechnical investigations, and MEPA review. It is anticipated that this contract will be procured under a two-step procurement process: an RFQ followed by an RFP issued to shortlisted firms. It is expected that the Preliminary Design Engineering contract will have a duration of approximately three years. At this time, the goal is to issue the Preliminary Design Engineering RFQ in the summer of 2019.

The Preliminary Design Engineering contract will include the preliminary geotechnical investigation (deep rock borings), preliminary route and shaft site alternative evaluations, preliminary design, preliminary contract packaging, and will establish a comprehensive list of the environmental permits needed, including preparation of the required MEPA filings for the project.

The Preliminary Design Engineering contract is anticipated to include several significant project documents including a Preliminary Geotechnical Data and Design Report, Alternatives Evaluation and Preliminary Design Report, Environmental Impact Report and preliminary design drawings. After the completion of the preliminary design, consultants will be needed to support both final design and construction management of the program. Future staff summaries will provide details on the structure of those contracts.

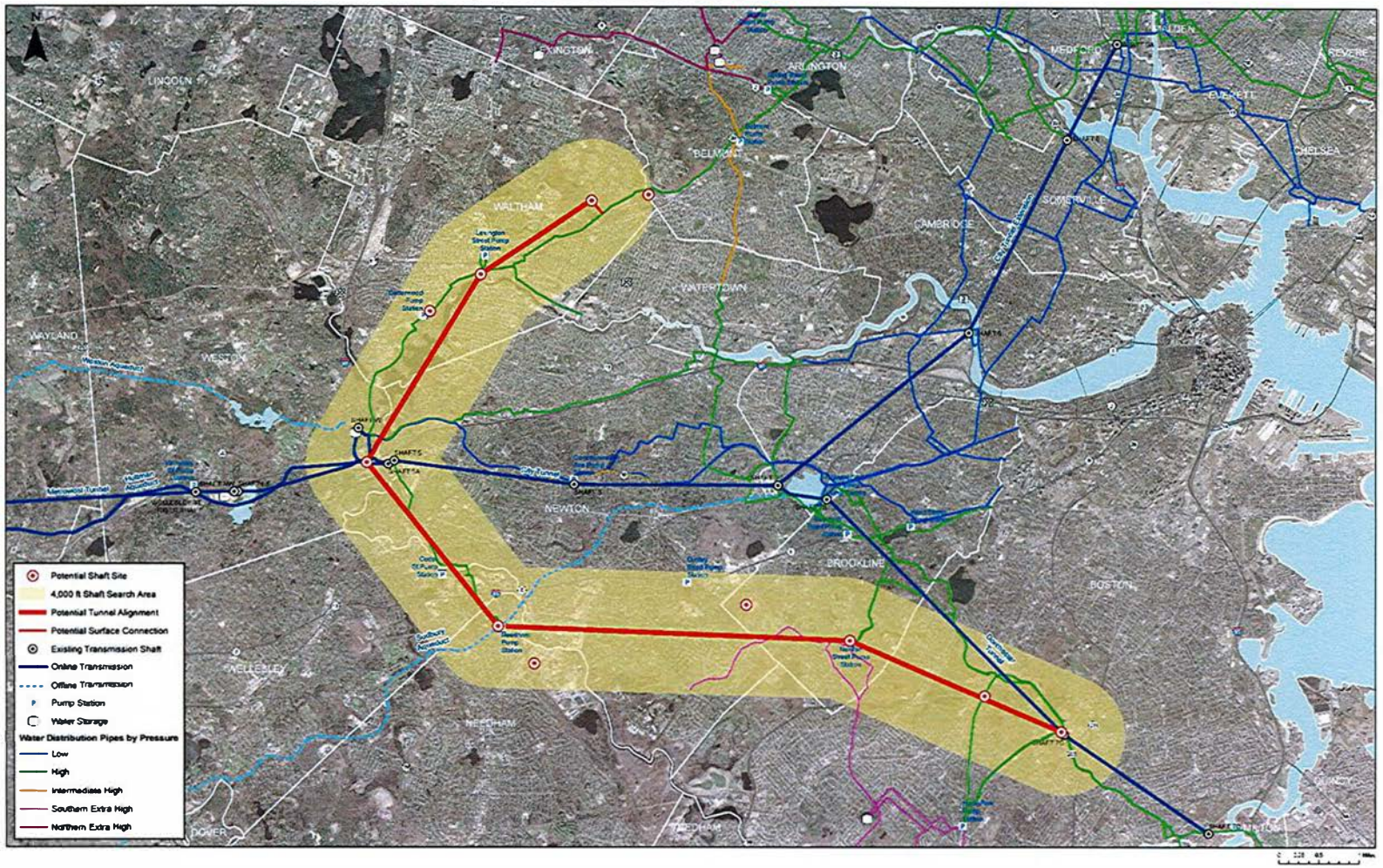
Hydraulic Analysis

Staff have begun to update the hydraulic model of the water system to include currently planned distribution system changes, and the latest population and employment projections for the service area through the year 2040, as well as available longer term projections. Staff also plan

to evaluate other longer term water use scenarios such as potential system expansion and the effect of drought or emergency conditions on local water supplies that are operated by MWRA partial users. While staff have found that recent increases in population and employment in the service area have not increased overall water use due to improved water use efficiency, the new tunnel will have a life span of over 100 years. The results of this evaluation will be used to confirm the size and configuration of the proposed redundant tunnel and ensure that the new tunnel is either designed to accommodate future potential demands or that a plan is in place to address potential future water use.

Metropolitan Tunnel Redundancy Program

Potential Tunnel Alignment and Shaft Locations



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Southern Extra High Pipeline - Section 111 (Dedham North)
P. Gioioso and Sons, Inc.
Contract 7504, Change Order 6

COMMITTEE: Water Policy and Oversight

___ INFORMATION
_X_ VOTE

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

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

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Change Order 6 to Contract 7504, Southern Extra High Pipeline - Section 111 (Dedham North), with P. Gioioso and Sons, Inc., for an amount not to exceed $90,000, increasing the contract amount from $17,470,556.70 to $17,560,556.70, with no increase in contract term.

Further, to authorize the Executive Director to approve additional change orders as may be needed to Contract 7504 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:

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

Contract 7504, Section 111 (Dedham North) consists of 10,000 linear feet of 36-inch water main of which 3,000 linear feet is within DCR's Stony Brook Reservation in Dedham, with the remaining 7,000 linear feet within residential neighborhoods of Dedham. This contract includes a new pipe bridge across Mother Brook on Sawmill Lane and coordination with MassDOT for work adjacent to its bridge on Walnut Street.

This Change Order

Change Order 6 consists of the following two items:

Furnish and Install Dedham-Westwood Water District (DWWD)
Water Main and New Gate Valves — Not to Exceed $50,000

The contract documents require the Contractor to install the new 36-inch ductile iron pipe through East Dedham Square in Dedham. When the excavation began, it was determined that existing 12-inch DWWD cast iron water mains in East Dedham Square that connected Sawmill Lane, High Street, Bussey Street and Milton Street were in conflict with the 36-inch alignment. The DWWD mains shown on the design drawings were based off the DWWD record drawings, which were not accurate. Because the existing cast iron main was unrestrained pipe with over deflected joints, the existing main could not be safely supported while exposed within the trench limits during the installation of the 36-inch main. Therefore, the unrestrained 12-inch main had to be removed and replaced in order to continue with the installation of the new MWRA 36-inch pipe. In addition, the connections to High Street and Milton Street were within the trench limits rather than one foot outside the trench as the DWWD records and contract drawings indicated.

As a result, the Contractor had to furnish and install 80 linear feet of 12-inch ductile iron water main and two new gate valves which are required to limit the isolation and ensure service was not interrupted to Milton Street and Sawmill Lane while the work was being completed.

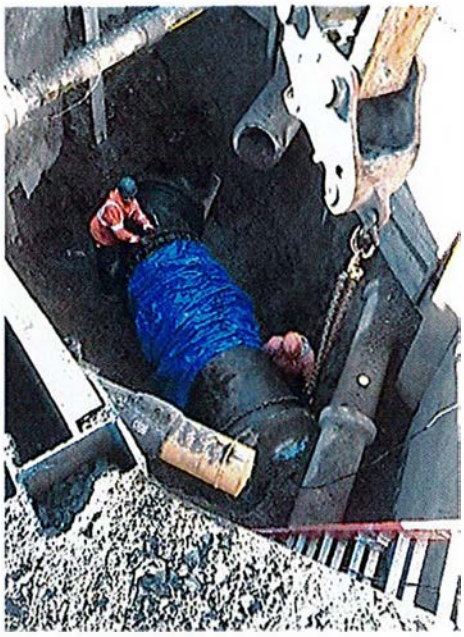
Excavation of DWWD 12-Inch Water

Thrust Block Formed for New MWRA 36-Inch

The item was identified by MWRA staff as an unforeseen condition. MWRA staff, the Consultant, and the Contractor have agreed to an amount not to exceed $50,000 for this additional work with no increase in contract term. Staff and the Contractor are currently negotiating the final lump sum cost of this item. The Contractor proceeded with this work at its own risk in order to proceed with the remainder of the contract work.

Furnish and Install Two Additional Bends — Not to Exceed $40,000

The contract documents require the Contractor to install a new 36-inch ductile iron pipe under an existing Town of Dedham 24-inch reinforced concrete pipe drain at Station 30+40 on Sawmill Lane. The design requires the 24-inch drain be supported in place as it crosses above the new 36-inch ductile iron pipe, and was based on Town records and invert elevations taken at the upstream and downstream manholes. However, when the drain was uncovered, it was found to be much deeper than shown on the drawings, with the elevation at the Sawmill Lane crossing being in direct conflict with the alignment of the new 36-inch pipe. It appears that this drain had been installed with a sag between the upstream and downstream manholes to avoid a conflict with existing utilities. As a result of the elevation conflicts with the new 36-inch ductile iron pipe and the unknown limits of the sag in the existing drain, additional ductile iron bends are required to lower the new 36-inch ductile iron pipe to bring it back to the design grade once it passes the drain.



Typical Pipe and Bend

The item was identified by MWRA staff as an unforeseen condition. MWRA staff, the Consultant, and the Contractor have agreed to an amount not to exceed $40,000 for this additional work with no increase in contract term. Staff and the Contractor are currently negotiating the final lump sum cost of this item.

CONTRACT SUMMARY:

	Amount	Time	Dated
Original Contract:	$17,226,350.00	780 Days	10/06/17
Change Orders:			
Change Order 1*	$24,723.51	0 Days	09/10/18
Change Order 2*	$10,203.74	0 Days	11/19/18
Change Order 3*	$43,621.75	0 Days	12/17/18
Change Order 4*	$159,986.58	0 Days	02/11/19
Change Order 5*	$5,671.12	0 Days	03/05/19
Change Order 6	$90,000.00	0 Days	Pending
Total Change Orders:	$334,206.70	0 Days	
Adjusted Contract:	$17,560,556.70	780 Days	

*Approved under delegated authority

If Change Order 6 is approved, the cumulative value of all change orders to this contract will be $334,206.70 or 1.9% of the original contract amount. Work on this contract is approximately 61% complete.

BUDGET/FISCAL IMPACT:

The FY19 Capital Improvement Program includes a budget of $17,381,350 for Contract 7504. Including this change order for $90,000, the adjusted subphase total is $17,560,556.70 or $179,206.70 over budget.

MBE/WBE PARTICIPATION:

The D/MBE and WBE participation requirements for this project were established at 3.4% and 3.8%, respectively. The Contractor has been notified that these requirements are still expected to be met.

MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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

PERSONNEL & COMPENSATION COMMITTEE MEETING

to be held on

Wednesday, March 20, 2019

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

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

Time: Immediately Following Water Committee

AGENDA

A. Approvals

1. PCR Amendments - March 2019
2. Appointment of Assistant Contracts Manager, Administration Division
3. Appointment of Manager, Employment, Human Resources
4. Appointment of Senior Program Manager, Engineering and Construction
5. Appointment of Program Manager – Data Management, Environmental Quality
6. Appointment of Program Manager, Meter Data and Engineering, Planning Department
7. Recommendations for Non-Union Pay Equity Adjustments

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the

Personnel and Compensation Committee

February 20, 2019

A meeting of the Personnel and Compensation Committee was held on February 20, 2019 at the Authority headquarters in Charlestown. Committee Chair Wolowicz presided. Present from the Board were Messrs. Carroll, Cook, Cotter, Foti, Flanagan, Pappastergion, Peña, Vitale and Walsh. Among those present from the Authority staff were Frederick Laskey, Carolyn Francisco Murphy, David Coppes, Carolyn Fiore, Michele Gillen, Andrea Murphy, Patterson Riley and Kristin MacDougall. The meeting was called to order at 12:07 a.m.

Information

Update on Massachusetts Equal Pay Act

Staff presented a verbal update. (Mr. Pappastergion left and returned to the meeting.)

Approvals

* PCR Amendments - February 2019

Staff made a verbal presentation. The Committee recommended approval (ref. P&C B.1).

* Appointment of Warehouse Manager

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

* Appointment of Program Manager, Water Quality

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

* Appointment of Associate Special Assistant for Affirmative Action

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

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* Committee recommendation approved by the Board on February 20, 2019

* Appointment of Director, Wastewater Operations and Maintenance

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

* Appointment of Director, Metropolitan Operations

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

* Appointment of Deputy Director of Waterworks

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

* Approval of the 2019 Affirmative Action Plan

Staff made a verbal presentation. There was discussion and questions and answers.

The Committee recommended approval (ref. P&C B.8).

Contract Awards

* Workers' Compensation Third Party Administrator Services: PMA Management Corp. of New England, Contract A618

There was brief discussion and questions and answers.

The Committee recommended approval (ref. P&C C.1).

The meeting adjourned at 12:15 p.m.

* Committee recommendation approved by the Board on February 20, 2019

STAFF SUMMARY

TO: Board of Director
FROM: Frederick A Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: March PCR Amendments

COMMITTEE: Personnel and Compensation

____ INFORMATION
_X_ VOTE

Andrea Murphy, Director of Human Resources
Preparer/Title

Michele S. Gillen
Director, Administration

RECOMMENDATION:

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

DISCUSSION:

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

March PCR Amendments

The one PCR amendment is for one filled position in the Administration Division changing the title and grade.

The amendment is:

Administration Division Organizational Change

1. Title and grade change to one filled position in the Occupational Health and Safety department, from Senior Field Service Technician, Unit 1 Grade 17, to Safety Technician, Unit 9 Grade 18 as a part of a union settlement to more accurately reflect the position's responsibilities.

The amendment requires approval by the Personnel and Compensation Committee.

BUDGET/FISCAL IMPACT:

The annualized budget impact of this PCR amendment will be a cost of $1,684. Staff will ensure that the cost increase associated with this PCR amendment will not result in spending over the approved FY19 Wages and Salaries budget.

ATTACHMENTS:

Old Job Description
New Job Description

MASSACHUSETTS WATER RESOURCES AUTHORITY
POSITION CONTROL REGISTER AMENDMENTS
FISCAL YEAR 2019

PCR AMENDMENTS REQUIRING PERSONNEL & COMPENSATION COMMITTEE APPROVAL - March 20 ,2019															
	Current									Current/Budget	Estimated		Estimated Annual		Reason
Number	PCR #	V/F	Type	Current Title	UN	GR	Amended Title	UN	GR	Salary	New Salary		$ Impact		For Amendment
P17	Administration Occupational Safety and Health 8910006	F	T. G	Senior Field Service Technician	1	17	Safety Technician	9	18	$67,423	$69,107 - $69,107		$1,684 - $1,684		Union settlement
PERSONNEL & COMPENSATION COMMITTEE TOTAL=					1						TOTAL:		$1,684 - $1,684		

MWRA
POSITION DESCRIPTION

OLD

POSITION: Senior Field Service Technician

PCR#:

DIVISION: Operations

DEPARTMENT: Inspection Water

BASIC PURPOSE:

Locates water leaks in MWRA Distribution System and for MWRA communities. Performs flow tests for meter testing. Assists in training personnel of MWRA communities in methods of leak detection.

SUPERVISION RECEIVED:

Works under the general supervision of the Supervisor of Inspection Branch.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Performs continual leak detection of MWRA Distribution System through use of leak correlate and sonic leak apparatus, generally during late night hours.
- Marks leak locations and assists contract and community repair crews in pinpointing leaks.
- Prepares a variety of written reports for MWRA and MWRA communities including survey, progress and leak site reports.
- Conducts pitot-type flow tests for meter-checking programs and inspects emergency connections and bypasses.
- Assists in training MWRA community workers in leak detection methods.

- Locates and marks out the location of MWRA mains.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Basic reading, writing, mathematical and oral communication skills as normally attained through a high school education or equivalent: and

(B) Two (2) to four (4) years experience in conducting water leakage surveys and pitot-type (or other) flow tests with a background in water flow measurement and electronics: or

(C) A civil engineering background as normally attained through a two (2) year associates degree program: or

(D) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

(A) Ability to read and interpret record plans and drawings.

(B) Working knowledge of personal computers and related software.

(C) Ability to perform simple mathematical calculations and writing accurate reports.

(D) Knowledge of general pipeline construction.

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

SPECIAL REQUIREMENTS:

A valid Massachusetts Class D Motor Vehicle Operators License.

Water Operations or Water Distribution Grade I License, or ability to obtain within 6 months.

TOOLS AND EQUIPMENT USED:

Motor vehicle, power and hand tools, mobile radio, telephone, and beeper.

PHYSICAL DEMANDS:

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

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

The employee must frequently lift and/or move up to 25 pounds and occasionally lift and/or move more than 100 pounds. Specific vision abilities required by this job include close vision, distance and peripheral vision, depth perception, and the ability to adjust focus.

WORK ENVIRONMENT:

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

The employee regularly works near moving mechanical parts and is occasionally exposed to wet and/or humid conditions and vibration. The employee occasionally works in precarious places and is occasionally exposed to fumes or airborne particles, toxic or caustic chemicals, and risk of electrical shock.

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

January 2013

MWRA
POSITION DESCRIPTION

NEW

POSITION: Safety Technician

PCR#:

DIVISION: Administration

DEPARTMENT: Occupational Health and Safety

BASIC PURPOSE:

Serves as an integral part of the Occupational Health and Safety team promoting a safe and healthful work environment free from recognized hazards that may cause serious injury, physical harm or death. Responds to emergencies to mitigate danger and loss. Inspects and distributes equipment to prevent work-related injuries and illnesses. Documents monthly visual inspections in accordance with Massachusetts law requiring public sector agencies to comply with OSHA standards.

SUPERVISION RECEIVED:

Works under the general supervision of the Safety Program Coordinator or Manager, Safety and Security.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

Emergency Response Team (ERT) or Emergency Services Unit (ESU):

- May volunteer to serve on an emergency response team or equivalent. Responds to reports of mishaps or safety issues when notified (example – oil leaks from vehicles). Participates in pre-scheduled Saturday emergency drills (when available) that center around different scenarios such as boom deployment, chemical spills, or first aid situations.

Inspection:

- Conducts monthly visual check inspections of facility fire extinguishers, AED Devices first aid stations, emergency eyewash stations, and personal protective equipment (ear-

U9, Grade 18

plug) stations. Proper equipment ensures compliance with OSHA standards and limits exposure to corrosive materials, chemicals, or particulates.
- Ensures hand-held gas monitors are fully charged daily and inspected/adjusted on a monthly basis by the calibration lab.

Reports:
- Notifies manager of deficiencies such as leaks, tampering, expired, or otherwise non-operational safety equipment.
- Maintains records of inspection and maintenance on operations safety equipment such as eye wash stations and fire extinguishers and produces reports.
- Maintains and updates the OSHA-required materials safety data sheets (MSDS) in binders located throughout the facility.
- Distributes existing safety procedural guidelines upon request.

Inventory:
- Replenishes and distributes supplies from the safety stock room including fire extinguishers, ear plugs, and first aid supplies (no equipment/supplies for eye wash or AED).
- Identifies and orders needed safety supplies.
- Ensures adequate supply of safety bags (including hard hat and safety glasses) for new hires attending weekly new employee orientation session.

Vendor Management:
- Serve as primary liaison to contract expert safety vendors who perform annual inspection of fire extinguishers (required for OSHA compliance) and AED equipment. Accompanies vendors during annual inspections and initiates work order or contacts vendor during the year if there are issues.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) An Associate degree in a technical or business field; and

(B Knowledge of safety equipment used in an industrial environment as normally acquired through four (4) or more years of relevant experience; or

(C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

(A) Knowledge of all fire and electrical work practices.

(B) Ability to inspect facilities for equipment and initiate appropriate follow-up.

(C) Demonstrated verbal and written communication skills.

(D) Basic knowledge of OSHA coverage and MWRA protocols on safety reporting.

SPECIAL REQUIREMENTS:

Valid Massachusetts Class D Driver's License.

Completion of 40-hour OSHA Hazardous Waste Site Worker Certification.

Annual 8 hour OSHA Refresher course.

TOOLS AND EQUIPMENT USED:

Hand tools, mobile radio, telephone, beeper, 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 the job. Reasonable accommodation may be made to enable individuals with disabilities to perform the essential functions.

While performing the essential functions 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 regularly is required to stand or talk or hear. The employee is occasionally required to walk, sit, climb or balance, stoop, kneel, crouch, or crawl.

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

WORK ENVIRONMENT:

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

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

The noise level in the work environment is moderately quiet.

March 2019

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Appointment of Assistant Contracts Manager, Administration Division

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COMMITTEE: Personnel & Compensation

X VOTE
____ INFORMATION

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

Michele S. Gillen
Director of Administration

RECOMMENDATION:

That the Board approve the appointment of Ms. Rebecca Tearte to the position of Assistant Contracts Manager, Administration Division (Unit 6, Grade 12) at an annual salary of $103,157.30 commencing on a date to be determined by the Executive Director.

DISCUSSION:

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

The Assistant Contracts Manager manages procurement of construction, non-professional and professional services contracts, from initial submission to closeout. Responsibilities include review and drafting of RFQs, RFPs, bid documents, amendments and related documents; contract negotiation; assisting the Deputy Contract Manager with development of contract documents and procedures; and interpreting and monitoring compliance with statutes, regulations and MWRA policies and procedures.

Selection Process

This position was posted internally and externally. Five internal and thirty-four external candidates applied. Two internal and five external qualified candidates were referred for an interview. The Director of Procurement, MBE/WBE Program Manager and Deputy Chief Engineer interviewed the candidates.

The interview team determined that Ms. Tearte was qualified to fill this position based on her experience, abilities, knowledge, and education.

Ms. Tearte has more than 30 years of experience in administering and managing services for major construction projects with the Authority. She currently serves as the Senior Contract

Administrator for the Deer Island Engineering Services Department. In that role she assists in the preparation of specifications and contract provisions while also providing assistance in the preparation, review and processing of contract amendments and change orders. Ms. Tearte is also responsible for ensuring the timely review and processing of construction, design, non-professional service, and purchasing contract submittals to the Procurement Department.

Ms. Tearte began her career with the Authority as a Contract Coordinator in the Procurement Department. In that role she prepared and compiled professional service proposals and construction bids for review by Assistant Contract Managers. Ms. Tearte was also responsible for preparing and coordinating all pre-advertising and pre-bid phases of Authority contracts. Ms. Tearte is well respected by MWRA management and her peers Authority wide.

Ms. Tearte holds a BA in Economics from Regis College and a Masters of Management from Cambridge College.

BUDGET/FISCAL IMPACT:

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

ATTACHMENTS:

Rebecca Tearte Resume
Position Description
Procurement Department Organization Chart

REBECCA G. TEARTE

PROFESSIONAL SUMMARY

More than 30 years of experience in administering and managing services for major construction projects with expertise in Contract Management, Administrative Management and Tracking Analysis. Effective at setting priorities to achieve immediate and long term goals, while meeting operational deadlines.

SKILLS

- CONTRACT ADMINISTRATION
- PROBLEM SOLVING
- PROJECT MANAGEMENT
- PROCUREMENT
- IMPROVE DOCUMENT SPECIFICATIONS
- DATABASE DEVELOPMENT

WORK EXPERIENCE

MASSACHUSETTS WATER RESOURCES AUTHORITY **1988 – present**

Engineering Services Department, Deer Island Treatment Plant, Winthrop, MA (September 2014 - Present)
Senior Contract Administrator

- Develop and institute policies and procedures for procurement, tracking, administration and management of professional, design and construction contracts.
- Assist in preparation and updates of boilerplate specifications and contract provisions.
- Assist in development of program management/administration systems. Develop and maintain data systems for contract procurement logs, contract reporting, accounts payable and progress reporting.
- Provide assistance in negotiation preparation of contract documents for Department's engineering and construction managers.
- Provide assistance in maintenance and reporting of project schedules from project management systems.
- Coordinates administrative projects, as directed by the Manager of Engineering Services, DITP.
- Provide assistance in preparation, review and processing of contract amendments and change order; participates in closeout and final payment of contracts; and assists in the defense of contract claims and dispute resolution.
- Utilize contract administration data and issue monthly financial reports; assist in capital program budgeting activities, various reporting and budget updates. Prepare and compile Delegated Authority Reports on a monthly basis.
- Process required Department of Environmental Protection (DEP) paperwork for State Revolving Fund (SRF) projects on yearly basis.
- Work with DITP and Purchasing Department staff to furnish New Engineering Offices and Workstations.
- Schedule interviews and process Recommendation to Hire/Promote Paperwork for Manager, Engineering Services, DITP.

Engineering Services Department, Deer Island Treatment Plant, Winthrop, MA (January 1994 - September 2014)
Administrative Manager

- Assist Project Managers in managing all aspects of construction, non-professional and professional services and purchasing contracts from initial request for service through execution.
- Reviews contract processes and documents for format and substance as well as compliance with Authority standards and applicable laws relevant to policies and procedures.
- Designed, implemented and updated contract management database using Access.
- Troubleshoot contract procedure obstacles and resolve problems to accomplish procurement objectives.
- Ensure timely review and processing of construction, design, non-professional service, and purchasing contract submittals to Procurement.

REBECCA G. TEARTE

WORK EXPERIENCE

Procurement Department, Charlestown Navy Yard, Charlestown, MA (May 1988 - January 1994)
Contract Coordinator

- Prepared and coordinated all pre-advertising and pre-bid phases on all Authority contracts.
- Coordinated dates of all bidding events on calendar database and attend all bid openings.
- Assisted Legal Department with request for information on construction, professional and non-professional service contracts.
- Prepared and compiled professional service proposals and construction bids for review by Assistant Contract Managers.
- Supervised secretarial staff on as-needed basis.

EDUCATION

- Bunker Hill Community College, Computer Network Certificate
- Cambridge College, Masters of Management
- Regis College, Bachelor of Arts, Economics

WORKSHOPS – THE LABOR GUILD SCHOOL OF LABOR MANAGEMENT RELATIONS

- Collective Bargaining Negotiations Workshop; Advanced Communication Skills to Resolve Conflict Fall/Spring - 2018
- Media, Messaging and the Labor Movement; Next Step Stewards; Organizing around the Grievance Process - Fall/Spring - 2017
- Union Administration and The Law – Fall 2016; The Stewards Job – Fall 2013

ACCOMPLISHMENTS

- Elected Trustee Board Member - The Washington Union, South End – September 2018
- Elected Trustee of United Steelworkers Union - Local 9360, April 2015 – May 2018
- The Labor Guild of Boston, United Steelworkers Local 9360 – Union Stewart Certification - November 2013
- Appointed Foreperson on Civil Case at Suffolk County Superior Court, Boston, MA - July 2013
- Grade 4 Wastewater License – November 1994
- Team Leader in Thompson Island Outward Bound Management Training Program – MWRA – 1991

MWRA TRAINING

- Supervisory Development Program, October – December 2016
- Basic Maximo Training – Phase I – July 2016
- Interviewing Skills – June 2016
- Lawson SSCM – View of Portal System – February 2015
- Writing Specifications for Procurement of Goods and Services – November 2014

MWRA
POSITION DESCRIPTION

POSITION: Assistant Contract Manager

PCR#: **8810028, 8810035, 8810039, 8810044**

DIVISION: Administration

DEPARTMENT: Procurement

BASIC PURPOSE:

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

SUPERVISION RECEIVED:

Works under the general supervision of the Deputy Contract Manager.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Contributes to the development and implementation of Authority-wide policies and procedures for all elements of the contract function.

- Reviews contract processes and documents for format and substance as well as compliance with Authority standards and applicable laws, especially MGL Chapters 149 and 30.

- Provides guidance to the Law Division, senior authority staff and outside consultants on contract matters as required; represents Authority before Commonwealth Department of Labor and Industries as appropriate.

- Reviews, drafts and helps negotiate contract terms and conditions; prepares and updates standard forms and other contract provisions.

- Assists the Division in negotiating and preparing contracts, drafts and processes amendments and resolves contract disputes.

- Contributes to the development and implementation of policies and systems for maintenance of contract processes, contract logs, advertising, bidding and contract awards in compliance with Authority standards and applicable law.

- Reviews construction and non-professional services bids, contract amendments, change orders, final payment and closeout.

- Reviews bids and consultant proposals, emphasizing compensation analysis; presents cost control recommendations to Selection Committee.

- Serves as voting member on Selection Committee

- Serves on Consultant Activity Review (CAR) Committee.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) A four- (4) year college program in business administration or a related field. Experience in a governmental agency required; and

(B) Understanding of contract administration as acquired through four (4) to seven (7) years contract management experience; or

(C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Knowledge of and experience with MGL Chapters 149 and 30 or with design and other professional service contracts preferred.

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

SPECIAL REQUIREMENTS:

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

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

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

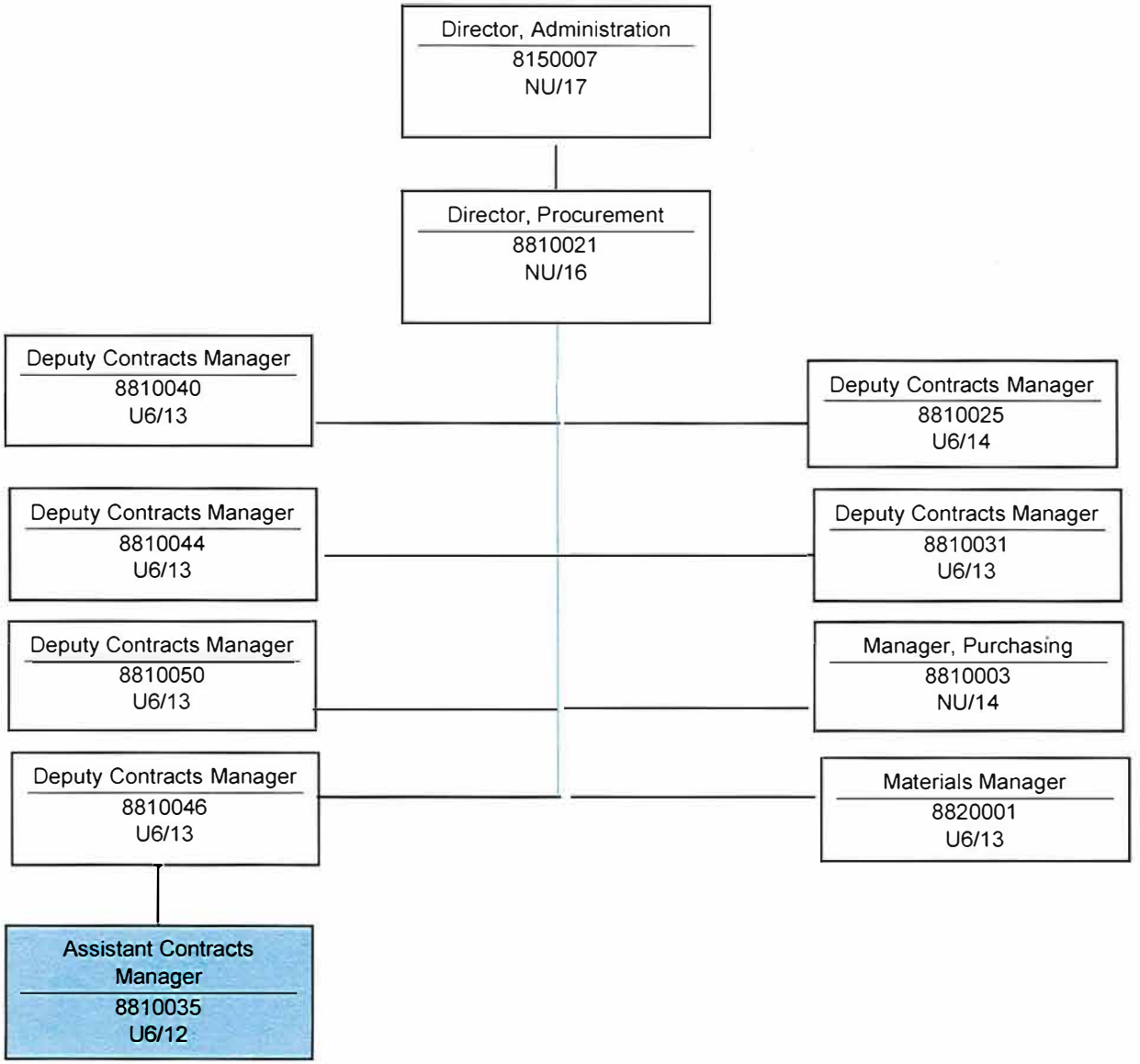
WORK ENVIRONMENT:

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

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

July 2009

Administration
Procurement
March 2019



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Appointment of Manager, Employment

COMMITTEE: Personnel & Compensation

____ INFORMATION
_X_ VOTE

Andrea Murphy, Director, Human Resources
Preparer/Title

Michele S. Gillen
Director, Administration

RECOMMENDATION:

To approve the appointment of Ms. Susan Carter to the position of Manager, Employment, (Non-Union, Grade 14) in the Administration Division, at the recommended annual salary of $117,300.00, commencing on a date to be determined by the Executive Director.

DISCUSSION:

The position of Manager, Employment became vacant upon the promotion of the incumbent. The position reports to the Director, Human Resources and is responsible for managing all recruitment and employment programs and activities and administering adequate employment, placement and transfer policies and procedures to meet Authority personnel requirements.

Selection Process

The position of Manager, Employment was posted internally and two candidates applied for this position. One candidate was appointed to another position. The remaining candidate, Ms. Carter was determined to be qualified and was referred for an interview. The Director, Human Resources and the Director, Administration conducted the interview. Upon completion of the interview, Ms. Carter was recommended for the position based on her qualifications and experience.

Ms. Carter has been working in the Employment Unit for the last 13 years. Ms. Carter has redeveloped the new hire orientation program and conducts orientation for newly hired employees. She has been an integral contributing member of the implementation team for Applicant Pro, the MWRA's new on-line application system. Ms. Carter has also demonstrated an exceptional ability to work with managers, supervisors, employees and applicants on all internal promotions and new hires and to assure that critical positions are filled expeditiously with an internal promotion or external hire and that the cascading effect of promotions is managed efficiently. Prior to joining the MWRA, she worked in the Governor's office for 15 years and was responsible for various HR functions.

Ms. Carter is currently the Acting Employment Manager. In that capacity, she has effectively overseen all facets of the employment process including hiring qualified candidates for vacant positions. Over the past few years, there has been a significant increase in attrition largely due to retirements, and Ms. Carter has successfully managed the replacement of critical operational positions including the promotion of many internal candidates, which is a key component of MWRA's succession planning. She has the respect of MWRA management and staff.

BUDGET/FISCAL IMPACT:

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

ATTACHMENTS:
Resume of Susan Carter
Position Description
Organizational Chart

SUSAN A. CARTER

EXPERIENCE:

2018 - Present **Acting Manager, Employment**
2016 - 2018 **Assistant Manager, Employment**
2006 - 2016 **Human Resources Specialist**
Massachusetts Water Resources Authority, Charlestown, Massachusetts

- Manage all recruitment and employment programs, policies, and procedures for hiring qualified candidates ensuring compliance with Affirmative Action goals.
- Resolve staffing concerns with senior management and provide guidance on succession planning
- Manage employee orientation program.
- Serve as a member of management's team for collective bargaining negotiations.
- Managed recruitment, interview and selection processes, working closely with hiring managers and executive management to ensure compliance with MWRA policies and procedures and hiring goals.
- Identified and developed new recruitment sources, participated in recruiting events, conducted pre-screening activities, participated in interview panels and selection processes and performed reference and background checks.
- Participated as a team member in the development and implementation of a web-based employment application system.

1991 - 2006 **Deputy Director of Administration**
Office of the Governor, Boston, Massachusetts

- Provided orientation to new employees, processed employment paperwork, and administered benefits.
- Managed accounts payable, office supplies and physical property inventory. Supervised three interns each summer.

1987 - 1990 **Office Manager**
P.F. O'Connor, Inc., Revere, Massachusetts (a building supply company)

- Managed main office, processed accounts payable and receivable, coordinated banking activities, and prepared weekly payroll.
- Supervised 39 employees and managed the distribution of work.

EDUCATION:

Burdett School of Business, Boston, Massachusetts
Chelsea High School, Chelsea, Massachusetts

MWRA
POSITION DESCRIPTION

POSITION: Employment Manager

DIVISION: Administration & Finance

DEPARTMENT: Human Resources

BASIC PURPOSE:

Manages all recruitment and employment programs and activities. Establishes and administers adequate employment, placement and transfer policies and procedures to meet Authority personnel requirements.

SUPERVISION RECEIVED:

Works under the general supervision of the Deputy Director of Human Resources.

SUPERVISION EXERCISED:

Exercises close supervision of assigned professional and clerical staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Manages and implements the Authority's procedures for recruitment and hiring and ensures compliance with Affirmative Action goals.
- Assess impact of attrition on staffing and provide guidance to MWRA senior managers on succession and replacement planning.
- Conducts applicant screening to determine qualifications for MWRA positions. Refers qualified applicants to hiring managers.
- Develops and implements employment automated systems including applicant tracking systems. Works closely with other Human Resources Managers to improve processes.
- Develops and implements new recruitment sources including social media sites and supervises preparation of brochures, pamphlets, and other marketing materials describing Authority employment opportunities.
- Coordinates all employment issues with Authority divisions and outside recruitment agencies.

- Establishes active relationship with employment sources such as schools and colleges.

- Manages all required pre-employment background check procedures to include obtaining applicant consent/authorization forms and pre-employment physicals; ensuing the confidentiality of information and reports.

- Develops and implements programs designed to increase applicant pools.

- Trains managers in the employment process (forms, procedures, selections criteria, interviewing).

- Ensures accuracy of Authority job postings.

- Develops and maintains relationships with community, school and professional organizations and other referral sources.

- Drafts regular and special reports on employment matters including costs, numbers hired, attrition and promotions.

- Responds to requests and inquiries relative to employment from internal candidates, managers and applicants.

- Serves as a member of management's negotiating team for collective bargaining negotiations.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) A four (4) year college program in human resources, industrial relations, public administration or a related field; and

(B) General understanding of human resources and hiring practices and state and federal laws and regulations governing employment as acquired through seven (7) to nine (9) years experience in employment and human resource administration of which a minimum of three (3) years must be in a supervisory capacity; or

(C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Ability to plan, organize, direct, train and assign duties to subordinates.

(B) Understanding and knowledge of federal and state employment laws, practices and policies.

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

SPECIAL REQUIREMENTS:

None.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

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

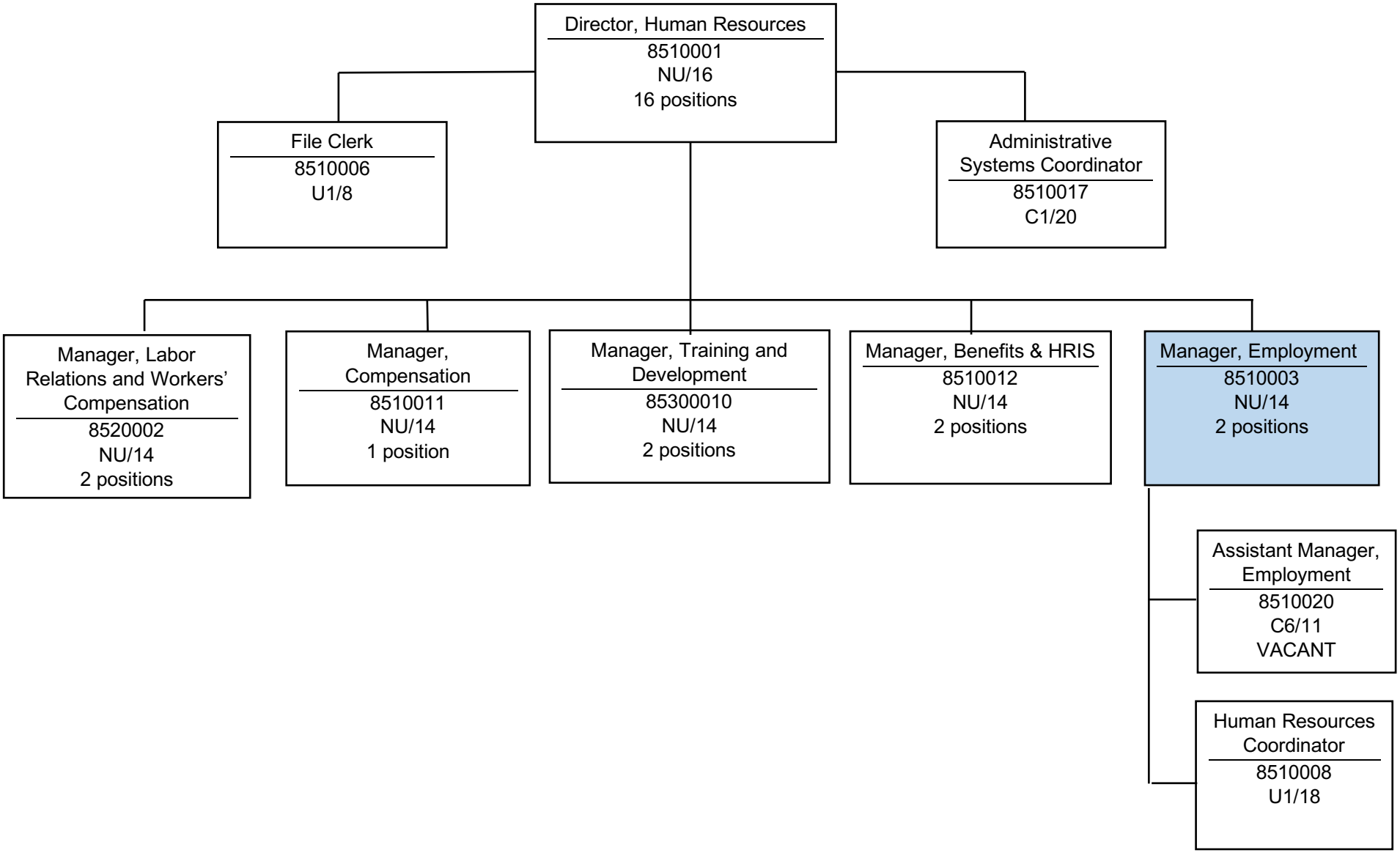
WORK ENVIRONMENT:

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

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

November 2014

Administration
Human Resources
March 2019



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Appointment of Senior Program Manager
Engineering & Construction Department

COMMITTEE: Personnel & Compensation

___ INFORMATION
_X_ VOTE

Andrea Murphy, Director, Human Resources
John Colbert, P.E., Chief Engineer
Preparer/Title

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

RECOMMENDATION:

To approve the appointment of Ms. Ester Lwebuga to the position of Senior Program Manager (Unit 9/Grade 30) in the Engineering & Construction Department, at an annual salary of $130,406.15, commencing on a date to be determined by the Executive Director.

DISCUSSION:

The position of Senior Program Manager in the Engineering & Construction Department became vacant in December 2018 as a result of the promotion of the incumbent. The Senior Program Manager position works under the general supervision of the Assistant Director, Engineering and manages several in-house engineering staff. This position manages all projects in assigned programs from conceptual planning through construction contract award. The Senior Program Manager manages assigned programs including conformance to standards and procedures, staffing assignments, project scheduling and prioritization, and work product quality. The position oversees the work of professional engineering consultants under contract to the MWRA including quality of outputs, budget and schedule compliance and conformance to contract terms. The position is also responsible for preparing annual and supplementary requests for projects in the Capital Improvement Program.

Selection Process

This Senior Program Manager position was posted internally and externally. A total of 12 candidates applied for the position. Five internal candidates were determined to be qualified and were referred for an interview. The Chief Engineer; Assistant Director, Engineering, and the Special Assistant for Affirmative Action conducted the interviews. Upon completion of the interviews, Ms. Ester Lwebuga was determined to be the best candidate based on her experience, knowledge, skills and education.

Ms. Lwebuga has 19 years of engineering experience at the MWRA. She worked her first 9 years in the Field Operations Department's Operations Engineering Program progressing from an Internship to a Junior Engineer, to a Senior Engineer, and Acting Project Manager. During that period, she gained in-depth knowledge of MWRA's water system operations, including developing and/or coordinating the execution of water pipeline maintenance operations plans, distribution system shutdowns, and facility startup activities. Since then, she has worked for 10 years in the Engineering & Construction Department, starting as a Project Manager and advancing to her current position of Program Manager. She has extensive experience working on Dam inspections; Emergency Action Plans; monitoring the distribution system for potential service impacts; Cathodic Protection System testing, troubleshooting, and design replacements; water distribution rehabilitation, replacement and new pipelines; and engineering contract management. She is able to manage multiple assignments from routine to unfamiliar. She has taken the initiative to revive elapsed programs such as the Metro Operations Dams Inspections and system-wide Cathodic Protection. During her career at the MWRA, Ms. Lwebuga has earned the respect of her colleagues and supervisors.

Ms. Lwebuga has a Bachelor of Science in Civil Engineering from Calvin College and a Master of Science in Civil Engineering from the University of Massachusetts - Lowell. She is a registered Professional Engineer in Massachusetts and is a certified Grade 4 Water Distribution System Operator-in-Training.

BUDGET/FISCAL IMPACT:

There are sufficient funds in the Operations Division's FY19 Current Expense Budget to fund this position.

ATTACHMENTS:

Resume of Ester Lwebuga
Position Description
Engineering and Construction Department Organization Chart

ESTER N. LWEBUGA, P.E.

OBJECTIVE To obtain a Senior Program Manager position in the Operations Division.

EXPERIENCE

MASSACHUSETTS WATER RESOURCES AUTHORITY

Program Manager, Engineering and Construction Department — **November 2014 – Current**
Project Manager, Engineering and Construction Department — **June 2009 – November 2014**

Manage engineering services during design and construction including:

- Overseeing professional engineering consultant contracts including the development of scope of services, plans and specifications, cost estimates, work schedules, negotiation and preparation of contract award recommendations, and ensuring project compliance with budgets, schedules and terms.
- Coordinating projects with other Authority departments, host communities and permitting agencies to ensure designs comply with the Authority policies and procedures, regulatory requirements and applicable engineering standards.
- Reviewing of projects budgets and schedules for compliance with Capital Improvement Program goals.
- Attending Construction progress meetings and performing site visits to observe work progress; participating in discussions to resolve construction issues including change orders, claims and cost proposal reviews.
- Supervising subordinate engineering staff in reviewing record drawings; collecting, compiling and reporting field data; performing dams inspections, and utilizing the GIS system to support MWRA Engineering and Operations projects.

Projects Include:

- Contract 6385 ($3.5M): Cleaning and cement mortar lining of approximately 4,500 feet of a 36-inch diameter cast iron water main, 11,000 feet of 20-inch cast iron water mains; and 500 feet of 20-inch. The work also includes installing by open-cut 4,200 feet of 36-inch ductile iron water main, 6,200 feet of 24-inch ductile iron water main, and valves and appurtenances and replacement of the check valve assembly at one of the revenue meters to City of Boston.
- *Contract 6540 Design ($2.9M):* Replacement of approximately 4,500 linear feet of a 16 inch with a 24-inch water main and installation of approximately 1,250 linear feet of a 36 inch redundant water suction line connecting from a 60-inch lock-bar steel main to a 36-inch reinforced concrete main (estimated construction cost $11.2M); rehabilitation of an 85-year old 30-inch riveted steel main by sliplining with HDPE pipe (estimated construction cost $2.65M); and installation of approximately 8,800 linear feet of a new 36-inch main (estimated construction cost $12M).
- *Contract 6546, Section 28 Rehabilitation:* Cleaning and cement mortar lining of approximately 6,250 feet of 20-inch cast iron pipe and replacement of a connection to a 56-inch diameter lock-bar steel transmission main.
- *Technical Assistance Task Order Contracts*:
  - Belden Bly Bridge Water Main Relocation Feasibility Study: Relocation of a 20-inch water main using trenchless technology. The study included evaluating river crossing methodology, alignment and work limits that would provide the shortest permitting duration, easement acquisition process and construction schedule, while meeting design and schedule constraints required by the MassDOT for replacement of the bridge structure.
  - Shaft E and Shaft L Cathodic Protection Troubleshooting, replacement design and engineering services during construction
  - Shaft 5A/5 Cathodic Protection replacement design and engineering services during construction.
  - Subsurface Utility Engineering Investigations – Quality Level B: To determine the approximate horizontal location of existing utilities and their major laterals to existing buildings at specific locations within the project limits.

Operations Engineering, Field Operations Department
Acting Project Manager **March 2006 – August 2006**
Senior Engineer **April 2005 – June 2009**
Junior Civil Engineer **May 2000 – April 2005**

Provided engineering support for Field Operations department including:

- Acting as liaison on Engineering and Construction projects. Reviewing designs and construction submittals.
- Coordinating Field operations support actions and facilities start-up activities including valve operations, pipeline leakage and pressure testing and disinfection. Coordinating distribution system shutdowns with communities to minimize impact to water service.
- Developing and coordinating review and execution of Operations plans and constraints. Acting as Responsible Person for execution of Plans including monitoring of the distribution system for potential service impacts.
- Preparing Emergency Action Plans and Contingency Plans for work performed on critical parts of the distribution system.
- Overseeing Metro-Operations Dams Inspection program including review of inspection reports, performing routine dam and reservoir visual inspections, developing scope of work for Dams maintenance, and ensuring execution of recommended repairs and maintenance.

Engineering Intern **July 1999 – April 2000**

- Valve Replacement Design: Researched record plans, detail records, and field books to support the valve replacement program. Prepared designs for several blow-off valves replacement sites in the metropolitan area. Coordinated designs with local utilities. Analyzed metering data for Water Meter sizing.
- Performed administrative duties including writing correspondences, revising design reports, retrieving record plans to support ongoing design projects, publishing reports and preparing visual aids for presentations.

EDUCATION

M.S. Civil Engineering, Environmental, University of Massachusetts - Lowell, MA, May 2005

B.S. in Engineering, Calvin College, Grand Rapids, MI, May 1995

LICENSES AND CERTIFICATES

- Registered Professional Civil Engineer – Massachusetts
- Envision Sustainability Professional
- Grade IV Distribution Operator in Training
- 10 Hour OSHA Training
- 40 Hour Hazardous Waste Site Worker
- First Aid/CPR/AED

PROFESSIONAL MEMBERSHIPS

- American Society for Civil Engineers
- Boston Society for Civil Engineers

COMPUTER EXPERIENCE

Microsoft Windows, GIS ArcMAP

VOLUNTEER

EverybodyWINS /Read-to-a-Child, 09/06 – 06/07, 09/07 – 06/08; 09/12 – 06/13; 09/13 – present

MathCounts, 09/08 – 06/09; 09/09 – 06/10.

Global Children Ministry, 2000 – present

MWRA
POSITION DESCRIPTION

POSITION: Senior Program Manager

PCR#: **5525002, 55250114**

DIVISION: Operations

DEPARTMENT: Engineering & Construction

BASIC PURPOSE:

Manages all projects in assigned Programs from conceptual planning through construction contract award.

SUPERVISION RECEIVED:

Works under the general supervision of the Assistant Director, Engineering.

SUPERVISION EXERCISED:

Exercises close supervision of the internal staff as necessary, including performance reviews, to manage engineering consultant activities.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Manages assigned Programs including conformance to standards and procedures, staffing assignments, project scheduling and prioritization, and work product quality.
- Oversees the work of professional engineering consultants under contract to the MWRA including quality of outputs, budget and schedule compliance and conformance to contract terms.
- Prepares project specifications, contract documents, requests for proposals and necessary documents to secure grants and permits from various federal and state agencies.
- Supervises professional engineering work of substantial difficulty and importance requiring the application of professional engineering principles and the exercise of independent engineering judgement.
- Coordinates projects with communities, government agencies and other MWRA departments.

- Provides technical assistance to other staff in the development of program plans and designs for projects related to program management.

- Prepares annual and supplementary budget requests for the program.

- Participates in consultant selection procedures and contract negotiations.

- Addresses community and professional organizations on agency programs and policies, prepares reports and correspondence and maintains liaison with representatives of other agencies.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Knowledge of engineering principles and practices as normally attained through a four (4) year college program in civil engineering or related field; and

(B) Understanding of issues related to engineering design as acquired through eight (8) to ten (10) years of experience in water and/or wastewater field, of which a minimum of four (4) years is in a supervisory capacity; or

(C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Knowledge of water and/or wastewater unit operations design and operation, process control theory, practices and principle and computer applications.

(B) Demonstrated written and oral communication skills.

SPECIAL REQUIREMENTS:

Massachusetts Registered Professional Engineer preferred

A valid Class D Massachusetts Motor Vehicle Operators License.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, 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 stand, walk, climb or balance, stoop, kneel, crouch, or crawl, taste or smell.

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

WORK ENVIRONMENT:

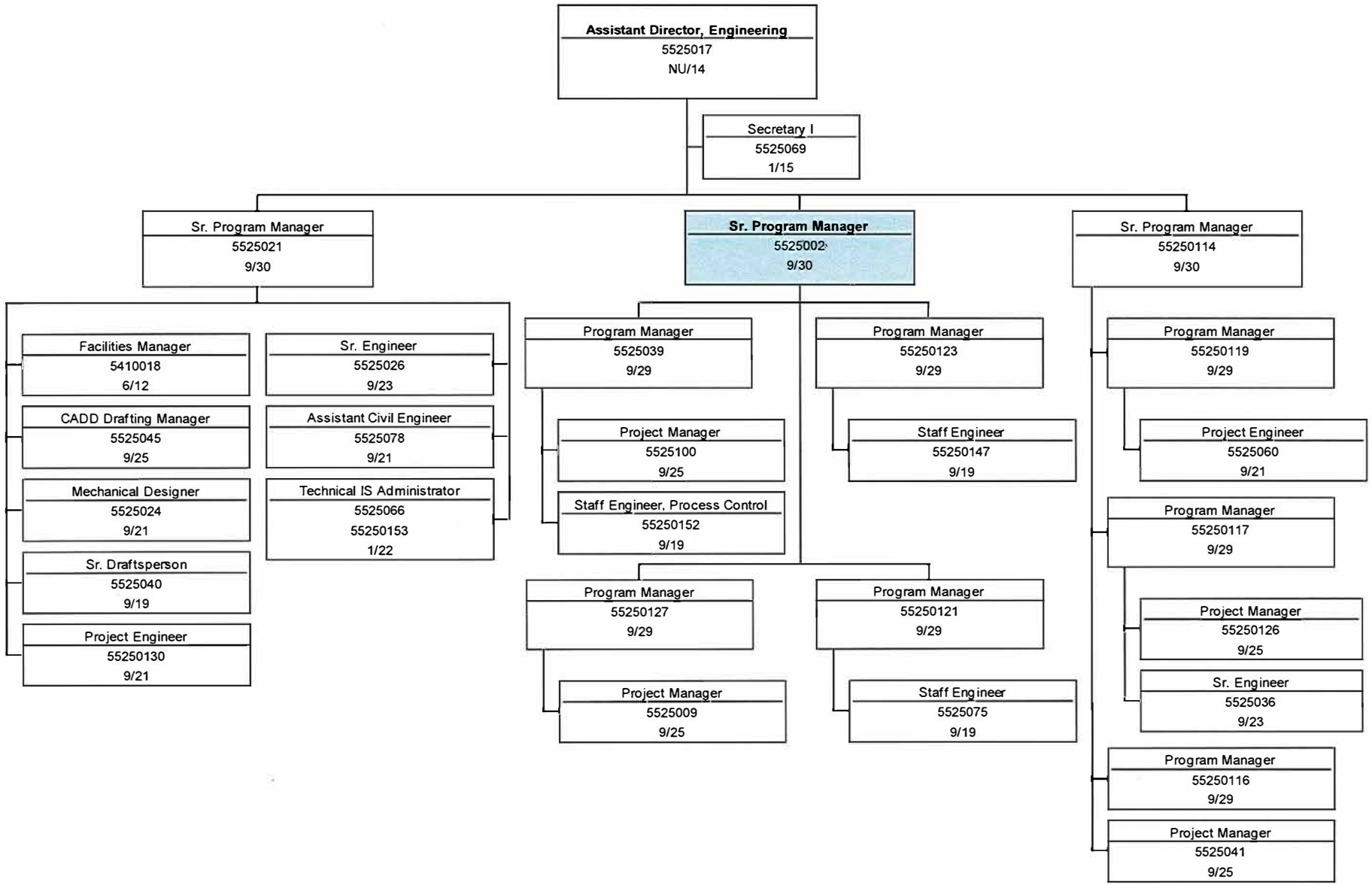
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

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

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

June 2013

Engineering & Construction
Water/Wastewater Engineering
March 2019



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Appointment of Program Manager, Data Management Environmental Quality

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COMMITTEE: Personnel & Compensation

___ INFORMATION
_X_ VOTE

Betsy Reilley, Ph.D., Director, ENQUAL
Andrea Murphy, Director, Human Resources
Carolyn Fiore, Deputy Chief Operating Officer
Preparer/Title

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

RECOMMENDATION:

To approve the appointment of Romesh Stanislaus, Ph.D., to the position of Program Manager, Data Management (Unit 9, Grade 29) in the Environmental Quality Department, at an annual salary of $112,433.12 commencing on a date to be determined by the Executive Director.

DISCUSSION:

The position of Program Manager of Data Management became vacant in January 2019 upon the departure of the previous incumbent. Organizationally, this position reports to the Senior Program Manager, Water Quality Assurance. The Data Management unit is part of the Environmental Quality Department and is located in Southborough. The group is responsible for managing data and generating reports for Massachusetts Department of Environmental Protection Drinking Water Compliance and other water quality reports, responding to data requests, assisting in data analysis, and ensuring data is accurate and of high integrity. The Program Manager, Data Management oversees the development of database systems and management of water quality data, develops standards for the management and logging of data, ensures robust data systems, performs advanced querying and analysis of water quality data to assist in understanding trends, and supports data analyses of others in the Environmental Quality Department. The position also develops tools to improve data visualization and serves as an on-call manager during water quality emergencies.

Selection Process

This Program Manager position was posted internally and externally. A total of 17 candidates applied for the position; three were internal applicants. Four external candidates were determined to be qualified and were referred for an interview. The Director of Environmental Quality; the Senior Program Manager, Water Quality Assurance; and the Manager, Operations Support conducted the interviews. Upon completion of the interviews, Romesh Stanislaus, Ph.D., was determined to be the best candidate based on his experience, knowledge, skills and education.

Dr. Stanislaus has 16 years of experience in developing and maintaining database systems. He has a very strong data analytics and bioinformatics background. Dr. Stanislaus has worked with complex database systems, integrating a wide range of data sets, and has developed these to improve data driven decision making. Dr. Stanislaus has experience in many different database platforms including Oracle, a knowledge of querying tools including SQL, and strong experience in a number of programming languages applicable to MWRA data management needs including R, python and MATLAB. Dr. Stanislaus has demonstrated leadership in the planning and development of databases, creation of reports, developing automated functions, creating user interfaces, and coordinating with peers to meet project goals. He has extensive experience in leading projects and project teams to design, implement and maintain complex data systems. Dr. Stanislaus has analyzed data using PCA, multivariate, and other statistical analyses. His extensive knowledge of data quality, data management, and his data analytics experience make him the best qualified candidate.

Dr. Stanislaus has a Bachelor of Arts in Biology from Lawrence University, WI, a Bachelor of Arts in Computer Science from College of Charleston, SC, and a Ph.D. in Microbiology and Immunology from Medical University of South Carolina, SC.

BUDGET/FISCAL IMPACT:

There are sufficient funds for this position in the FY19 expense budget.

ATTACHMENTS:

Resume of Romesh Stanislaus, Ph.D.
Position Description
Organization Chart

Romesh Stanislaus, PhD.

Professional Experience

IFS Consulting services, Cambridge, MA, 2018 – present
Consultant, Informatics/Analytics
Manage and deliver analytic projects per client requirements

- Application informatics and statistical methods to analyze and process clinical data using R/Python libraries
- Development of relational databases
- ETL disparate data from public databases for further statistical analysis
- Establish data quality assurance procedures before analysis
- Generate hypothesis based on data analyses, and recommend a way forward based on the results

Sanofi Pasteur, Cambridge, MA, 2010 – 2017
Scientist, Informatics/Bioinformatics
Manage and deliver analytic results to clinical development teams

- Project lead for developing and implementing standard methodology for analyzing high dimensional data to help answer strategic question in the development process for the organization
    - Extensive experience in using informatics tools and statistical methods to integrate diverse data sets and analyze clinical data
    - Extensive experience writing software to integrate data from instruments as well as creating data structures to standardize data exchange
    - Experience using univariate and multivariate statistical methods (e.g. ANOVA, logistic regression, PCA, factor analysis) for analyses of research data, and, interpretation of the analysis results
    - Experience installing, using and maintaining pipeline software such as KNIME and Spotfire
    - Experience using statistical packages (R/Bioconductor) and machine learning libraries (Scikit-learn/NumPy), as well data manipulation packages (Pandas)
- Design, develop and implement Text Mining/Natural Language Processing (NLP) techniques and Machine Learning (ML) to answer business related questions
    - Experience using machine learning libraries Scikit-learn/NumPy, to predict clinical outcomes
    - Experience using HPC cluster and cloud services (Amazon, Google), as well as Tensorflow/Keras to train and predict clinical outcomes

Scientific Information Systems/ Business System Analyst

- Responsible for developing IS requirements and uses cases for informatic projects
    - Design and implemented a management system for storing clinical study data and results – Extensive experience in designing, implementing and querying relational databases (PostgreSQL, SQLlite, Oracle, MySQL). Experience with ETL for database consumption and ELT for analytic software consumption.
    - Experience using Dashboards to visualizing clinical data and for interrogating the clinical databases
- Scientific lead/Scientific owner informatic technology projects – Provide leadership and expert advice on informatics projects
    - Define, Identify and Evaluate new technology –
    - Interact with vendors and recommend on bringing new technologies in-house
    - Experience in conducting due diligence reviews of external opportunities
- Design and implement relational as well as semantic databases to store business data to manage and access and disseminate to other business users

Manage relationships with internal & external collaborators

- Responsible for managing internal and external collaborations for vaccine discovery projects
- Manage relationships, scope of work and expectations with consultants/contractors/reports

MD Anderson Cancer Center, University of Texas, Houston, TX, 2006 – 2010
Instructor, Department of Bioinformatics and Computational Biology, Division of Quantitative Sciences
Provide analysis support for oncology research projects

- Design, develop and implement informatic and statistical methods to analyze and process clinical cancer data
- Design and develop relation databases (PostgreSQL) for warehousing cancer clinical data

Management and leadership experience in Data Standards and informatics tool development

- Develop computational tools for the analysis and prediction of premature birth outcomes
- Develop tools to store, manage, integrate and disseminate proteomic data (2-D gel electrophoresis and, Reverse phase protein arrays) using ontologies and semantic web technologies

Collaboration with cross-functional teams

- Interact with multidisciplinary teams across different functional units within the institute matrix to provide key bioinformatics support by integrating data collected at the laboratory level and investigating pathways and networks to expedite move to the next level of discovery

Medical University of South Carolina, Charleston, SC, 2002 – 2006
Post-Doctoral Research Fellow – Bioinformatics/Biostatistics, Department of Biostatistics, Bioinformatics, and Epidemiology
Provide bioinformatics support to research teams

- Utilized statistical and informatics approaches to study the regulation of gene expression by different drug and drug combinations in acute experimental autoimmune encephalomyelitis
- Developed analysis pipelines for 2-D gel electrophoresis and array based reverse phase protein arrays

Leadership experience in managing teams in Data Standards and informatics support

- Led effort for the acceptance of the published XML based meta-data schema standards for 2-D gel electrophoresis and reverse phase protein arrays (see article in BioInform 8(12):3 2004)

Medical University of South Carolina, Charleston, SC, 1997 – 2002
Doctoral Trainee – Immunology, Department of Microbiology & Immunology

Education
Microbiology and Immunology, PhD. Medical University of South Carolina, SC
Computer Science, BA, College of Charleston, SC
Biology, BA, (*Cum Laude*), Lawrence University, WI
Coursework in machine learning & AI – Udacity

Skills:

- Programming: Python, R, SAS, git, PHP, MATLAB
- Ontology: IMGT-Ontology, Vaccine Ontology, Disease Ontology, NCI Thesaurus etc.,
- Business intelligence: Talend, Spotfire, Tableau, KNIME
- Databases: PostgreSQL, Oracle, MongoDB
- Database query languages: SQL
- Database administration (PostgreSQL)
- Linux system administration
- Extensive working experience in HPC environments, AWS/S3

MWRA
POSITION DESCRIPTION

POSITION: Program Manager, Data Management

PCR#:

DIVISION: Operations

DEPARTMENT: Environmental Quality, Water

BASIC PURPOSE:

Manages the overall activities of the Data Management group relative to quality assurance and quality control of complex water quality monitoring data, database management, and compliance-required reporting. Develops a comprehensive master plan for data storage and management and report automation, utilizing essential Quality Assurance/Quality Control (QA/QC) and robust back-up methodologies.

SUPERVISION RECEIVED:

Works under the general direction of the Senior Program Manager, Water Quality.

SUPERVISION EXERCISED:

Directs the work of scientific data management staff. Exercises close supervision of subordinate project managers and assigned data management staff. Provides technical assistance to the overall EnQual-Water group.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Supervises and manages staff, including assignment of projects, evaluation of performance, and staff development planning to ensure that the compliance-required data are complete, accurate and accessible. Provides technical and administrative assistance to staff in the development and management of projects.

- Supervises professional multi-discipline scientific and data management work of substantial difficulty and importance, requiring application of scientific principles and the exercise of independent professional judgment.

- Establishes and oversees data quality control and quality assurance procedures, and maintains records of QA/QC activities. Ensures accuracy and integrity of data. Documents data anomalies or water quality problems.

- Oversees the development of algorithms for calculation of compliance limits, and the procedure for determining when MWRA exceeds those thresholds within the time

required by the Massachusetts Department of Environmental Protection (DEP) Drinking Water Regulations.

- Provides leadership and planning to develop and implement a master plan for integrating a large amount of complex data from various sources and data platforms into a unified database that can efficiently produce accurate, informative reports of key water quality information in a timely manner to help improve the operations of the water treatment process and meet regulatory needs.

- Oversees the preparation and distribution of the Weekly Water Quality Report, monthly Water Quality Update, monthly DEP Compliance Report, monthly Yellow Notebook, Quarterly Orange Notebook, community low chlorine residual reports, and Annual Water Quality Report also known as the Consumer Confidence Report (CCR).

- Oversees and coordinates cooperative database project development with other MWRA divisions and departments to ensure complete and coordinated projects. Oversees preparation of department Management Information Systems (MIS) budget requests, coordination with MIS to ensure resources are available, and within-department assistance with hardware and software issues. Coordinates intra-agency resources to complete projects in a timely and efficient manner.

- Supports and develops efficient, timely, well integrated databases for purposes of Water Quality (WQ) monitoring and reporting including Complaints Database, CT database, water quality data requests. Develops "Golden Database" for unified storage of all final/validated water quality data used for compliance and related reporting.

- Develops improved water quality reporting functions and implement automated systems for compliance calculations, staff notifications, and reporting.

SECONDARY DUTIES:

- Performs other duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Knowledge of principles and practice of engineering, chemistry, biology, environmental science or related field as normally obtained through a four-(4) year college program. A master's degree or Ph.D is preferred; and

(B) Comprehensive knowledge of database management and reporting systems including experience in designing and implementing unified, well-integrated database systems, as acquired through seven (7) to nine (9) years of experience. A Ph.D. can be substituted for up to three (3) years of work experience; and

(C) Demonstrated knowledge of laboratory and/or water quality data, reporting, drinking water regulations, water treatment, biology and/or chemistry is preferred; and

(D) Three (3) to five (5) years supervisory experience; or

(E) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Strong leadership skills and demonstrated ability to lead a project team and develop and maintain productive working relationships with external parties. Ability to efficiently and productively utilize resources authority wide.

(B) Strong analytical and computer skills, including proficiency with statistical and graphical analyses, such as parametric, non-parametric, multivariate and multivariable analyses, spreadsheets, word processing and database application programs.

(C) Demonstrated ability to design and implement well-integrated, complex, and robust databases and reporting systems. High level proficiency in database management and statistical analysis of water quality data.

(D) Advanced knowledge of Oracle, SQL, Access, Excel required. Knowledge of Laboratory Information Management System (LIMS), PI System (OSIsoft), and/or AQUARIS software preferred.

(E) Programming experience and skill in R, Python, and/or MATLAB preferred.

(F) Proven expertise in the areas of experimental design, data analysis, and statistical process control. Knowledge of process control theory, practices and principles.

(G) Outstanding organizational, written and verbal communication skills. Excellent demonstrated ability to gather, analyze and present technical information in a clear, concise, and understandable manner.

SPECIAL REQUIREMENTS:

Acts as On-Call Manager for Quality Assurance EnQual-Water in rotation with other QA staff.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

There are no requirements that weight be lifted or force be exerted in the performance of this job, although the employee will have the opportunity to participate in field activities that involve lifting weight (e.g. water, sediment, or other environmental samples) or exerted force. Specific vision requirements required by this job include close vision, distance, vision, depth perception, and the ability to adjust focus.

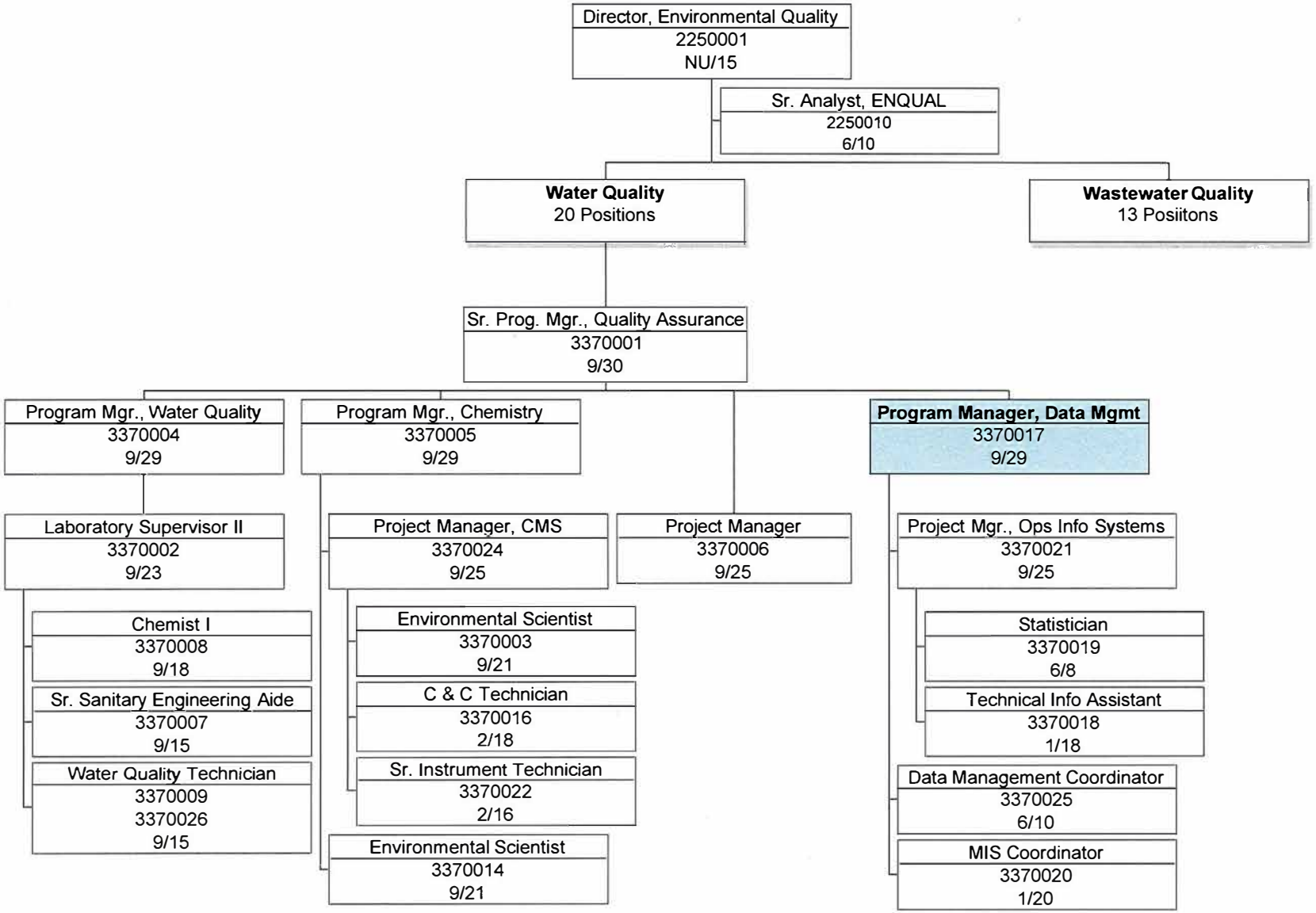
WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee regularly works in an office environment. The noise level in the work environment is usually a moderately quiet office setting.

January 2019

Environmental Quality

March 2019



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Appointment of Program Manager, Meter Data and Engineering, Planning Department

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COMMITTEE: Personnel & Compensation

___ INFORMATION
_X_ VOTE

Steve Estes-Smargiassi, Director, Planning & Sustainability
Andrea Murphy, Director, Human Resources
Carolyn Fiore, Deputy Chief Operating Officer
Preparer/Title

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

RECOMMENDATION:

To approve the appointment of Mr. Michael M. Greeley, to the position of Program Manager, Meter Data and Engineering (Unit 9, Grade 29), in the Planning Department, at an annual salary of $112,433.12, commencing on a date to be determined by the Executive Director.

DISCUSSION:

The position of Program Manager, Meter Data and Engineering became vacant in September 2017 upon the promotion of the incumbent. The Program Manager, Meter Data and Engineering reports directly to the Manager of Metering and Monitoring and supervises a staff of three who are responsible for overseeing the collection, accuracy and quality assurance of all water and wastewater flow data used for operational and rate revenue allocation purposes. The position works closely with staff who maintain metering field equipment installed in water and wastewater pipes, with Finance staff who use the data to allocate shares of the rate revenue requirement to each served community, and with Planning staff who use the data to report on Inflow and Infiltration (I/I) and assist communities in managing I/I. The position also works directly with community staff who use the data to manage their systems and understand water and sewer charges.

Selection Process

The Program Manager position was posted both internally and externally. A total of 14 candidates applied for the position, six of whom were determined to be qualified and were referred for an interview. The Director of Emergency Planning and Preparedness; the Manager of Metering and Monitoring; and the Manager of Operations Support conducted the interviews. Upon completion of the interviews, Mr. Greeley was determined to be the best qualified candidate based on his experience, knowledge, skills and education.

Michael Greeley is currently an Associate at Hazen and Sawyer where he has held progressively more responsible positions since 2007. He has managed the design of a number of water and wastewater facility projects. He was the project manager for MWRA's Spot Pond Water Storage Facility and Pump Station project, one aspect of which was the design and installation of the associated meters, Telog system, and SCADA controls. He also managed the design and construction of the Madbury Water Treatment Plant upgrade project in Portsmouth, NH., which included metering installation and SCADA data coordination. He is currently managing design of the Saco River Water Treatment Facility Upgrade project, which includes new instrumentation and control and real time SCADA metering of raw, filtered and finished water. In his role at Hazen, Mr. Greeley manages field investigation, design engineering, permitting, coordination with local officials, quality control, start-up testing, and record documentation for major projects. He directly supervises four engineers. He also serves as the corporate QA/QC Policy Manager, responsible for the review and evaluation of contract documentation generated by the Boston Office. Prior to that Mr. Greeley was the Assistant City Engineer in Melrose where he managed design consultants and collected and analyzed flow data for their unidirectional flushing program.

Mr. Greeley possesses good knowledge of technologies employed to collect meter data, and he has experience in managing, extracting and presenting data in understandable formats. He recently has taken courses in data science and data analytics. He has presented project information to public audiences and forums and has also formally presented to technical audiences such as the American Waterworks Association and the New England Waterworks Association, where he is an active member serving on the Program Committee.

Mr. Greeley has a Bachelor of Science in Civil Engineering and a Master of Engineering with a concentration in Project Management from Cornell University. He is a Registered Professional Engineer in Massachusetts and New Hampshire.

BUDGET/FISCAL IMPACT:

There are sufficient funds for this position in the FY19 expense budget.

ATTACHMENTS:

Resume of Michael M. Greeley
Position Description
Organization Chart

MICHAEL M. GREELEY PE, ENV SP

SKILLS & ABILITIES

Registered Professional Engineer (MA #47546, NH #14146, ME #14330)

Multidisciplinary Project Management – Design, Construction, Startup and Operation

Envision ™ Sustainability Professional ENV SP

Database Development, SQL, Python/R Data analytics

EXPERIENCE

HAZEN AND SAWYER, PC –BOSTON, MA

Associate – April 2013 to Current

Senior Principal Engineer/Principal Engineer – April 2009-2013

Assistant Engineer – January 2007-2009

- Design Manager for multi-disciplinary design projects up to $5 million design fee. responsibilities include coordinating the work of teams from up to eight different design disciplines, up to 20 employees and multiple subconsultants
- Facility SCADA Startup
- Mechanical/Process control engineering design lead on distribution system and water treatment design projects
- Project-specific direct supervision of five junior staff
- Corporate QA/QC Policy Manager – Boston Office

CITY OF MELROSE, MA ENGINEERING DEPARTMENT, MELROSE, MA

Assistant City Engineer – February 2005 to November 2006

- Water Distribution System/Wastewater collection system engineer
- Managed Several design consultants
- Collected, recorded and analyzed flow rate data for unidirectional flushing program.
- Public Communications

Key Projects

Saco River Water Treatment Facility Upgrade – Maine Water Company

Biddeford, ME – Currently Underway – $62 mil. Construction (Estimated), $3.8 mil. Design

- Project Manager for the design of Maine Water Company's Saco River Water Treatment Facility.
- Developed design budget numbers for internal design coordination for 25,000 man-hour with design effort and 4 subconsultant partner contracts
- Project includes I&C for new treatment facility, raw, filtered and finished water metering and plant level controls based on real-time SCADA monitoring.

Spot Pond Water Storage Facility and Pump Station - Massachusetts Water Resources Authority
Stoneham, MA - Online December 2015 - $50 mil. Construction, $3.3 mil. Design

- Installed four MWRA non-revenue meters in exterior valve pits.
- Drafted functional control descriptions in accordance with MWRA SCADA Standards.
- Provided functional description for MWRA Telog system
- Provided coordination efforts with local Stoneham officials and State building code officials to ensure smooth project delivery.

Madbury Water Treatment Plant – City of Portsmouth, NH

Madbury, NH - Online November 2011– $21 mil. Construction – $2 mil. Design

- Madbury WTP was New England's first LEED® Silver Certified water treatment plant
- Resident Engineer for Project startup including flow meter installation and SCADA data collection coordination.
- Lead mechanical engineer for dissolved air flotation and finished water pump systems

Macintosh Well and Blending Facility – Town of Newmarket, NH

Online November 2016 - $1.7 mil Construction, $180K Design

- Used remote radio monitoring of several flow meters within the Town's distribution system to control high service pumps to achieve mandatory minimum supply pressures throughout distribution.

City of Melrose Water Main Flushing and Replacement Program Management

Continuous – 2005 to 2006

- Leveraged distribution flushing data to identify city water mains with highest likelihood of failure and recommended CIP projects.

EDUCATION

CORNELL UNIVERSITY, ITHACA, NY

Bachelor of Science – Civil Engineering – 2002

Master of Engineering – Civil Engineering (Project Management) – 2003

- Project management capstone analyzing production efficiency utilizing data envelopment analysis with General Motors
- Database Design and SQL

COURSERA SPECIALIZATIONS, ONLINE

Python for Everybody (Univ. Of Michigan) *Completed August 2018*

Machine Learning Foundations (Univ. Of Washington) Completed October 2018

Data Science (Johns Hopkins University) Currently Enrolled – Expected Completion June 2019

- Python and R Programming for Data Analysis, mining and visualization projects.
- Machine learning specializations including: linear and logistic regression, clustering and nearest-neighbor, recommender algorithms

OUTREACH

2 Time Presenter at the American Water Works Association Annual Conference.
8 Time Presenter at the New England Waterworks Association (NEWWA) and Connecticut Waterworks Association (CTAWWA) Conferences.
NEWWA Program Committee, 2008 – Current (Vice Chair – 2011-2014, Chair – 2014-2017)
NEWWA Younger Member of the Year – 2014

MWRA
POSITION DESCRIPTION

POSITION: Program Manager, Meter Data and Engineering

PCR#: 1520010

DIVISION: Operations

DEPARTMENT: Planning/Meter Data

BASIC PURPOSE:

Manages data collection, quality assurance, and total flow calculations used for allocation of MWRA's rate revenue requirements for the water and wastewater systems using revenue meters, master meters, and other associated equipment.

SUPERVISION RECEIVED:

Works under the general supervision of the Manager, Metering and Monitoring.

SUPERVISION EXERCISED:

Exercises close supervision of the Project Manager, Meter Data and technical and administrative staff as assigned.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Manages all phases of water and wastewater meter data collection, quality control, and data access for users and customer reporting.

- Establishes and oversees data quality control and quality assurance procedures, and maintains records of quality assurance/quality control (QA/QC) activities. Ensures accuracy and integrity of data. Documents data anomalies.

- Coordinates closely with the Management Information Systems Department and external consultants to ensure up-to-date and user-friendly data management systems integral to MWRA's meter program.

- Coordinates with meter maintenance group to ensure emergency and preventive maintenance is performed on all meters used in the measurement and recording of water and wastewater flow and pressure.

- Recommends, develops, and implements revenue, operational, and regulatory matter policies

and procedures related to metering water and wastewater flows.

- Represents the MWRA in discussions with MWRA member communities related to water and wastewater flows and works to resolve discrepancies

- Coordinates projects with MWRA departments, communities and government agencies, and provides technical information and assistance.

- Notifies community personnel regarding increases in water demand that that might be related to increased hidden leakage within their distribution system.

- Collects annual non-billed water data from MWRA water communities.

- Participates in the preparation of staff summaries to the Board of Directors, and presents meter and flow related information to the Board. Prepares the monthly submissions for the Management Indicators reports (Yellow and Orange Notebooks).

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Knowledge of water and wastewater metering, instrumentation, electronics and data management as normally attained through a four (4) year Bachelor of Science degree in civil, electrical or mechanical engineering or related field; and

(B) Seven (7) to nine (9) years of experience in the installation, operation and maintenance of water or wastewater metering collection systems; and

(C) Minimum of three (3) years of experience in data quality assurances processes; and

(D) Three (3) to five (5) years of experience supervising staff or consultants; or

(E) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Knowledge of water and /or wastewater metering, and associated data communication and management systems.

(B) Strong analytical and computer skills, including proficiency with spreadsheets, SQL database programs and engineering applications software.

(C) Demonstrated experience in the operation of a computerized water and/or wastewater flow metering system or similar software application.

(D) Demonstrated experience using Telog Enterprise software is preferred.

(E) Working knowledge of MWRA and community water distribution systems and wastewater collection systems is preferred.

(F) Ability to effectively communicate technical material orally and in writing.

SPECIAL REQUIREMENTS:

Must be available to respond to emergencies as needed. May be required to be part of an on-call rotation.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

The employee must regularly lift and/or move up to 10 pounds. Specific vision abilities required

by this job include close vision, and the ability to adjust focus.

WORK ENVIRONMENT:

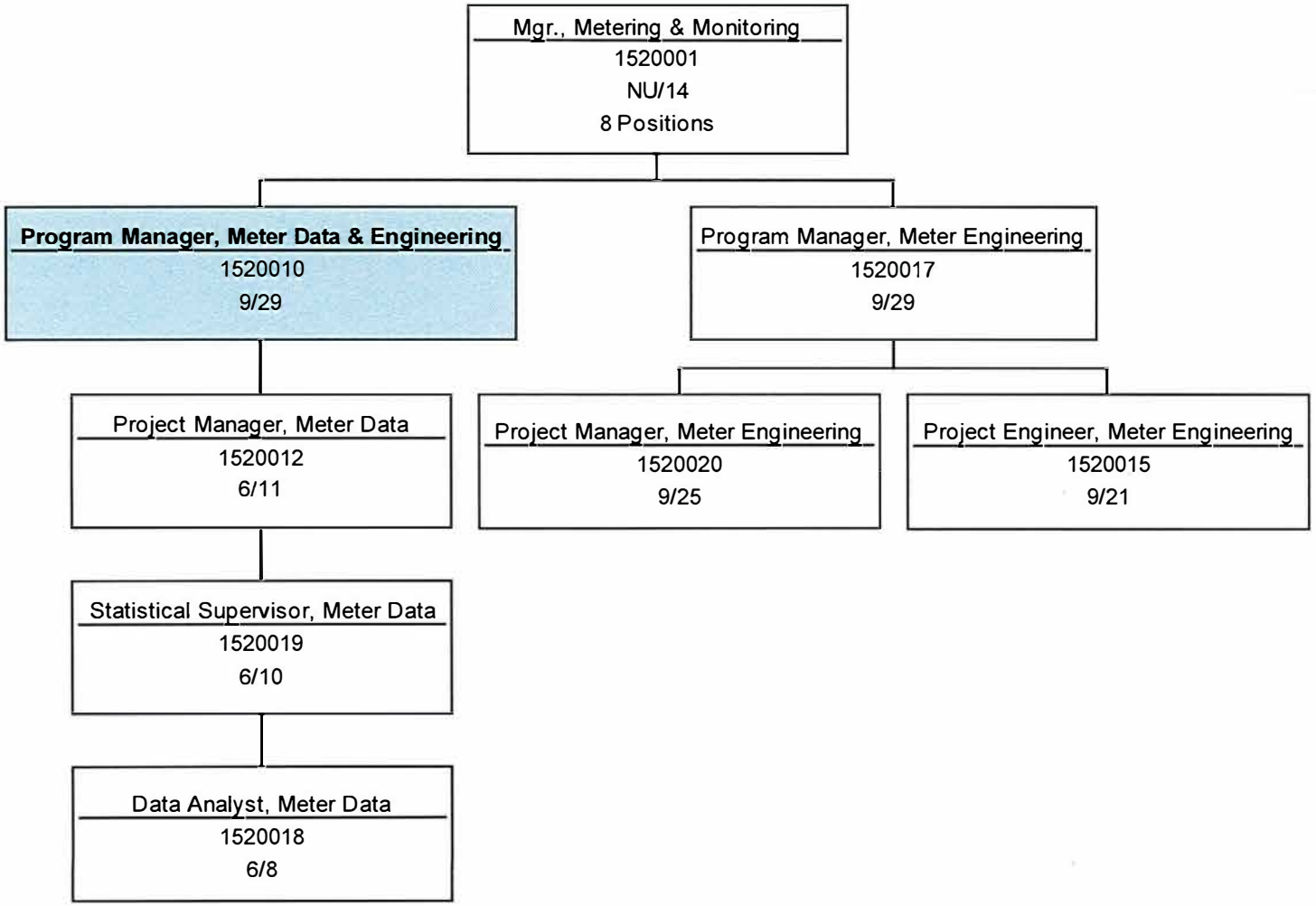
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee regularly works in an office environment. The employee occasionally works near moving mechanical parts and is occasionally exposed to outdoor weather conditions. The employee is occasionally exposed to fumes or airborne particles and toxic or caustic chemicals.

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

January 2019

Planning - Meter Data

March 2019



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Recommendations for Non-Union Pay Equity Adjustments

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COMMITTEE: Personnel & Compensation

_____ INFORMATION
__X__ VOTE

Robert Donnelly, Manager, Operations Support
Andrea Murphy, Director, Human Resources
Patterson Riley, Special Assistant for Affirmative Action
Preparer/Title

RECOMMENDATION:

To accept the recommendations of the pay equity consultant Hirsch Roberts Weinstein LLP and approve the salary adjustments summarized in Attachment B "List of Recommended Salary Adjustments" commencing on a date determined by the Executive Director.

DISCUSSION:

The Massachusetts Equal Pay Act (MEPA) went into effect July 1, 2018. MEPA clarifies the already existing requirement that employers pay employees doing comparable work at the same rate of pay without distinction by gender. MEPA defines "comparable work" as any work that requires substantially similar skill, effort and responsibility, and is performed under similar working conditions.

A job description or job title standing alone does not determine what work is comparable. Rather, jobs as actually performed in the workplace must be compared. The law provides that even if a male employee and a female employee have different job titles, if those jobs are "comparable", as defined by the law, an employee of one gender may not receive lesser wages than an employee of a different gender unless permitted by factors provided by the law.

Massachusetts employers are permitted to pay employees at different rates for comparable work only when based on a limited number of factors such as a seniority system and/or the education, training, or experience of a particular employee. MEPA also prohibits an employer from retaliating against an employee who files a complaint or reports a violation of the law.

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

On July 2, 2018, MWRA awarded a consultant contract to Hirsch Roberts Weinstein LLP (HRW) to assist MWRA with conducting a self-evaluation of its pay practices for Non-Union employees. The purpose of the self-evaluation is to assist the Authority with complying with MEPA.

In order to conduct a self-evaluation on MWRA Non-Union pay practices, HRW provided both employment law attorneys and an experienced human resources professional from Bondcliff HR Consultants with expertise in employee compensation practices. MWRA established an internal team of staff from Law, Operations, Human Resources and Affirmative Action to work with the Consultant on the self-evaluation process.

The Consultant's staff facilitated a total of 14 meetings to conduct the following key tasks needed to perform a self-evaluation:

1. Identify comparable jobs
2. Assess whether any differences in pay are justified under MEPA
3. Provide recommendations for remediating any gender-based pay differential
4. Perform statistical analyses required under MEPA
5. Recommend adjustments in pay practices
6. Provide a findings and recommendations report

Working with the internal MWRA project team, the Consultant facilitated the process of identifying MWRA Non-Union jobs that were of substantially similar skill, effort, responsibility, and working conditions. From this work, Non-Union jobs were placed into one of four major job categories: Administrative, MIS, Engineering, and Operations. Within these major categories, Non-Union jobs were then placed into "job groupings." Positions placed within these job groupings were determined to be of substantially similar skill, effort and responsibility, and are performed under similar working conditions. At the end of this process, a total of 26 separate job groupings were established.

Pay levels of incumbents within each of these job groupings were then reviewed and analyzed. It should be noted that no member of the MWRA project team participated in the pay analysis of the job grouping associated with their own position.

Using tools and resources provided by the Consultant, individual pay levels were compared with one another based on the applicable MEPA factors of seniority, education, training, and experience. Using this approach, the Consultant was able to identify pay differentials that could not be explained by these factors. In conducting this analysis, the Consultant was required under contract with HRW to identify situations where a salary adjustment is warranted to address any potential gender-based pay differentials as well as situations where an adjustment may be warranted based on internal inequity unrelated to gender.

In total, there are fifteen recommendations for salary adjustments out of a possible 65 Non-Union employees. These adjustments, in total, have an annual cost of $69,673 and represent 0.76% of the total annual payroll of the Non-Union group.

Of the 15, eight female employees and seven male employees are included for salary adjustments. Ten adjustments are recommended to remediate potential gender-based pay differentials under MEPA and five are recommended to address internal equity issues observed within the job grouping.

The Consultants' finding and recommendations report is included as Attachment A of this staff summary. Attachment B provides a summary of the recommended salary adjustments.

BUDGET/FISCAL IMPACTS:

There are sufficient funds in the FY19 Current Expense Budget to fund these adjustments.

ATTACHMENTS:

Attachment A:	Consultant Findings and Recommendations Report – Hirsch Roberts Weinstein LLP
Attachment B:	List of Recommended Salary Adjustments

To: MWRA Project Team

From: David B. Wilson, Arielle B. Kristan, Alexandra A. Mitropoulos, Hirsch Roberts Weinstein LLP and Russell Sullivan, Bondcliff HR Advisors, Inc.

Date: March 12, 2019

Re: Massachusetts Water Resources Authority Pay Equity Report

I. Introduction

The Pay Equity Team (as that term is defined below) conducted a self-evaluation of the Massachusetts Water Resources Authority's (MWRA) pay practices for non-union employees to assist the MWRA in establishing an affirmative defense to liability under the Massachusetts Equal Pay Act (MEPA), which went into effect on July 1, 2018. Our in-depth review confirmed our initial suspicions that the MWRA pay practices were already closely aligned with the spirit of MEPA and fair pay in general.

MEPA clarifies the already existing requirement that employers pay employees doing comparable work at the same rate of pay without distinction by gender. MEPA defines "comparable work" as any work that requires substantially similar skill, effort and responsibility, and is performed under similar working conditions.

Massachusetts employers are permitted to pay employees of different genders at different pay rates for comparable work only when the differential is based on one of six statutory justifications, including, for example, a seniority system and/or the education, training or experience of a particular employee. An employer that violates MEPA generally will be liable for twice the amount of unpaid wages owed to the affected employee, plus reasonable attorneys' fees and costs.

MEPA provides a complete affirmative defense to liability for employers if, within the prior three years and prior to the commencement of an employee's claim for violation of MEPA, the employer has completed a good-faith and reasonable self-evaluation of its pay practices. To be eligible for this affirmative defense, the self-evaluation must be reasonable in scope and detail and the employer must also demonstrate that reasonable progress has been made toward eliminating any impermissible wage differentials based on gender identified by the self-evaluation.

MEPA also adds several other protections for employees and job applicants. Under the law, employers may not prohibit employees from disclosing or discussing their wages. In addition, employers may not seek the salary history of any prospective employee before making an offer or employment that includes compensation. Finally, employers may not retaliate against an employee who exercises his or her rights under the law.

II. Pay Equity Review Participants

The MWRA established a cross-functional team to participate in the review of positions and employee pay. The MWRA Team Members included:

- Patterson Riley, Special Assistant for Affirmative Action
- Alana Hylton, Administrative Systems Coordinator, Affirmative Action
- Andrea Murphy, Director, Human Resources
- Natalie Wadzinski, Manager, Compensation, Human Resources
- Kathleen Chaloux, Senior Staff Attorney, Law Division
- Robert Donnelly, Manager, Operations Support, Operations Division

The MWRA Team awarded a consultant contract to Hirsch Roberts Weinstein LLP (HRW) to assist the MWRA with the self-evaluation. In order to conduct a self-evaluation on MWRA non-union pay practices, HRW provided employment law advice. HRW also retained Russ Sullivan, a human resources professional from Bondcliff HR Advisors, Inc. to provide advice concerning employee compensation practices. The HRW/Bondcliff Team included:

a. David Wilson, Partner, Hirsch Roberts Weinstein LLP
b. Arielle Kristan, Associate, Hirsch Roberts Weinstein LLP
c. Alexandra Mitropoulos, Associate, Hirsch Roberts Weinstein LLP
d. Russell Sullivan, President, Bondcliff HR Advisors, Inc.

The MWRA Team and the HRW/Bondcliff Team together made up the Pay Equity Team.

III. Process

The Pay Equity Team first met on July 16, 2018 to plan its review. Between August 2018 and February 2019, the MWRA Team and Mr. Sullivan met eleven times on the following dates: August 16, September 10, September 24, October 1, October 9, November 28, December 14, January 7, January 17, January 30, and February 7. The MWRA Team also met on several occasions without Mr. Sullivan. The entire Pay Equity Team met by conference call on November 13, 2018 to review and agree on the Comparable Groups and then for a final meeting on February 7, 2019.

The Pay Equity Team first collected information related to positions and employees for review of comparable positions and equal pay analyses. The information related to the position analysis included:

- Job descriptions, including:
    - Education and experience requirements;
    - Key duties and responsibilities;
    - Physical and mental effort; and
    - Working conditions.
- Organizational charts, identifying reporting relationships and peer positions; and
- Expense approval and authorization documents, identifying financial responsibility.

Similarly, the documents related to the pay analysis included:

- HRIS data including the following employee information:
    - Name
    - Date of hire
    - Gender
    - Date of entry to current position
    - Job Title
    - EEO Group
    - FLSA status
    - Current pay

- Employee resumes, including information related to education, prior relevant; experience, and licenses and certifications; and

- MWRA certification and license records.

A. Comparability Analysis

Once the information described above was collected, the Pay Equity Team conducted on-site meetings to discuss the relevant factors to define skill, effort, responsibility, and working conditions required for positions at the MWRA. In addition, Robert Donnelly, MWRA Project Manager and Mr. Sullivan further reviewed and clarified these factors during multiple conference calls. These discussions totaled approximately twenty-four hours.

Once these factors were finalized, each position was discussed against each factor, with reference to both the job description for the position and the knowledge of the MWRA Team members relating to the position. As a subset of the Responsibility factor, the MWRA Team and Mr. Sullivan considered an individual's impact on the organization if they made a mistake and, in some cases, used that to differentiate individuals in comparable groups.

Next, positions with common Skill, Effort, Responsibility, and Working Conditions profiles were placed into common groups. The groups were then compared to identify where differences in skill, effort responsibility, and working conditions were substantial. Where differences were not substantial, positions were combined into common groups.

By and large the comparable groups consist of multiple members. In some instances, we ended up with single job groupings where the management and/or operational requirements of the job were deemed unique. Ultimately, the group came to consensus on each position

B. Pay Analysis

Once the comparable groups were finalized, the Pay Equity Team conducted onsite meetings to review the statutory justifications for pay disparities to determine which ones applied to the relevant positions at the MWRA. In discussion with the MWRA Team, the Pay Equity Team made the following determinations:

Statutory Justification	Analysis
Merit System	MWRA does not have a process that meets the criteria of a Merit System as defined in the Massachusetts Equal Pay Act, so it was not used in the analysis.
Seniority System	MWRA does not have a process for determining pay rates for non-bargaining unit positions that meets the criteria of a Seniority System as defined in the Massachusetts Equal Pay Act, so it was not used in the analysis.
System which measures earnings by quantity or quality of production, sales, or revenue	MWRA does not differentiate employee pay by quantity or quality of production, sales, or revenue, so this factor was not used in the analysis.
Geographical location in which a job is performed	MWRA does not differentiate pay based on the geographic location in which the employee works, so this factor was not used in the analysis.
Travel	MWRA does not differentiate pay based on the amount of travel an employee incurs in the performance of work, so this factor was not used in the analysis. A group of employees do receive vehicles to travel to and from work. Use of these vehicles by these employees is limited to commuting to and from work to home. The use of these vehicles was not considered in the analysis.
Education, training or experience	Each of these factors were deemed relevant to the pay of employees in all comparable work groups and were therefore used in the analysis. Of note, offers of employment with MWRA consider the education, experience, licenses and certifications of the prospective employee weighed against the current employee population. In addition, position descriptions identify both minimal and preferred education, experience, licenses and certifications for positions

Once the relevant factors were determined, employees' resumes were reviewed to identify each employee's position experience, organizational experience, total experience, education, and licenses/certifications. These factors were derived in part from information regarding relevant prior work experience and date of hire and date of entry into the employee's current position, which were obtained from the MWRA HRIS system. The following information was then compiled into the Pay Calculation Tool provided by the Office of the Massachusetts Attorney General[1] (the "AGO Pay Calculation Tool") for comparison and analysis:

- Name
- Date of Hire and calculated MWRA years of experience
- Job Title
- Date of entry into current position and calculation of position experience
- Current pay rate
- Straight time and overtime paid for the 52-week period from December 1, 2017 through November 30, 2018
- Regular and overtime hours worked during the 52-week period from December 1, 2017 through November 30, 2018
- Scheduled hours

Following the analysis using the AGO Pay Calculation tool, the MWRA Team and Mr. Sullivan held on-site meetings to perform comparator pay analysis within each group with more than one employee. In addition, the MWRA Project Manager and Mr. Sullivan spoke during multiple conference calls to review and clarify the comparator pay analysis. These discussions totaled approximately nine hours. This approach was necessitated because all comparable groups contained fewer than 30 employees, and therefore were not conducive to regression analysis. In connection with this analysis, Mr. Sullivan provided a custom Excel tool to facilitate the comparison of pay and pay factors among employees within each comparable group.

During the comparator pay analysis, each male employee in each comparable group was compared to each female employee in each group and vice versa. Specifically, comparisons were made of employee pay based on the position experience, organization experience, total experience, education and licenses/certification of each employee. Pay Equity Adjustments were recommended when an employee with a greater combination of experience, education and licenses/certifications was found to be paid less than a comparator employee of the opposite gender. Internal Compensation Adjustments were recommended when an employee with a greater combination of experience, education and license/certifications was found to be paid less compared to a comparator employee of the same gender within the comparable group.

C. Recommended Pay Adjustments

The recommended pay adjustments affect fifteen employees out of sixty-five employees. Of those fifteen employees, twelve are already within five percent of their targeted pay.

[1] The AGO Pay Calculation Tool may be accessed by visiting https://www.mass.gov/massachusetts-equal-pay-law.

Of the fifteen, eight female employees and seven male employees are recommended for salary adjustments. Ten adjustments are recommended to remediate potential gender-based pay differentials under MEPA (Pay Equity Adjustments) and five are recommended to address internal equity issues observed within the job groupings (Internal Compensation Adjustments).

The recommended pay adjustments in total, have an annual cost of $69,673 and represent 0.76% of the total annual payroll of the Non-Union group. As a result, the adjustments appear to be within MWRA's available resources to address immediately.

IV. Recommendations

Following the conclusion of the analysis, the Pay Equity Team proposes the following recommendations in addition to the recommended pay adjustments to ensure continued compliance with MEPA:

Annual Compensation Review Process. MWRA should adopt a pay equity review as part of its annual compensation review process. This process would compare the key pay factors (education, licenses/certifications and experience (position, MWRA and total) to the pay of employees within each comparable group and adjust pay increases to ensure pay aligns with these factors.

Salary Setting Process for New Hires, including members of the MWRA Project Team serving as the "MEPA gatekeeper" within the hiring process tasked with ensuring equal pay within groups. MWRA currently reviews the education, experience and licenses/certifications of potential new hires against that of existing employees within the same position or salary grade. MWRA should expand this practice to ensure that the comparison is made against all employees within the comparable group to which the position belongs.

Salary Setting Process for Transfers and Promotions, including the MEPA gatekeeper within the hiring process tasked with ensuring equal pay within groups. MWRA currently reviews the education, experience and licenses/certifications of employees under consideration for promotions and transfers compared to existing employees within the same position or salary grade. MWRA should expand this practice to ensure that the comparison is made against all employees within the comparable group that contains the position to which the employee is being transferred or promoted.

Comparability Analysis for New, Non-Bargaining Unit Positions, including the MEPA gatekeeper within the evaluation process tasked with ensuring that new, non-bargaining unit positions are placed into the appropriate comparable group. MWRA currently reviews new non-bargaining unit positions through its salary grading process to determine the grade and salary range for the position. In addition to this process, MWRA should use the comparability analysis employed in the pay equity review to determine the comparable pay equity grouping for the new position.

Integration with Positions within Collective Bargaining Units. MWRA currently conducts a regular review of pay among non-bargaining positions that supervise employees within the bargaining unit, particularly those positions from which the non-bargaining unit

supervisors and managers are drawn. This practice should continue. In addition, the comparability analysis should be extended to non-bargaining unit positions to ensure that any potential pay equity issues that may result from the identification of comparable groups' positions that include both bargaining unit and non-bargaining unit positions are identified and addressed. The comparability matrix that was used for this pay equity analysis was tailored to the non-bargaining unit positions. Should the analysis be extended to bargaining unit positions, additional levels of skill, effort, responsibility and working conditions would need to be identified for an effective analysis.

V. Conclusions

Members of the Pay Equity Team met for approximately twenty-five hours to determine comparable groups and an additional nine hours to conduct the pay analysis in a genuine attempt to identify unlawful pay disparities among employees performing comparable work. The analysis resulted in fifteen recommended adjustments, or 23.1% of the sixty-five employees.

(1) Eight of the twenty-four female employees (33%) are recommended to receive adjustments

(2) Seven of the forty-one male employees (17%) are recommended to receive adjustments

(3) Ten of the fifteen recommended adjustments are for Pay Equity reasons.

Recommended adjustments for the eight female employees total $24,359, or 0.73% of the total female payroll. Recommended annual adjustments for the seven male employees is $45,314, or 0.78% of the total male payroll.

Of the fifteen employees for whom pay adjustments are recommended, all the male employees were already being paid within 10% or their targeted pay rate and all the female employees were already being paid within 5% of their targeted pay rate. It should be noted that MWRA has historically employed an effective review process when making pay decisions. As a result, the number of recommended adjustments is relatively few as compared to other organizations performing similar self-evaluations.

The annual total dollar amount of recommended adjustments, pay equity and internal compensation, is $69,673.00, or 0.76% of payroll. As a result, the adjustments appear to be within MWRA available resources to address immediately. All adjustments are recommended to be presented to the MWRA Board of Directors for approval as soon as possible.

David B. Wilson
3/12/2019

List of Recommended Salary Adjustments
March 20, 2019

Job Grouping	Name	Job Title	Gender	Current Base Compensation	Proposed Salary Adjustment	Proposed Base Compensation	Justification
Admin - Black	Otis, Theodore	Manager, Purchasing	Male	108,766	10,714	119,480	MEPA adjustment
Admin - Brown	Giffen, Michele	Director, Administration	Female	159,783	6,657	166,440	MEPA adjustment
Admin - Brown	Francisco Murphy, Carolyn	General Counsel	Female	164,569	1,871	166,440	MEPA adjustment
Admin - Gray	King, Cheryl	Assistant Director, Internal Audit	Female	112,783	2,217	115,000	Internal Equity
Admin - Green	Horan, Matthew	Treasurer	Male	129,823	10,577	140,400	Internal Equity
Admin - Green	Riley, Patterson	Special Assistant For Affirmative Action	Male	142,635	4,921	147,556	MEPA adjustment
Admin - Green	Murphy, Andrea	Director, Human Resources	Female	145,230	2,326	147,556	MEPA adjustment
Admin - Green	Card, Bethany	Director, Environmental & Regulatory Affairs	Female	146,775	781	147,556	MEPA adjustment
Admin - Orange	Convery, Rose Marie	Special Assistant to Executive Director	Female	129,033	2,455	131,488	MEPA adjustment
Admin - Yellow	Rozowsky, Brian	Director, Internal Audit	Male	135,372	2,708	138,080	Internal Equity
Ops - Black	Wong, Lisa	Manager, Process Control	Female	132,151	1,422	133,573	MEPA adjustment
Ops - Blue	Keough, Daniel	Manager, Maintenance	Male	130,933	3,716	134,649	Internal Equity
Ops - Brown	Reilley, Elizabeth	Director, Environmental Quality	Female	139,620	6,630	146,250	MEPA adjustment
Ops - Green	Wenger, Ethan	Deputy Director, DIWWTP	Male	137,188	4,401	141,589	Internal Equity
Ops - Purple	Foss, Guy	Director, Western Operations	Male	141,723	8,277	150,000	MEPA adjustment
				Total Increases:	**69,673**		
				Total Payroll:	**9,186,180**		
				As % of NU Payroll:	**0.76%**		

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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PERSONNEL & COMPENSATION COMMITTEE MEETING

to be held on

Wednesday, March 20, 2019

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

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

Time: Immediately Following Water Committee

AGENDA

A. Approvals

1. PCR Amendments - March 2019
2. Appointment of Assistant Contracts Manager, Administration Division
3. Appointment of Manager, Employment, Human Resources
4. Appointment of Senior Program Manager, Engineering and Construction
5. Appointment of Program Manager – Data Management, Environmental Quality
6. Appointment of Program Manager, Meter Data and Engineering, Planning Department
7. Recommendations for Non-Union Pay Equity Adjustments

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the

Personnel and Compensation Committee

February 20, 2019

A meeting of the Personnel and Compensation Committee was held on February 20, 2019 at the Authority headquarters in Charlestown. Committee Chair Wolowicz presided. Present from the Board were Messrs. Carroll, Cook, Cotter, Foti, Flanagan, Pappastergion, Peña, Vitale and Walsh. Among those present from the Authority staff were Frederick Laskey, Carolyn Francisco Murphy, David Coppes, Carolyn Fiore, Michele Gillen, Andrea Murphy, Patterson Riley and Kristin MacDougall. The meeting was called to order at 12:07 a.m.

Information

Update on Massachusetts Equal Pay Act

Staff presented a verbal update. (Mr. Pappastergion left and returned to the meeting.)

Approvals

* PCR Amendments - February 2019

Staff made a verbal presentation. The Committee recommended approval (ref. P&C B.1).

* Appointment of Warehouse Manager

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

* Appointment of Program Manager, Water Quality

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

* Appointment of Associate Special Assistant for Affirmative Action

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

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* Committee recommendation approved by the Board on February 20, 2019

* Appointment of Director, Wastewater Operations and Maintenance

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

* Appointment of Director, Metropolitan Operations

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

* Appointment of Deputy Director of Waterworks

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

* Approval of the 2019 Affirmative Action Plan

Staff made a verbal presentation. There was discussion and questions and answers.

The Committee recommended approval (ref. P&C B.8).

Contract Awards

* Workers' Compensation Third Party Administrator Services: PMA Management Corp. of New England, Contract A618

There was brief discussion and questions and answers.

The Committee recommended approval (ref. P&C C.1).

The meeting adjourned at 12:15 p.m.

* Committee recommendation approved by the Board on February 20, 2019

STAFF SUMMARY

TO: Board of Director
FROM: Frederick A Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: March PCR Amendments

COMMITTEE: Personnel and Compensation

____ INFORMATION
_X_ VOTE

Andrea Murphy, Director of Human Resources
Preparer/Title

Michele S. Gillen
Director, Administration

RECOMMENDATION:

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

DISCUSSION:

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

March PCR Amendments

The one PCR amendment is for one filled position in the Administration Division changing the title and grade.

The amendment is:

Administration Division Organizational Change

1. Title and grade change to one filled position in the Occupational Health and Safety department, from Senior Field Service Technician, Unit 1 Grade 17, to Safety Technician, Unit 9 Grade 18 as a part of a union settlement to more accurately reflect the position's responsibilities.

The amendment requires approval by the Personnel and Compensation Committee.

BUDGET/FISCAL IMPACT:

The annualized budget impact of this PCR amendment will be a cost of $1,684. Staff will ensure that the cost increase associated with this PCR amendment will not result in spending over the approved FY19 Wages and Salaries budget.

ATTACHMENTS:

Old Job Description
New Job Description

MASSACHUSETTS WATER RESOURCES AUTHORITY
POSITION CONTROL REGISTER AMENDMENTS
FISCAL YEAR 2019

PCR AMENDMENTS REQUIRING PERSONNEL & COMPENSATION COMMITTEE APPROVAL - March 20 ,2019															
	Current									Current/Budget	Estimated		Estimated Annual		Reason
Number	PCR #	V/F	Type	Current Title	UN	GR	Amended Title	UN	GR	Salary	New Salary		$ Impact		For Amendment
P17	Administration Occupational Safety and Health 8910006	F	T. G	Senior Field Service Technician	1	17	Safety Technician	9	18	$67,423	$69,107 - $69,107		$1,684 - $1,684		Union settlement
PERSONNEL & COMPENSATION COMMITTEE TOTAL=					1						TOTAL:		$1,684 - $1,684		

MWRA
POSITION DESCRIPTION

OLD

POSITION: Senior Field Service Technician

PCR#:

DIVISION: Operations

DEPARTMENT: Inspection Water

BASIC PURPOSE:

Locates water leaks in MWRA Distribution System and for MWRA communities. Performs flow tests for meter testing. Assists in training personnel of MWRA communities in methods of leak detection.

SUPERVISION RECEIVED:

Works under the general supervision of the Supervisor of Inspection Branch.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Performs continual leak detection of MWRA Distribution System through use of leak correlate and sonic leak apparatus, generally during late night hours.
- Marks leak locations and assists contract and community repair crews in pinpointing leaks.
- Prepares a variety of written reports for MWRA and MWRA communities including survey, progress and leak site reports.
- Conducts pitot-type flow tests for meter-checking programs and inspects emergency connections and bypasses.
- Assists in training MWRA community workers in leak detection methods.

- Locates and marks out the location of MWRA mains.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Basic reading, writing, mathematical and oral communication skills as normally attained through a high school education or equivalent: and

(B) Two (2) to four (4) years experience in conducting water leakage surveys and pitot-type (or other) flow tests with a background in water flow measurement and electronics: or

(C) A civil engineering background as normally attained through a two (2) year associates degree program: or

(D) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

(A) Ability to read and interpret record plans and drawings.

(B) Working knowledge of personal computers and related software.

(C) Ability to perform simple mathematical calculations and writing accurate reports.

(D) Knowledge of general pipeline construction.

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

SPECIAL REQUIREMENTS:

A valid Massachusetts Class D Motor Vehicle Operators License.

Water Operations or Water Distribution Grade I License, or ability to obtain within 6 months.

TOOLS AND EQUIPMENT USED:

Motor vehicle, power and hand tools, mobile radio, telephone, and beeper.

PHYSICAL DEMANDS:

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

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

The employee must frequently lift and/or move up to 25 pounds and occasionally lift and/or move more than 100 pounds. Specific vision abilities required by this job include close vision, distance and peripheral vision, depth perception, and the ability to adjust focus.

WORK ENVIRONMENT:

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

The employee regularly works near moving mechanical parts and is occasionally exposed to wet and/or humid conditions and vibration. The employee occasionally works in precarious places and is occasionally exposed to fumes or airborne particles, toxic or caustic chemicals, and risk of electrical shock.

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

January 2013

MWRA
POSITION DESCRIPTION

NEW

POSITION: Safety Technician

PCR#:

DIVISION: Administration

DEPARTMENT: Occupational Health and Safety

BASIC PURPOSE:

Serves as an integral part of the Occupational Health and Safety team promoting a safe and healthful work environment free from recognized hazards that may cause serious injury, physical harm or death. Responds to emergencies to mitigate danger and loss. Inspects and distributes equipment to prevent work-related injuries and illnesses. Documents monthly visual inspections in accordance with Massachusetts law requiring public sector agencies to comply with OSHA standards.

SUPERVISION RECEIVED:

Works under the general supervision of the Safety Program Coordinator or Manager, Safety and Security.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

Emergency Response Team (ERT) or Emergency Services Unit (ESU):

- May volunteer to serve on an emergency response team or equivalent. Responds to reports of mishaps or safety issues when notified (example – oil leaks from vehicles). Participates in pre-scheduled Saturday emergency drills (when available) that center around different scenarios such as boom deployment, chemical spills, or first aid situations.

Inspection:

- Conducts monthly visual check inspections of facility fire extinguishers, AED Devices first aid stations, emergency eyewash stations, and personal protective equipment (ear-

U9, Grade 18

plug) stations. Proper equipment ensures compliance with OSHA standards and limits exposure to corrosive materials, chemicals, or particulates.
- Ensures hand-held gas monitors are fully charged daily and inspected/adjusted on a monthly basis by the calibration lab.

Reports:
- Notifies manager of deficiencies such as leaks, tampering, expired, or otherwise non-operational safety equipment.
- Maintains records of inspection and maintenance on operations safety equipment such as eye wash stations and fire extinguishers and produces reports.
- Maintains and updates the OSHA-required materials safety data sheets (MSDS) in binders located throughout the facility.
- Distributes existing safety procedural guidelines upon request.

Inventory:
- Replenishes and distributes supplies from the safety stock room including fire extinguishers, ear plugs, and first aid supplies (no equipment/supplies for eye wash or AED).
- Identifies and orders needed safety supplies.
- Ensures adequate supply of safety bags (including hard hat and safety glasses) for new hires attending weekly new employee orientation session.

Vendor Management:
- Serve as primary liaison to contract expert safety vendors who perform annual inspection of fire extinguishers (required for OSHA compliance) and AED equipment. Accompanies vendors during annual inspections and initiates work order or contacts vendor during the year if there are issues.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) An Associate degree in a technical or business field; and

(B Knowledge of safety equipment used in an industrial environment as normally acquired through four (4) or more years of relevant experience; or

(C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

(A) Knowledge of all fire and electrical work practices.

(B) Ability to inspect facilities for equipment and initiate appropriate follow-up.

(C) Demonstrated verbal and written communication skills.

(D) Basic knowledge of OSHA coverage and MWRA protocols on safety reporting.

SPECIAL REQUIREMENTS:

Valid Massachusetts Class D Driver's License.

Completion of 40-hour OSHA Hazardous Waste Site Worker Certification.

Annual 8 hour OSHA Refresher course.

TOOLS AND EQUIPMENT USED:

Hand tools, mobile radio, telephone, beeper, 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 the job. Reasonable accommodation may be made to enable individuals with disabilities to perform the essential functions.

While performing the essential functions 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 regularly is required to stand or talk or hear. The employee is occasionally required to walk, sit, climb or balance, stoop, kneel, crouch, or crawl.

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

WORK ENVIRONMENT:

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

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

The noise level in the work environment is moderately quiet.

March 2019

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Appointment of Assistant Contracts Manager, Administration Division

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COMMITTEE: Personnel & Compensation

X VOTE
____ INFORMATION

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

Michele S. Gillen
Director of Administration

RECOMMENDATION:

That the Board approve the appointment of Ms. Rebecca Tearte to the position of Assistant Contracts Manager, Administration Division (Unit 6, Grade 12) at an annual salary of $103,157.30 commencing on a date to be determined by the Executive Director.

DISCUSSION:

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

The Assistant Contracts Manager manages procurement of construction, non-professional and professional services contracts, from initial submission to closeout. Responsibilities include review and drafting of RFQs, RFPs, bid documents, amendments and related documents; contract negotiation; assisting the Deputy Contract Manager with development of contract documents and procedures; and interpreting and monitoring compliance with statutes, regulations and MWRA policies and procedures.

Selection Process

This position was posted internally and externally. Five internal and thirty-four external candidates applied. Two internal and five external qualified candidates were referred for an interview. The Director of Procurement, MBE/WBE Program Manager and Deputy Chief Engineer interviewed the candidates.

The interview team determined that Ms. Tearte was qualified to fill this position based on her experience, abilities, knowledge, and education.

Ms. Tearte has more than 30 years of experience in administering and managing services for major construction projects with the Authority. She currently serves as the Senior Contract

Administrator for the Deer Island Engineering Services Department. In that role she assists in the preparation of specifications and contract provisions while also providing assistance in the preparation, review and processing of contract amendments and change orders. Ms. Tearte is also responsible for ensuring the timely review and processing of construction, design, non-professional service, and purchasing contract submittals to the Procurement Department.

Ms. Tearte began her career with the Authority as a Contract Coordinator in the Procurement Department. In that role she prepared and compiled professional service proposals and construction bids for review by Assistant Contract Managers. Ms. Tearte was also responsible for preparing and coordinating all pre-advertising and pre-bid phases of Authority contracts. Ms. Tearte is well respected by MWRA management and her peers Authority wide.

Ms. Tearte holds a BA in Economics from Regis College and a Masters of Management from Cambridge College.

BUDGET/FISCAL IMPACT:

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

ATTACHMENTS:

Rebecca Tearte Resume
Position Description
Procurement Department Organization Chart

REBECCA G. TEARTE

PROFESSIONAL SUMMARY

More than 30 years of experience in administering and managing services for major construction projects with expertise in Contract Management, Administrative Management and Tracking Analysis. Effective at setting priorities to achieve immediate and long term goals, while meeting operational deadlines.

SKILLS

- CONTRACT ADMINISTRATION
- PROBLEM SOLVING
- PROJECT MANAGEMENT
- PROCUREMENT
- IMPROVE DOCUMENT SPECIFICATIONS
- DATABASE DEVELOPMENT

WORK EXPERIENCE

MASSACHUSETTS WATER RESOURCES AUTHORITY **1988 – present**

Engineering Services Department, Deer Island Treatment Plant, Winthrop, MA (September 2014 - Present)
Senior Contract Administrator

- Develop and institute policies and procedures for procurement, tracking, administration and management of professional, design and construction contracts.
- Assist in preparation and updates of boilerplate specifications and contract provisions.
- Assist in development of program management/administration systems. Develop and maintain data systems for contract procurement logs, contract reporting, accounts payable and progress reporting.
- Provide assistance in negotiation preparation of contract documents for Department's engineering and construction managers.
- Provide assistance in maintenance and reporting of project schedules from project management systems.
- Coordinates administrative projects, as directed by the Manager of Engineering Services, DITP.
- Provide assistance in preparation, review and processing of contract amendments and change order; participates in closeout and final payment of contracts; and assists in the defense of contract claims and dispute resolution.
- Utilize contract administration data and issue monthly financial reports; assist in capital program budgeting activities, various reporting and budget updates. Prepare and compile Delegated Authority Reports on a monthly basis.
- Process required Department of Environmental Protection (DEP) paperwork for State Revolving Fund (SRF) projects on yearly basis.
- Work with DITP and Purchasing Department staff to furnish New Engineering Offices and Workstations.
- Schedule interviews and process Recommendation to Hire/Promote Paperwork for Manager, Engineering Services, DITP.

Engineering Services Department, Deer Island Treatment Plant, Winthrop, MA (January 1994 - September 2014)
Administrative Manager

- Assist Project Managers in managing all aspects of construction, non-professional and professional services and purchasing contracts from initial request for service through execution.
- Reviews contract processes and documents for format and substance as well as compliance with Authority standards and applicable laws relevant to policies and procedures.
- Designed, implemented and updated contract management database using Access.
- Troubleshoot contract procedure obstacles and resolve problems to accomplish procurement objectives.
- Ensure timely review and processing of construction, design, non-professional service, and purchasing contract submittals to Procurement.

REBECCA G. TEARTE

WORK EXPERIENCE

Procurement Department, Charlestown Navy Yard, Charlestown, MA (May 1988 - January 1994)
Contract Coordinator

- Prepared and coordinated all pre-advertising and pre-bid phases on all Authority contracts.
- Coordinated dates of all bidding events on calendar database and attend all bid openings.
- Assisted Legal Department with request for information on construction, professional and non-professional service contracts.
- Prepared and compiled professional service proposals and construction bids for review by Assistant Contract Managers.
- Supervised secretarial staff on as-needed basis.

EDUCATION

- Bunker Hill Community College, Computer Network Certificate
- Cambridge College, Masters of Management
- Regis College, Bachelor of Arts, Economics

WORKSHOPS – THE LABOR GUILD SCHOOL OF LABOR MANAGEMENT RELATIONS

- Collective Bargaining Negotiations Workshop; Advanced Communication Skills to Resolve Conflict Fall/Spring - 2018
- Media, Messaging and the Labor Movement; Next Step Stewards; Organizing around the Grievance Process - Fall/Spring - 2017
- Union Administration and The Law – Fall 2016; The Stewards Job – Fall 2013

ACCOMPLISHMENTS

- Elected Trustee Board Member - The Washington Union, South End – September 2018
- Elected Trustee of United Steelworkers Union - Local 9360, April 2015 – May 2018
- The Labor Guild of Boston, United Steelworkers Local 9360 – Union Stewart Certification - November 2013
- Appointed Foreperson on Civil Case at Suffolk County Superior Court, Boston, MA - July 2013
- Grade 4 Wastewater License – November 1994
- Team Leader in Thompson Island Outward Bound Management Training Program – MWRA – 1991

MWRA TRAINING

- Supervisory Development Program, October – December 2016
- Basic Maximo Training – Phase I – July 2016
- Interviewing Skills – June 2016
- Lawson SSCM – View of Portal System – February 2015
- Writing Specifications for Procurement of Goods and Services – November 2014

MWRA
POSITION DESCRIPTION

POSITION: Assistant Contract Manager

PCR#: **8810028, 8810035, 8810039, 8810044**

DIVISION: Administration

DEPARTMENT: Procurement

BASIC PURPOSE:

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

SUPERVISION RECEIVED:

Works under the general supervision of the Deputy Contract Manager.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Contributes to the development and implementation of Authority-wide policies and procedures for all elements of the contract function.

- Reviews contract processes and documents for format and substance as well as compliance with Authority standards and applicable laws, especially MGL Chapters 149 and 30.

- Provides guidance to the Law Division, senior authority staff and outside consultants on contract matters as required; represents Authority before Commonwealth Department of Labor and Industries as appropriate.

- Reviews, drafts and helps negotiate contract terms and conditions; prepares and updates standard forms and other contract provisions.

- Assists the Division in negotiating and preparing contracts, drafts and processes amendments and resolves contract disputes.

- Contributes to the development and implementation of policies and systems for maintenance of contract processes, contract logs, advertising, bidding and contract awards in compliance with Authority standards and applicable law.

- Reviews construction and non-professional services bids, contract amendments, change orders, final payment and closeout.

- Reviews bids and consultant proposals, emphasizing compensation analysis; presents cost control recommendations to Selection Committee.

- Serves as voting member on Selection Committee

- Serves on Consultant Activity Review (CAR) Committee.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) A four- (4) year college program in business administration or a related field. Experience in a governmental agency required; and

(B) Understanding of contract administration as acquired through four (4) to seven (7) years contract management experience; or

(C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Knowledge of and experience with MGL Chapters 149 and 30 or with design and other professional service contracts preferred.

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

SPECIAL REQUIREMENTS:

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

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

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

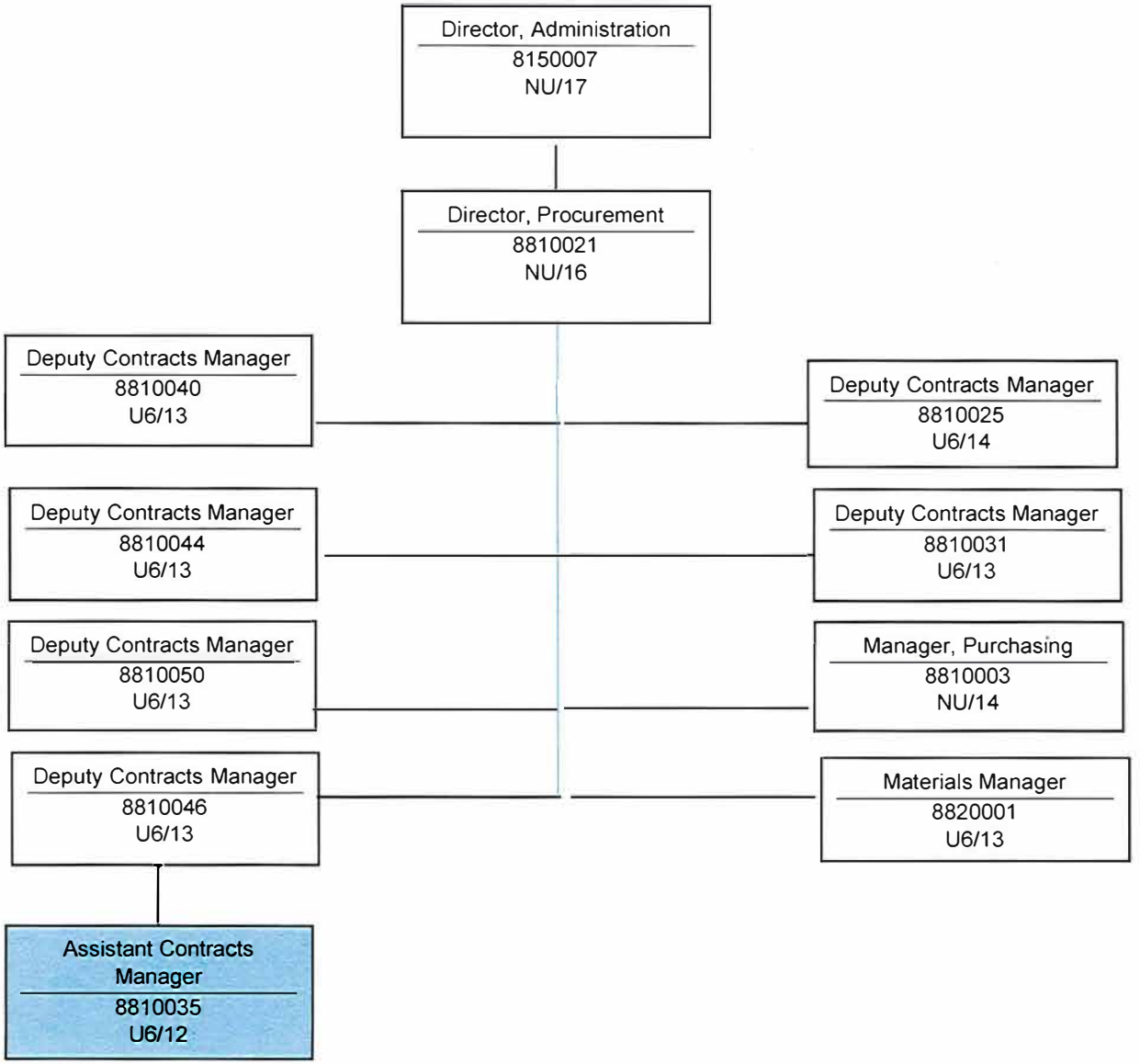
WORK ENVIRONMENT:

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

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

July 2009

Administration
Procurement
March 2019



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Appointment of Manager, Employment

COMMITTEE: Personnel & Compensation

____ INFORMATION
_X_ VOTE

Andrea Murphy, Director, Human Resources
Preparer/Title

Michele S. Gillen
Director, Administration

RECOMMENDATION:

To approve the appointment of Ms. Susan Carter to the position of Manager, Employment, (Non-Union, Grade 14) in the Administration Division, at the recommended annual salary of $117,300.00, commencing on a date to be determined by the Executive Director.

DISCUSSION:

The position of Manager, Employment became vacant upon the promotion of the incumbent. The position reports to the Director, Human Resources and is responsible for managing all recruitment and employment programs and activities and administering adequate employment, placement and transfer policies and procedures to meet Authority personnel requirements.

Selection Process

The position of Manager, Employment was posted internally and two candidates applied for this position. One candidate was appointed to another position. The remaining candidate, Ms. Carter was determined to be qualified and was referred for an interview. The Director, Human Resources and the Director, Administration conducted the interview. Upon completion of the interview, Ms. Carter was recommended for the position based on her qualifications and experience.

Ms. Carter has been working in the Employment Unit for the last 13 years. Ms. Carter has redeveloped the new hire orientation program and conducts orientation for newly hired employees. She has been an integral contributing member of the implementation team for Applicant Pro, the MWRA's new on-line application system. Ms. Carter has also demonstrated an exceptional ability to work with managers, supervisors, employees and applicants on all internal promotions and new hires and to assure that critical positions are filled expeditiously with an internal promotion or external hire and that the cascading effect of promotions is managed efficiently. Prior to joining the MWRA, she worked in the Governor's office for 15 years and was responsible for various HR functions.

Ms. Carter is currently the Acting Employment Manager. In that capacity, she has effectively overseen all facets of the employment process including hiring qualified candidates for vacant positions. Over the past few years, there has been a significant increase in attrition largely due to retirements, and Ms. Carter has successfully managed the replacement of critical operational positions including the promotion of many internal candidates, which is a key component of MWRA's succession planning. She has the respect of MWRA management and staff.

BUDGET/FISCAL IMPACT:

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

ATTACHMENTS:
Resume of Susan Carter
Position Description
Organizational Chart

SUSAN A. CARTER

EXPERIENCE:

2018 - Present **Acting Manager, Employment**
2016 - 2018 **Assistant Manager, Employment**
2006 - 2016 **Human Resources Specialist**
Massachusetts Water Resources Authority, Charlestown, Massachusetts

- Manage all recruitment and employment programs, policies, and procedures for hiring qualified candidates ensuring compliance with Affirmative Action goals.
- Resolve staffing concerns with senior management and provide guidance on succession planning
- Manage employee orientation program.
- Serve as a member of management's team for collective bargaining negotiations.
- Managed recruitment, interview and selection processes, working closely with hiring managers and executive management to ensure compliance with MWRA policies and procedures and hiring goals.
- Identified and developed new recruitment sources, participated in recruiting events, conducted pre-screening activities, participated in interview panels and selection processes and performed reference and background checks.
- Participated as a team member in the development and implementation of a web-based employment application system.

1991 - 2006 **Deputy Director of Administration**
Office of the Governor, Boston, Massachusetts

- Provided orientation to new employees, processed employment paperwork, and administered benefits.
- Managed accounts payable, office supplies and physical property inventory. Supervised three interns each summer.

1987 - 1990 **Office Manager**
P.F. O'Connor, Inc., Revere, Massachusetts (a building supply company)

- Managed main office, processed accounts payable and receivable, coordinated banking activities, and prepared weekly payroll.
- Supervised 39 employees and managed the distribution of work.

EDUCATION:

Burdett School of Business, Boston, Massachusetts
Chelsea High School, Chelsea, Massachusetts

MWRA
POSITION DESCRIPTION

POSITION: Employment Manager

DIVISION: Administration & Finance

DEPARTMENT: Human Resources

BASIC PURPOSE:

Manages all recruitment and employment programs and activities. Establishes and administers adequate employment, placement and transfer policies and procedures to meet Authority personnel requirements.

SUPERVISION RECEIVED:

Works under the general supervision of the Deputy Director of Human Resources.

SUPERVISION EXERCISED:

Exercises close supervision of assigned professional and clerical staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Manages and implements the Authority's procedures for recruitment and hiring and ensures compliance with Affirmative Action goals.
- Assess impact of attrition on staffing and provide guidance to MWRA senior managers on succession and replacement planning.
- Conducts applicant screening to determine qualifications for MWRA positions. Refers qualified applicants to hiring managers.
- Develops and implements employment automated systems including applicant tracking systems. Works closely with other Human Resources Managers to improve processes.
- Develops and implements new recruitment sources including social media sites and supervises preparation of brochures, pamphlets, and other marketing materials describing Authority employment opportunities.
- Coordinates all employment issues with Authority divisions and outside recruitment agencies.

- Establishes active relationship with employment sources such as schools and colleges.

- Manages all required pre-employment background check procedures to include obtaining applicant consent/authorization forms and pre-employment physicals; ensuing the confidentiality of information and reports.

- Develops and implements programs designed to increase applicant pools.

- Trains managers in the employment process (forms, procedures, selections criteria, interviewing).

- Ensures accuracy of Authority job postings.

- Develops and maintains relationships with community, school and professional organizations and other referral sources.

- Drafts regular and special reports on employment matters including costs, numbers hired, attrition and promotions.

- Responds to requests and inquiries relative to employment from internal candidates, managers and applicants.

- Serves as a member of management's negotiating team for collective bargaining negotiations.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) A four (4) year college program in human resources, industrial relations, public administration or a related field; and

(B) General understanding of human resources and hiring practices and state and federal laws and regulations governing employment as acquired through seven (7) to nine (9) years experience in employment and human resource administration of which a minimum of three (3) years must be in a supervisory capacity; or

(C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Ability to plan, organize, direct, train and assign duties to subordinates.

(B) Understanding and knowledge of federal and state employment laws, practices and policies.

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

SPECIAL REQUIREMENTS:

None.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

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

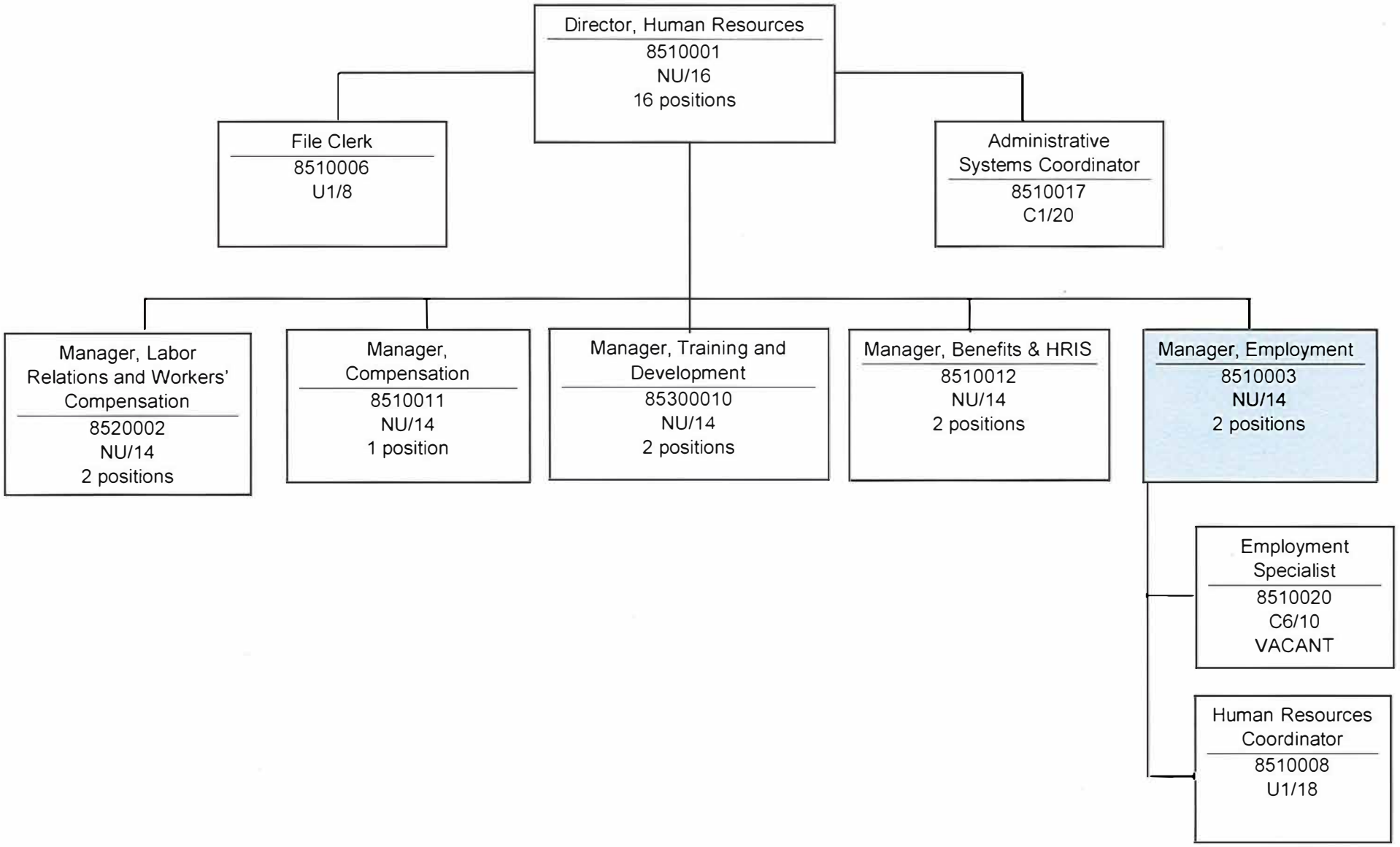
WORK ENVIRONMENT:

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

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

November 2014

Administration
Human Resources
March 2019



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Appointment of Senior Program Manager
Engineering & Construction Department

COMMITTEE: Personnel & Compensation

___ INFORMATION
_X_ VOTE

Andrea Murphy, Director, Human Resources
John Colbert, P.E., Chief Engineer
Preparer/Title

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

RECOMMENDATION:

To approve the appointment of Ms. Ester Lwebuga to the position of Senior Program Manager (Unit 9/Grade 30) in the Engineering & Construction Department, at an annual salary of $130,406.15, commencing on a date to be determined by the Executive Director.

DISCUSSION:

The position of Senior Program Manager in the Engineering & Construction Department became vacant in December 2018 as a result of the promotion of the incumbent. The Senior Program Manager position works under the general supervision of the Assistant Director, Engineering and manages several in-house engineering staff. This position manages all projects in assigned programs from conceptual planning through construction contract award. The Senior Program Manager manages assigned programs including conformance to standards and procedures, staffing assignments, project scheduling and prioritization, and work product quality. The position oversees the work of professional engineering consultants under contract to the MWRA including quality of outputs, budget and schedule compliance and conformance to contract terms. The position is also responsible for preparing annual and supplementary requests for projects in the Capital Improvement Program.

Selection Process

This Senior Program Manager position was posted internally and externally. A total of 12 candidates applied for the position. Five internal candidates were determined to be qualified and were referred for an interview. The Chief Engineer; Assistant Director, Engineering, and the Special Assistant for Affirmative Action conducted the interviews. Upon completion of the interviews, Ms. Ester Lwebuga was determined to be the best candidate based on her experience, knowledge, skills and education.

Ms. Lwebuga has 19 years of engineering experience at the MWRA. She worked her first 9 years in the Field Operations Department's Operations Engineering Program progressing from an Internship to a Junior Engineer, to a Senior Engineer, and Acting Project Manager. During that period, she gained in-depth knowledge of MWRA's water system operations, including developing and/or coordinating the execution of water pipeline maintenance operations plans, distribution system shutdowns, and facility startup activities. Since then, she has worked for 10 years in the Engineering & Construction Department, starting as a Project Manager and advancing to her current position of Program Manager. She has extensive experience working on Dam inspections; Emergency Action Plans; monitoring the distribution system for potential service impacts; Cathodic Protection System testing, troubleshooting, and design replacements; water distribution rehabilitation, replacement and new pipelines; and engineering contract management. She is able to manage multiple assignments from routine to unfamiliar. She has taken the initiative to revive elapsed programs such as the Metro Operations Dams Inspections and system-wide Cathodic Protection. During her career at the MWRA, Ms. Lwebuga has earned the respect of her colleagues and supervisors.

Ms. Lwebuga has a Bachelor of Science in Civil Engineering from Calvin College and a Master of Science in Civil Engineering from the University of Massachusetts - Lowell. She is a registered Professional Engineer in Massachusetts and is a certified Grade 4 Water Distribution System Operator-in-Training.

BUDGET/FISCAL IMPACT:

There are sufficient funds in the Operations Division's FY19 Current Expense Budget to fund this position.

ATTACHMENTS:

Resume of Ester Lwebuga
Position Description
Engineering and Construction Department Organization Chart

ESTER N. LWEBUGA, P.E.

OBJECTIVE To obtain a Senior Program Manager position in the Operations Division.

EXPERIENCE

MASSACHUSETTS WATER RESOURCES AUTHORITY

Program Manager, Engineering and Construction Department — **November 2014 – Current**
Project Manager, Engineering and Construction Department — **June 2009 – November 2014**

Manage engineering services during design and construction including:

- Overseeing professional engineering consultant contracts including the development of scope of services, plans and specifications, cost estimates, work schedules, negotiation and preparation of contract award recommendations, and ensuring project compliance with budgets, schedules and terms.
- Coordinating projects with other Authority departments, host communities and permitting agencies to ensure designs comply with the Authority policies and procedures, regulatory requirements and applicable engineering standards.
- Reviewing of projects budgets and schedules for compliance with Capital Improvement Program goals.
- Attending Construction progress meetings and performing site visits to observe work progress; participating in discussions to resolve construction issues including change orders, claims and cost proposal reviews.
- Supervising subordinate engineering staff in reviewing record drawings; collecting, compiling and reporting field data; performing dams inspections, and utilizing the GIS system to support MWRA Engineering and Operations projects.

Projects Include:

- Contract 6385 ($3.5M): Cleaning and cement mortar lining of approximately 4,500 feet of a 36-inch diameter cast iron water main, 11,000 feet of 20-inch cast iron water mains; and 500 feet of 20-inch. The work also includes installing by open-cut 4,200 feet of 36-inch ductile iron water main, 6,200 feet of 24-inch ductile iron water main, and valves and appurtenances and replacement of the check valve assembly at one of the revenue meters to City of Boston.
- *Contract 6540 Design ($2.9M):* Replacement of approximately 4,500 linear feet of a 16 inch with a 24-inch water main and installation of approximately 1,250 linear feet of a 36 inch redundant water suction line connecting from a 60-inch lock-bar steel main to a 36-inch reinforced concrete main (estimated construction cost $11.2M); rehabilitation of an 85-year old 30-inch riveted steel main by sliplining with HDPE pipe (estimated construction cost $2.65M); and installation of approximately 8,800 linear feet of a new 36-inch main (estimated construction cost $12M).
- *Contract 6546, Section 28 Rehabilitation:* Cleaning and cement mortar lining of approximately 6,250 feet of 20-inch cast iron pipe and replacement of a connection to a 56-inch diameter lock-bar steel transmission main.
- *Technical Assistance Task Order Contracts*:
  - Belden Bly Bridge Water Main Relocation Feasibility Study: Relocation of a 20-inch water main using trenchless technology. The study included evaluating river crossing methodology, alignment and work limits that would provide the shortest permitting duration, easement acquisition process and construction schedule, while meeting design and schedule constraints required by the MassDOT for replacement of the bridge structure.
  - Shaft E and Shaft L Cathodic Protection Troubleshooting, replacement design and engineering services during construction
  - Shaft 5A/5 Cathodic Protection replacement design and engineering services during construction.
  - Subsurface Utility Engineering Investigations – Quality Level B: To determine the approximate horizontal location of existing utilities and their major laterals to existing buildings at specific locations within the project limits.

Operations Engineering, Field Operations Department
Acting Project Manager **March 2006 – August 2006**
Senior Engineer **April 2005 – June 2009**
Junior Civil Engineer **May 2000 – April 2005**

Provided engineering support for Field Operations department including:

- Acting as liaison on Engineering and Construction projects. Reviewing designs and construction submittals.
- Coordinating Field operations support actions and facilities start-up activities including valve operations, pipeline leakage and pressure testing and disinfection. Coordinating distribution system shutdowns with communities to minimize impact to water service.
- Developing and coordinating review and execution of Operations plans and constraints. Acting as Responsible Person for execution of Plans including monitoring of the distribution system for potential service impacts.
- Preparing Emergency Action Plans and Contingency Plans for work performed on critical parts of the distribution system.
- Overseeing Metro-Operations Dams Inspection program including review of inspection reports, performing routine dam and reservoir visual inspections, developing scope of work for Dams maintenance, and ensuring execution of recommended repairs and maintenance.

Engineering Intern **July 1999 – April 2000**

- Valve Replacement Design: Researched record plans, detail records, and field books to support the valve replacement program. Prepared designs for several blow-off valves replacement sites in the metropolitan area. Coordinated designs with local utilities. Analyzed metering data for Water Meter sizing.
- Performed administrative duties including writing correspondences, revising design reports, retrieving record plans to support ongoing design projects, publishing reports and preparing visual aids for presentations.

EDUCATION

M.S. Civil Engineering, Environmental, University of Massachusetts - Lowell, MA, May 2005

B.S. in Engineering, Calvin College, Grand Rapids, MI, May 1995

LICENSES AND CERTIFICATES

- Registered Professional Civil Engineer – Massachusetts
- Envision Sustainability Professional
- Grade IV Distribution Operator in Training
- 10 Hour OSHA Training
- 40 Hour Hazardous Waste Site Worker
- First Aid/CPR/AED

PROFESSIONAL MEMBERSHIPS

- American Society for Civil Engineers
- Boston Society for Civil Engineers

COMPUTER EXPERIENCE

Microsoft Windows, GIS ArcMAP

VOLUNTEER

EverybodyWINS /Read-to-a-Child, 09/06 – 06/07, 09/07 – 06/08; 09/12 – 06/13; 09/13 – present

MathCounts, 09/08 – 06/09; 09/09 – 06/10.

Global Children Ministry, 2000 – present

MWRA
POSITION DESCRIPTION

POSITION: Senior Program Manager

PCR#: **5525002, 55250114**

DIVISION: Operations

DEPARTMENT: Engineering & Construction

BASIC PURPOSE:

Manages all projects in assigned Programs from conceptual planning through construction contract award.

SUPERVISION RECEIVED:

Works under the general supervision of the Assistant Director, Engineering.

SUPERVISION EXERCISED:

Exercises close supervision of the internal staff as necessary, including performance reviews, to manage engineering consultant activities.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Manages assigned Programs including conformance to standards and procedures, staffing assignments, project scheduling and prioritization, and work product quality.
- Oversees the work of professional engineering consultants under contract to the MWRA including quality of outputs, budget and schedule compliance and conformance to contract terms.
- Prepares project specifications, contract documents, requests for proposals and necessary documents to secure grants and permits from various federal and state agencies.
- Supervises professional engineering work of substantial difficulty and importance requiring the application of professional engineering principles and the exercise of independent engineering judgement.
- Coordinates projects with communities, government agencies and other MWRA departments.

- Provides technical assistance to other staff in the development of program plans and designs for projects related to program management.

- Prepares annual and supplementary budget requests for the program.

- Participates in consultant selection procedures and contract negotiations.

- Addresses community and professional organizations on agency programs and policies, prepares reports and correspondence and maintains liaison with representatives of other agencies.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Knowledge of engineering principles and practices as normally attained through a four (4) year college program in civil engineering or related field; and

(B) Understanding of issues related to engineering design as acquired through eight (8) to ten (10) years of experience in water and/or wastewater field, of which a minimum of four (4) years is in a supervisory capacity; or

(C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Knowledge of water and/or wastewater unit operations design and operation, process control theory, practices and principle and computer applications.

(B) Demonstrated written and oral communication skills.

SPECIAL REQUIREMENTS:

Massachusetts Registered Professional Engineer preferred

A valid Class D Massachusetts Motor Vehicle Operators License.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

While performing the duties of this job, the employee is regularly required to use hands to finger, handle, feel or operate objects, 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 stand, walk, climb or balance, stoop, kneel, crouch, or crawl, taste or smell.

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

WORK ENVIRONMENT:

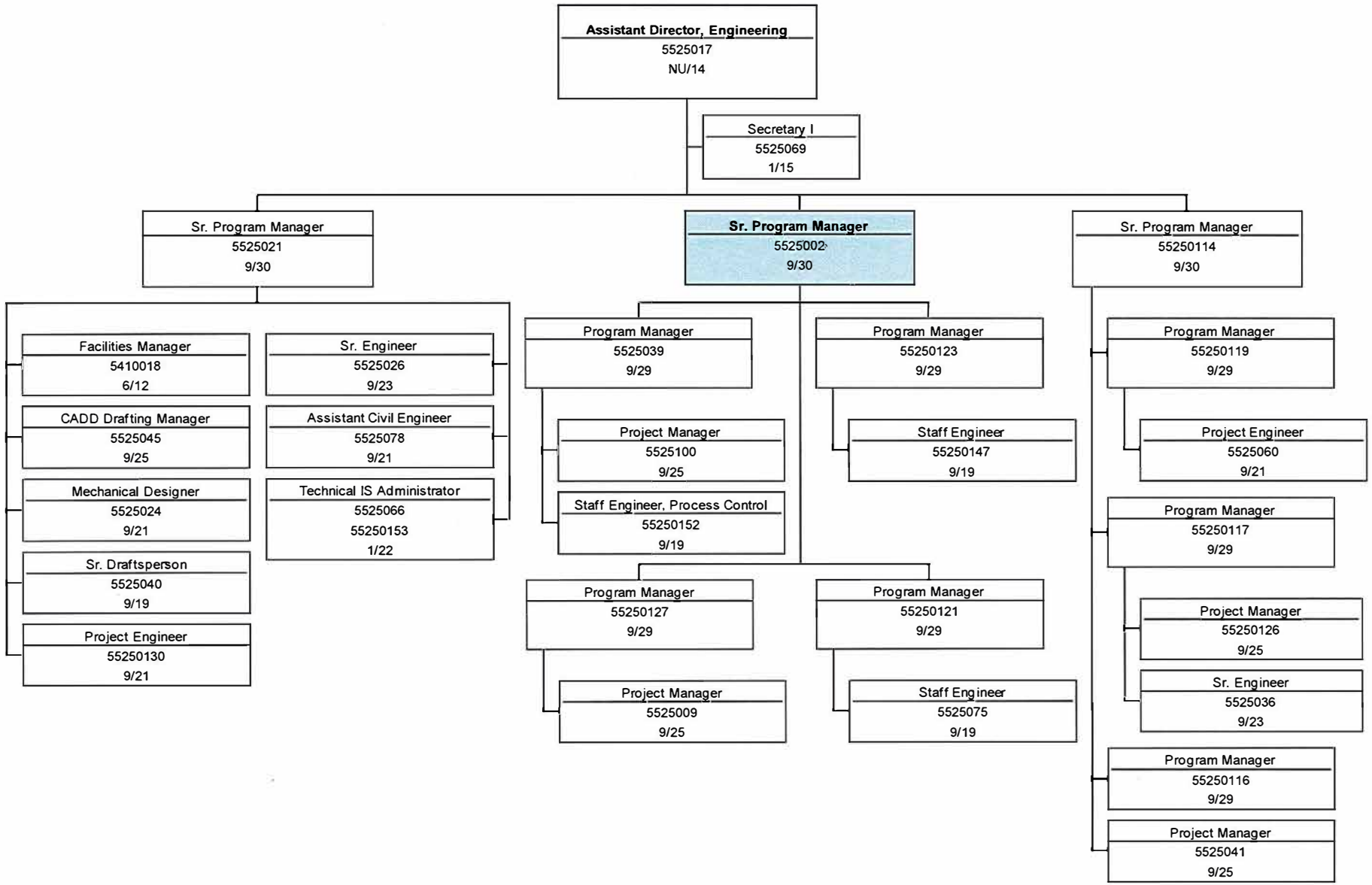
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

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

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

June 2013

Engineering & Construction
Water/Wastewater Engineering
March 2019



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Appointment of Program Manager, Data Management Environmental Quality

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COMMITTEE: Personnel & Compensation

___ INFORMATION
_X_ VOTE

Betsy Reilley, Ph.D., Director, ENQUAL
Andrea Murphy, Director, Human Resources
Carolyn Fiore, Deputy Chief Operating Officer
Preparer/Title

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

RECOMMENDATION:

To approve the appointment of Romesh Stanislaus, Ph.D., to the position of Program Manager, Data Management (Unit 9, Grade 29) in the Environmental Quality Department, at an annual salary of $112,433.12 commencing on a date to be determined by the Executive Director.

DISCUSSION:

The position of Program Manager of Data Management became vacant in January 2019 upon the departure of the previous incumbent. Organizationally, this position reports to the Senior Program Manager, Water Quality Assurance. The Data Management unit is part of the Environmental Quality Department and is located in Southborough. The group is responsible for managing data and generating reports for Massachusetts Department of Environmental Protection Drinking Water Compliance and other water quality reports, responding to data requests, assisting in data analysis, and ensuring data is accurate and of high integrity. The Program Manager, Data Management oversees the development of database systems and management of water quality data, develops standards for the management and logging of data, ensures robust data systems, performs advanced querying and analysis of water quality data to assist in understanding trends, and supports data analyses of others in the Environmental Quality Department. The position also develops tools to improve data visualization and serves as an on-call manager during water quality emergencies.

Selection Process

This Program Manager position was posted internally and externally. A total of 17 candidates applied for the position; three were internal applicants. Four external candidates were determined to be qualified and were referred for an interview. The Director of Environmental Quality; the Senior Program Manager, Water Quality Assurance; and the Manager, Operations Support conducted the interviews. Upon completion of the interviews, Romesh Stanislaus, Ph.D., was determined to be the best candidate based on his experience, knowledge, skills and education.

Dr. Stanislaus has 16 years of experience in developing and maintaining database systems. He has a very strong data analytics and bioinformatics background. Dr. Stanislaus has worked with complex database systems, integrating a wide range of data sets, and has developed these to improve data driven decision making. Dr. Stanislaus has experience in many different database platforms including Oracle, a knowledge of querying tools including SQL, and strong experience in a number of programming languages applicable to MWRA data management needs including R, python and MATLAB. Dr. Stanislaus has demonstrated leadership in the planning and development of databases, creation of reports, developing automated functions, creating user interfaces, and coordinating with peers to meet project goals. He has extensive experience in leading projects and project teams to design, implement and maintain complex data systems. Dr. Stanislaus has analyzed data using PCA, multivariate, and other statistical analyses. His extensive knowledge of data quality, data management, and his data analytics experience make him the best qualified candidate.

Dr. Stanislaus has a Bachelor of Arts in Biology from Lawrence University, WI, a Bachelor of Arts in Computer Science from College of Charleston, SC, and a Ph.D. in Microbiology and Immunology from Medical University of South Carolina, SC.

BUDGET/FISCAL IMPACT:

There are sufficient funds for this position in the FY19 expense budget.

ATTACHMENTS:

Resume of Romesh Stanislaus, Ph.D.
Position Description
Organization Chart

Romesh Stanislaus, PhD.

Professional Experience

IFS Consulting services, Cambridge, MA, 2018 – present
Consultant, Informatics/Analytics
Manage and deliver analytic projects per client requirements

- Application informatics and statistical methods to analyze and process clinical data using R/Python libraries
- Development of relational databases
- ETL disparate data from public databases for further statistical analysis
- Establish data quality assurance procedures before analysis
- Generate hypothesis based on data analyses, and recommend a way forward based on the results

Sanofi Pasteur, Cambridge, MA, 2010 – 2017
Scientist, Informatics/Bioinformatics
Manage and deliver analytic results to clinical development teams

- Project lead for developing and implementing standard methodology for analyzing high dimensional data to help answer strategic question in the development process for the organization
    - Extensive experience in using informatics tools and statistical methods to integrate diverse data sets and analyze clinical data
    - Extensive experience writing software to integrate data from instruments as well as creating data structures to standardize data exchange
    - Experience using univariate and multivariate statistical methods (e.g. ANOVA, logistic regression, PCA, factor analysis) for analyses of research data, and, interpretation of the analysis results
    - Experience installing, using and maintaining pipeline software such as KNIME and Spotfire
    - Experience using statistical packages (R/Bioconductor) and machine learning libraries (Scikit-learn/NumPy), as well data manipulation packages (Pandas)
- Design, develop and implement Text Mining/Natural Language Processing (NLP) techniques and Machine Learning (ML) to answer business related questions
    - Experience using machine learning libraries Scikit-learn/NumPy, to predict clinical outcomes
    - Experience using HPC cluster and cloud services (Amazon, Google), as well as Tensorflow/Keras to train and predict clinical outcomes

Scientific Information Systems/ Business System Analyst

- Responsible for developing IS requirements and uses cases for informatic projects
    - Design and implemented a management system for storing clinical study data and results – Extensive experience in designing, implementing and querying relational databases (PostgreSQL, SQLlite, Oracle, MySQL). Experience with ETL for database consumption and ELT for analytic software consumption.
    - Experience using Dashboards to visualizing clinical data and for interrogating the clinical databases
- Scientific lead/Scientific owner informatic technology projects – Provide leadership and expert advice on informatics projects
    - Define, Identify and Evaluate new technology –
    - Interact with vendors and recommend on bringing new technologies in-house
    - Experience in conducting due diligence reviews of external opportunities
- Design and implement relational as well as semantic databases to store business data to manage and access and disseminate to other business users

Manage relationships with internal & external collaborators

- Responsible for managing internal and external collaborations for vaccine discovery projects
- Manage relationships, scope of work and expectations with consultants/contractors/reports

MD Anderson Cancer Center, University of Texas, Houston, TX, 2006 – 2010
Instructor, Department of Bioinformatics and Computational Biology, Division of Quantitative Sciences
Provide analysis support for oncology research projects

- Design, develop and implement informatic and statistical methods to analyze and process clinical cancer data
- Design and develop relation databases (PostgreSQL) for warehousing cancer clinical data

Management and leadership experience in Data Standards and informatics tool development

- Develop computational tools for the analysis and prediction of premature birth outcomes
- Develop tools to store, manage, integrate and disseminate proteomic data (2-D gel electrophoresis and, Reverse phase protein arrays) using ontologies and semantic web technologies

Collaboration with cross-functional teams

- Interact with multidisciplinary teams across different functional units within the institute matrix to provide key bioinformatics support by integrating data collected at the laboratory level and investigating pathways and networks to expedite move to the next level of discovery

Medical University of South Carolina, Charleston, SC, 2002 – 2006
Post-Doctoral Research Fellow – Bioinformatics/Biostatistics, Department of Biostatistics, Bioinformatics, and Epidemiology
Provide bioinformatics support to research teams

- Utilized statistical and informatics approaches to study the regulation of gene expression by different drug and drug combinations in acute experimental autoimmune encephalomyelitis
- Developed analysis pipelines for 2-D gel electrophoresis and array based reverse phase protein arrays

Leadership experience in managing teams in Data Standards and informatics support

- Led effort for the acceptance of the published XML based meta-data schema standards for 2-D gel electrophoresis and reverse phase protein arrays (see article in BioInform 8(12):3 2004)

Medical University of South Carolina, Charleston, SC, 1997 – 2002
Doctoral Trainee – Immunology, Department of Microbiology & Immunology

Education
Microbiology and Immunology, PhD. Medical University of South Carolina, SC
Computer Science, BA, College of Charleston, SC
Biology, BA, (*Cum Laude*), Lawrence University, WI
Coursework in machine learning & AI – Udacity

Skills:

- Programming: Python, R, SAS, git, PHP, MATLAB
- Ontology: IMGT-Ontology, Vaccine Ontology, Disease Ontology, NCI Thesaurus etc.,
- Business intelligence: Talend, Spotfire, Tableau, KNIME
- Databases: PostgreSQL, Oracle, MongoDB
- Database query languages: SQL
- Database administration (PostgreSQL)
- Linux system administration
- Extensive working experience in HPC environments, AWS/S3

MWRA
POSITION DESCRIPTION

POSITION: Program Manager, Data Management

PCR#:

DIVISION: Operations

DEPARTMENT: Environmental Quality, Water

BASIC PURPOSE:

Manages the overall activities of the Data Management group relative to quality assurance and quality control of complex water quality monitoring data, database management, and compliance-required reporting. Develops a comprehensive master plan for data storage and management and report automation, utilizing essential Quality Assurance/Quality Control (QA/QC) and robust back-up methodologies.

SUPERVISION RECEIVED:

Works under the general direction of the Senior Program Manager, Water Quality.

SUPERVISION EXERCISED:

Directs the work of scientific data management staff. Exercises close supervision of subordinate project managers and assigned data management staff. Provides technical assistance to the overall EnQual-Water group.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Supervises and manages staff, including assignment of projects, evaluation of performance, and staff development planning to ensure that the compliance-required data are complete, accurate and accessible. Provides technical and administrative assistance to staff in the development and management of projects.

- Supervises professional multi-discipline scientific and data management work of substantial difficulty and importance, requiring application of scientific principles and the exercise of independent professional judgment.

- Establishes and oversees data quality control and quality assurance procedures, and maintains records of QA/QC activities. Ensures accuracy and integrity of data. Documents data anomalies or water quality problems.

- Oversees the development of algorithms for calculation of compliance limits, and the procedure for determining when MWRA exceeds those thresholds within the time

required by the Massachusetts Department of Environmental Protection (DEP) Drinking Water Regulations.

- Provides leadership and planning to develop and implement a master plan for integrating a large amount of complex data from various sources and data platforms into a unified database that can efficiently produce accurate, informative reports of key water quality information in a timely manner to help improve the operations of the water treatment process and meet regulatory needs.

- Oversees the preparation and distribution of the Weekly Water Quality Report, monthly Water Quality Update, monthly DEP Compliance Report, monthly Yellow Notebook, Quarterly Orange Notebook, community low chlorine residual reports, and Annual Water Quality Report also known as the Consumer Confidence Report (CCR).

- Oversees and coordinates cooperative database project development with other MWRA divisions and departments to ensure complete and coordinated projects. Oversees preparation of department Management Information Systems (MIS) budget requests, coordination with MIS to ensure resources are available, and within-department assistance with hardware and software issues. Coordinates intra-agency resources to complete projects in a timely and efficient manner.

- Supports and develops efficient, timely, well integrated databases for purposes of Water Quality (WQ) monitoring and reporting including Complaints Database, CT database, water quality data requests. Develops "Golden Database" for unified storage of all final/validated water quality data used for compliance and related reporting.

- Develops improved water quality reporting functions and implement automated systems for compliance calculations, staff notifications, and reporting.

SECONDARY DUTIES:

- Performs other duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Knowledge of principles and practice of engineering, chemistry, biology, environmental science or related field as normally obtained through a four-(4) year college program. A master's degree or Ph.D is preferred; and

(B) Comprehensive knowledge of database management and reporting systems including experience in designing and implementing unified, well-integrated database systems, as acquired through seven (7) to nine (9) years of experience. A Ph.D. can be substituted for up to three (3) years of work experience; and

(C) Demonstrated knowledge of laboratory and/or water quality data, reporting, drinking water regulations, water treatment, biology and/or chemistry is preferred; and

(D) Three (3) to five (5) years supervisory experience; or

(E) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Strong leadership skills and demonstrated ability to lead a project team and develop and maintain productive working relationships with external parties. Ability to efficiently and productively utilize resources authority wide.

(B) Strong analytical and computer skills, including proficiency with statistical and graphical analyses, such as parametric, non-parametric, multivariate and multivariable analyses, spreadsheets, word processing and database application programs.

(C) Demonstrated ability to design and implement well-integrated, complex, and robust databases and reporting systems. High level proficiency in database management and statistical analysis of water quality data.

(D) Advanced knowledge of Oracle, SQL, Access, Excel required. Knowledge of Laboratory Information Management System (LIMS), PI System (OSIsoft), and/or AQUARIS software preferred.

(E) Programming experience and skill in R, Python, and/or MATLAB preferred.

(F) Proven expertise in the areas of experimental design, data analysis, and statistical process control. Knowledge of process control theory, practices and principles.

(G) Outstanding organizational, written and verbal communication skills. Excellent demonstrated ability to gather, analyze and present technical information in a clear, concise, and understandable manner.

SPECIAL REQUIREMENTS:

Acts as On-Call Manager for Quality Assurance EnQual-Water in rotation with other QA staff.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

There are no requirements that weight be lifted or force be exerted in the performance of this job, although the employee will have the opportunity to participate in field activities that involve lifting weight (e.g. water, sediment, or other environmental samples) or exerted force. Specific vision requirements required by this job include close vision, distance, vision, depth perception, and the ability to adjust focus.

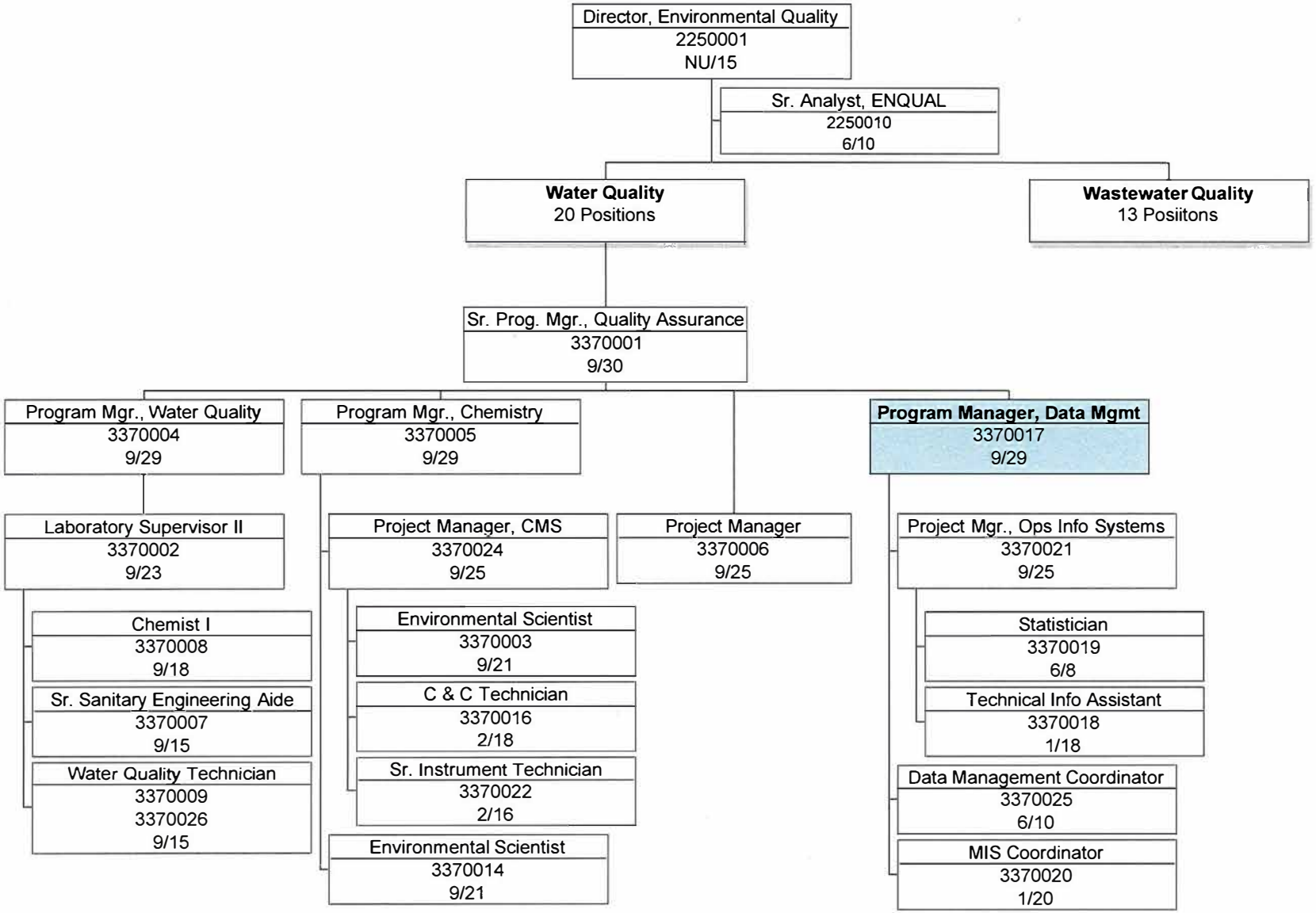
WORK ENVIRONMENT:

The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee regularly works in an office environment. The noise level in the work environment is usually a moderately quiet office setting.

January 2019

Environmental Quality

March 2019



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Appointment of Program Manager, Meter Data and Engineering, Planning Department

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COMMITTEE: Personnel & Compensation

___ INFORMATION
_X_ VOTE

Steve Estes-Smargiassi, Director, Planning & Sustainability
Andrea Murphy, Director, Human Resources
Carolyn Fiore, Deputy Chief Operating Officer
Preparer/Title

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

RECOMMENDATION:

To approve the appointment of Mr. Michael M. Greeley, to the position of Program Manager, Meter Data and Engineering (Unit 9, Grade 29), in the Planning Department, at an annual salary of $112,433.12, commencing on a date to be determined by the Executive Director.

DISCUSSION:

The position of Program Manager, Meter Data and Engineering became vacant in September 2017 upon the promotion of the incumbent. The Program Manager, Meter Data and Engineering reports directly to the Manager of Metering and Monitoring and supervises a staff of three who are responsible for overseeing the collection, accuracy and quality assurance of all water and wastewater flow data used for operational and rate revenue allocation purposes. The position works closely with staff who maintain metering field equipment installed in water and wastewater pipes, with Finance staff who use the data to allocate shares of the rate revenue requirement to each served community, and with Planning staff who use the data to report on Inflow and Infiltration (I/I) and assist communities in managing I/I. The position also works directly with community staff who use the data to manage their systems and understand water and sewer charges.

Selection Process

The Program Manager position was posted both internally and externally. A total of 14 candidates applied for the position, six of whom were determined to be qualified and were referred for an interview. The Director of Emergency Planning and Preparedness; the Manager of Metering and Monitoring; and the Manager of Operations Support conducted the interviews. Upon completion of the interviews, Mr. Greeley was determined to be the best qualified candidate based on his experience, knowledge, skills and education.

Michael Greeley is currently an Associate at Hazen and Sawyer where he has held progressively more responsible positions since 2007. He has managed the design of a number of water and wastewater facility projects. He was the project manager for MWRA's Spot Pond Water Storage Facility and Pump Station project, one aspect of which was the design and installation of the associated meters, Telog system, and SCADA controls. He also managed the design and construction of the Madbury Water Treatment Plant upgrade project in Portsmouth, NH., which included metering installation and SCADA data coordination. He is currently managing design of the Saco River Water Treatment Facility Upgrade project, which includes new instrumentation and control and real time SCADA metering of raw, filtered and finished water. In his role at Hazen, Mr. Greeley manages field investigation, design engineering, permitting, coordination with local officials, quality control, start-up testing, and record documentation for major projects. He directly supervises four engineers. He also serves as the corporate QA/QC Policy Manager, responsible for the review and evaluation of contract documentation generated by the Boston Office. Prior to that Mr. Greeley was the Assistant City Engineer in Melrose where he managed design consultants and collected and analyzed flow data for their unidirectional flushing program.

Mr. Greeley possesses good knowledge of technologies employed to collect meter data, and he has experience in managing, extracting and presenting data in understandable formats. He recently has taken courses in data science and data analytics. He has presented project information to public audiences and forums and has also formally presented to technical audiences such as the American Waterworks Association and the New England Waterworks Association, where he is an active member serving on the Program Committee.

Mr. Greeley has a Bachelor of Science in Civil Engineering and a Master of Engineering with a concentration in Project Management from Cornell University. He is a Registered Professional Engineer in Massachusetts and New Hampshire.

BUDGET/FISCAL IMPACT:

There are sufficient funds for this position in the FY19 expense budget.

ATTACHMENTS:

Resume of Michael M. Greeley
Position Description
Organization Chart

MICHAEL M. GREELEY PE, ENV SP

SKILLS & ABILITIES

Registered Professional Engineer (MA #47546, NH #14146, ME #14330)

Multidisciplinary Project Management – Design, Construction, Startup and Operation

Envision ™ Sustainability Professional ENV SP

Database Development, SQL, Python/R Data analytics

EXPERIENCE

HAZEN AND SAWYER, PC –BOSTON, MA

Associate – April 2013 to Current

Senior Principal Engineer/Principal Engineer – April 2009-2013

Assistant Engineer – January 2007-2009

- Design Manager for multi-disciplinary design projects up to $5 million design fee. responsibilities include coordinating the work of teams from up to eight different design disciplines, up to 20 employees and multiple subconsultants
- Facility SCADA Startup
- Mechanical/Process control engineering design lead on distribution system and water treatment design projects
- Project-specific direct supervision of five junior staff
- Corporate QA/QC Policy Manager – Boston Office

CITY OF MELROSE, MA ENGINEERING DEPARTMENT, MELROSE, MA

Assistant City Engineer – February 2005 to November 2006

- Water Distribution System/Wastewater collection system engineer
- Managed Several design consultants
- Collected, recorded and analyzed flow rate data for unidirectional flushing program.
- Public Communications

Key Projects

Saco River Water Treatment Facility Upgrade – Maine Water Company

Biddeford, ME – Currently Underway – $62 mil. Construction (Estimated), $3.8 mil. Design

- Project Manager for the design of Maine Water Company's Saco River Water Treatment Facility.
- Developed design budget numbers for internal design coordination for 25,000 man-hour with design effort and 4 subconsultant partner contracts
- Project includes I&C for new treatment facility, raw, filtered and finished water metering and plant level controls based on real-time SCADA monitoring.

Spot Pond Water Storage Facility and Pump Station - Massachusetts Water Resources Authority
Stoneham, MA - Online December 2015 - $50 mil. Construction, $3.3 mil. Design

- Installed four MWRA non-revenue meters in exterior valve pits.
- Drafted functional control descriptions in accordance with MWRA SCADA Standards.
- Provided functional description for MWRA Telog system
- Provided coordination efforts with local Stoneham officials and State building code officials to ensure smooth project delivery.

Madbury Water Treatment Plant – City of Portsmouth, NH

Madbury, NH - Online November 2011– $21 mil. Construction – $2 mil. Design

- Madbury WTP was New England's first LEED® Silver Certified water treatment plant
- Resident Engineer for Project startup including flow meter installation and SCADA data collection coordination.
- Lead mechanical engineer for dissolved air flotation and finished water pump systems

Macintosh Well and Blending Facility – Town of Newmarket, NH

Online November 2016 - $1.7 mil Construction, $180K Design

- Used remote radio monitoring of several flow meters within the Town's distribution system to control high service pumps to achieve mandatory minimum supply pressures throughout distribution.

City of Melrose Water Main Flushing and Replacement Program Management

Continuous – 2005 to 2006

- Leveraged distribution flushing data to identify city water mains with highest likelihood of failure and recommended CIP projects.

EDUCATION

CORNELL UNIVERSITY, ITHACA, NY

Bachelor of Science – Civil Engineering – 2002

Master of Engineering – Civil Engineering (Project Management) – 2003

- Project management capstone analyzing production efficiency utilizing data envelopment analysis with General Motors
- Database Design and SQL

COURSERA SPECIALIZATIONS, ONLINE

Python for Everybody (Univ. Of Michigan) *Completed August 2018*

Machine Learning Foundations (Univ. Of Washington) Completed October 2018

Data Science (Johns Hopkins University) Currently Enrolled – Expected Completion June 2019

- Python and R Programming for Data Analysis, mining and visualization projects.
- Machine learning specializations including: linear and logistic regression, clustering and nearest-neighbor, recommender algorithms

OUTREACH

2 Time Presenter at the American Water Works Association Annual Conference.
8 Time Presenter at the New England Waterworks Association (NEWWA) and Connecticut Waterworks Association (CTAWWA) Conferences.
NEWWA Program Committee, 2008 – Current (Vice Chair – 2011-2014, Chair – 2014-2017)
NEWWA Younger Member of the Year – 2014

MWRA
POSITION DESCRIPTION

POSITION: Program Manager, Meter Data and Engineering

PCR#: 1520010

DIVISION: Operations

DEPARTMENT: Planning/Meter Data

BASIC PURPOSE:

Manages data collection, quality assurance, and total flow calculations used for allocation of MWRA's rate revenue requirements for the water and wastewater systems using revenue meters, master meters, and other associated equipment.

SUPERVISION RECEIVED:

Works under the general supervision of the Manager, Metering and Monitoring.

SUPERVISION EXERCISED:

Exercises close supervision of the Project Manager, Meter Data and technical and administrative staff as assigned.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Manages all phases of water and wastewater meter data collection, quality control, and data access for users and customer reporting.

- Establishes and oversees data quality control and quality assurance procedures, and maintains records of quality assurance/quality control (QA/QC) activities. Ensures accuracy and integrity of data. Documents data anomalies.

- Coordinates closely with the Management Information Systems Department and external consultants to ensure up-to-date and user-friendly data management systems integral to MWRA's meter program.

- Coordinates with meter maintenance group to ensure emergency and preventive maintenance is performed on all meters used in the measurement and recording of water and wastewater flow and pressure.

- Recommends, develops, and implements revenue, operational, and regulatory matter policies

and procedures related to metering water and wastewater flows.

- Represents the MWRA in discussions with MWRA member communities related to water and wastewater flows and works to resolve discrepancies

- Coordinates projects with MWRA departments, communities and government agencies, and provides technical information and assistance.

- Notifies community personnel regarding increases in water demand that that might be related to increased hidden leakage within their distribution system.

- Collects annual non-billed water data from MWRA water communities.

- Participates in the preparation of staff summaries to the Board of Directors, and presents meter and flow related information to the Board. Prepares the monthly submissions for the Management Indicators reports (Yellow and Orange Notebooks).

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) Knowledge of water and wastewater metering, instrumentation, electronics and data management as normally attained through a four (4) year Bachelor of Science degree in civil, electrical or mechanical engineering or related field; and

(B) Seven (7) to nine (9) years of experience in the installation, operation and maintenance of water or wastewater metering collection systems; and

(C) Minimum of three (3) years of experience in data quality assurances processes; and

(D) Three (3) to five (5) years of experience supervising staff or consultants; or

(E) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Knowledge of water and /or wastewater metering, and associated data communication and management systems.

(B) Strong analytical and computer skills, including proficiency with spreadsheets, SQL database programs and engineering applications software.

(C) Demonstrated experience in the operation of a computerized water and/or wastewater flow metering system or similar software application.

(D) Demonstrated experience using Telog Enterprise software is preferred.

(E) Working knowledge of MWRA and community water distribution systems and wastewater collection systems is preferred.

(F) Ability to effectively communicate technical material orally and in writing.

SPECIAL REQUIREMENTS:

Must be available to respond to emergencies as needed. May be required to be part of an on-call rotation.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

The employee must regularly lift and/or move up to 10 pounds. Specific vision abilities required

by this job include close vision, and the ability to adjust focus.

WORK ENVIRONMENT:

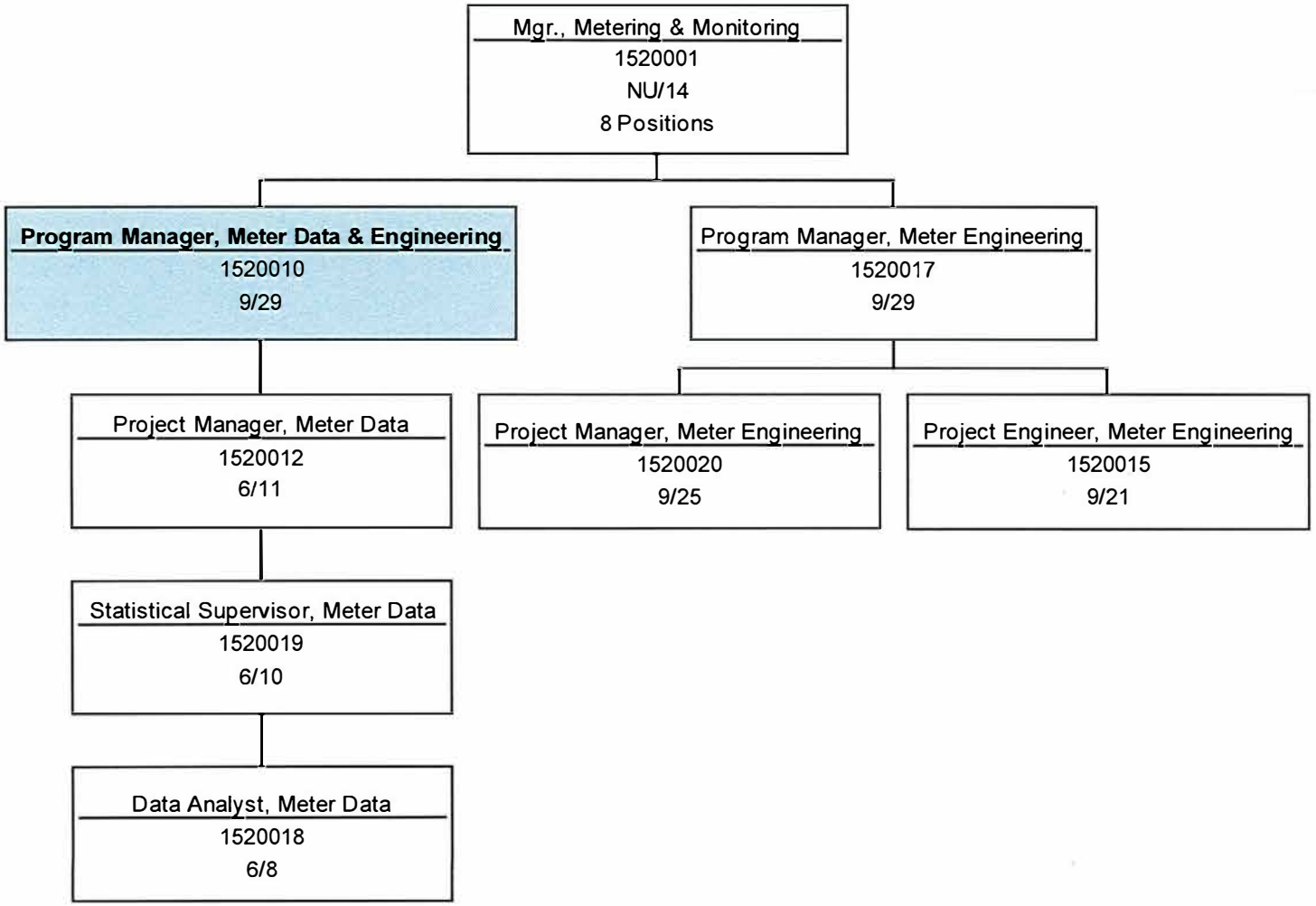
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job. While performing the duties of this job, the employee regularly works in an office environment. The employee occasionally works near moving mechanical parts and is occasionally exposed to outdoor weather conditions. The employee is occasionally exposed to fumes or airborne particles and toxic or caustic chemicals.

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

January 2019

Planning - Meter Data

March 2019



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Recommendations for Non-Union Pay Equity Adjustments

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COMMITTEE: Personnel & Compensation

_____ INFORMATION
__X__ VOTE

Robert Donnelly, Manager, Operations Support
Andrea Murphy, Director, Human Resources
Patterson Riley, Special Assistant for Affirmative Action
Preparer/Title

RECOMMENDATION:

To accept the recommendations of the pay equity consultant Hirsch Roberts Weinstein LLP and approve the salary adjustments summarized in Attachment B "List of Recommended Salary Adjustments" commencing on a date determined by the Executive Director.

DISCUSSION:

The Massachusetts Equal Pay Act (MEPA) went into effect July 1, 2018. MEPA clarifies the already existing requirement that employers pay employees doing comparable work at the same rate of pay without distinction by gender. MEPA defines "comparable work" as any work that requires substantially similar skill, effort and responsibility, and is performed under similar working conditions.

A job description or job title standing alone does not determine what work is comparable. Rather, jobs as actually performed in the workplace must be compared. The law provides that even if a male employee and a female employee have different job titles, if those jobs are "comparable", as defined by the law, an employee of one gender may not receive lesser wages than an employee of a different gender unless permitted by factors provided by the law.

Massachusetts employers are permitted to pay employees at different rates for comparable work only when based on a limited number of factors such as a seniority system and/or the education, training, or experience of a particular employee. MEPA also prohibits an employer from retaliating against an employee who files a complaint or reports a violation of the law.

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

On July 2, 2018, MWRA awarded a consultant contract to Hirsch Roberts Weinstein LLP (HRW) to assist MWRA with conducting a self-evaluation of its pay practices for Non-Union employees. The purpose of the self-evaluation is to assist the Authority with complying with MEPA.

In order to conduct a self-evaluation on MWRA Non-Union pay practices, HRW provided both employment law attorneys and an experienced human resources professional from Bondcliff HR Consultants with expertise in employee compensation practices. MWRA established an internal team of staff from Law, Operations, Human Resources and Affirmative Action to work with the Consultant on the self-evaluation process.

The Consultant's staff facilitated a total of 14 meetings to conduct the following key tasks needed to perform a self-evaluation:

1. Identify comparable jobs
2. Assess whether any differences in pay are justified under MEPA
3. Provide recommendations for remediating any gender-based pay differential
4. Perform statistical analyses required under MEPA
5. Recommend adjustments in pay practices
6. Provide a findings and recommendations report

Working with the internal MWRA project team, the Consultant facilitated the process of identifying MWRA Non-Union jobs that were of substantially similar skill, effort, responsibility, and working conditions. From this work, Non-Union jobs were placed into one of four major job categories: Administrative, MIS, Engineering, and Operations. Within these major categories, Non-Union jobs were then placed into "job groupings." Positions placed within these job groupings were determined to be of substantially similar skill, effort and responsibility, and are performed under similar working conditions. At the end of this process, a total of 26 separate job groupings were established.

Pay levels of incumbents within each of these job groupings were then reviewed and analyzed. It should be noted that no member of the MWRA project team participated in the pay analysis of the job grouping associated with their own position.

Using tools and resources provided by the Consultant, individual pay levels were compared with one another based on the applicable MEPA factors of seniority, education, training, and experience. Using this approach, the Consultant was able to identify pay differentials that could not be explained by these factors. In conducting this analysis, the Consultant was required under contract with HRW to identify situations where a salary adjustment is warranted to address any potential gender-based pay differentials as well as situations where an adjustment may be warranted based on internal inequity unrelated to gender.

In total, there are fifteen recommendations for salary adjustments out of a possible 65 Non-Union employees. These adjustments, in total, have an annual cost of $69,673 and represent 0.76% of the total annual payroll of the Non-Union group.

Of the 15, eight female employees and seven male employees are included for salary adjustments. Ten adjustments are recommended to remediate potential gender-based pay differentials under MEPA and five are recommended to address internal equity issues observed within the job grouping.

The Consultants' finding and recommendations report is included as Attachment A of this staff summary. Attachment B provides a summary of the recommended salary adjustments.

BUDGET/FISCAL IMPACTS:

There are sufficient funds in the FY19 Current Expense Budget to fund these adjustments.

ATTACHMENTS:

Attachment A:	Consultant Findings and Recommendations Report – Hirsch Roberts Weinstein LLP
Attachment B:	List of Recommended Salary Adjustments

To: MWRA Project Team

From: David B. Wilson, Arielle B. Kristan, Alexandra A. Mitropoulos, Hirsch Roberts Weinstein LLP and Russell Sullivan, Bondcliff HR Advisors, Inc.

Date: March 12, 2019

Re: Massachusetts Water Resources Authority Pay Equity Report

I. Introduction

The Pay Equity Team (as that term is defined below) conducted a self-evaluation of the Massachusetts Water Resources Authority's (MWRA) pay practices for non-union employees to assist the MWRA in establishing an affirmative defense to liability under the Massachusetts Equal Pay Act (MEPA), which went into effect on July 1, 2018. Our in-depth review confirmed our initial suspicions that the MWRA pay practices were already closely aligned with the spirit of MEPA and fair pay in general.

MEPA clarifies the already existing requirement that employers pay employees doing comparable work at the same rate of pay without distinction by gender. MEPA defines "comparable work" as any work that requires substantially similar skill, effort and responsibility, and is performed under similar working conditions.

Massachusetts employers are permitted to pay employees of different genders at different pay rates for comparable work only when the differential is based on one of six statutory justifications, including, for example, a seniority system and/or the education, training or experience of a particular employee. An employer that violates MEPA generally will be liable for twice the amount of unpaid wages owed to the affected employee, plus reasonable attorneys' fees and costs.

MEPA provides a complete affirmative defense to liability for employers if, within the prior three years and prior to the commencement of an employee's claim for violation of MEPA, the employer has completed a good-faith and reasonable self-evaluation of its pay practices. To be eligible for this affirmative defense, the self-evaluation must be reasonable in scope and detail and the employer must also demonstrate that reasonable progress has been made toward eliminating any impermissible wage differentials based on gender identified by the self-evaluation.

MEPA also adds several other protections for employees and job applicants. Under the law, employers may not prohibit employees from disclosing or discussing their wages. In addition, employers may not seek the salary history of any prospective employee before making an offer or employment that includes compensation. Finally, employers may not retaliate against an employee who exercises his or her rights under the law.

II. Pay Equity Review Participants

The MWRA established a cross-functional team to participate in the review of positions and employee pay. The MWRA Team Members included:

- Patterson Riley, Special Assistant for Affirmative Action
- Alana Hylton, Administrative Systems Coordinator, Affirmative Action
- Andrea Murphy, Director, Human Resources
- Natalie Wadzinski, Manager, Compensation, Human Resources
- Kathleen Chaloux, Senior Staff Attorney, Law Division
- Robert Donnelly, Manager, Operations Support, Operations Division

The MWRA Team awarded a consultant contract to Hirsch Roberts Weinstein LLP (HRW) to assist the MWRA with the self-evaluation. In order to conduct a self-evaluation on MWRA non-union pay practices, HRW provided employment law advice. HRW also retained Russ Sullivan, a human resources professional from Bondcliff HR Advisors, Inc. to provide advice concerning employee compensation practices. The HRW/Bondcliff Team included:

a. David Wilson, Partner, Hirsch Roberts Weinstein LLP
b. Arielle Kristan, Associate, Hirsch Roberts Weinstein LLP
c. Alexandra Mitropoulos, Associate, Hirsch Roberts Weinstein LLP
d. Russell Sullivan, President, Bondcliff HR Advisors, Inc.

The MWRA Team and the HRW/Bondcliff Team together made up the Pay Equity Team.

III. Process

The Pay Equity Team first met on July 16, 2018 to plan its review. Between August 2018 and February 2019, the MWRA Team and Mr. Sullivan met eleven times on the following dates: August 16, September 10, September 24, October 1, October 9, November 28, December 14, January 7, January 17, January 30, and February 7. The MWRA Team also met on several occasions without Mr. Sullivan. The entire Pay Equity Team met by conference call on November 13, 2018 to review and agree on the Comparable Groups and then for a final meeting on February 7, 2019.

The Pay Equity Team first collected information related to positions and employees for review of comparable positions and equal pay analyses. The information related to the position analysis included:

- Job descriptions, including:
    - Education and experience requirements;
    - Key duties and responsibilities;
    - Physical and mental effort; and
    - Working conditions.
- Organizational charts, identifying reporting relationships and peer positions; and
- Expense approval and authorization documents, identifying financial responsibility.

Similarly, the documents related to the pay analysis included:

- HRIS data including the following employee information:
    - Name
    - Date of hire
    - Gender
    - Date of entry to current position
    - Job Title
    - EEO Group
    - FLSA status
    - Current pay

- Employee resumes, including information related to education, prior relevant; experience, and licenses and certifications; and

- MWRA certification and license records.

A. Comparability Analysis

Once the information described above was collected, the Pay Equity Team conducted on-site meetings to discuss the relevant factors to define skill, effort, responsibility, and working conditions required for positions at the MWRA. In addition, Robert Donnelly, MWRA Project Manager and Mr. Sullivan further reviewed and clarified these factors during multiple conference calls. These discussions totaled approximately twenty-four hours.

Once these factors were finalized, each position was discussed against each factor, with reference to both the job description for the position and the knowledge of the MWRA Team members relating to the position. As a subset of the Responsibility factor, the MWRA Team and Mr. Sullivan considered an individual's impact on the organization if they made a mistake and, in some cases, used that to differentiate individuals in comparable groups.

Next, positions with common Skill, Effort, Responsibility, and Working Conditions profiles were placed into common groups. The groups were then compared to identify where differences in skill, effort responsibility, and working conditions were substantial. Where differences were not substantial, positions were combined into common groups.

By and large the comparable groups consist of multiple members. In some instances, we ended up with single job groupings where the management and/or operational requirements of the job were deemed unique. Ultimately, the group came to consensus on each position

B. Pay Analysis

Once the comparable groups were finalized, the Pay Equity Team conducted onsite meetings to review the statutory justifications for pay disparities to determine which ones applied to the relevant positions at the MWRA. In discussion with the MWRA Team, the Pay Equity Team made the following determinations:

Statutory Justification	Analysis
Merit System	MWRA does not have a process that meets the criteria of a Merit System as defined in the Massachusetts Equal Pay Act, so it was not used in the analysis.
Seniority System	MWRA does not have a process for determining pay rates for non-bargaining unit positions that meets the criteria of a Seniority System as defined in the Massachusetts Equal Pay Act, so it was not used in the analysis.
System which measures earnings by quantity or quality of production, sales, or revenue	MWRA does not differentiate employee pay by quantity or quality of production, sales, or revenue, so this factor was not used in the analysis.
Geographical location in which a job is performed	MWRA does not differentiate pay based on the geographic location in which the employee works, so this factor was not used in the analysis.
Travel	MWRA does not differentiate pay based on the amount of travel an employee incurs in the performance of work, so this factor was not used in the analysis. A group of employees do receive vehicles to travel to and from work. Use of these vehicles by these employees is limited to commuting to and from work to home. The use of these vehicles was not considered in the analysis.
Education, training or experience	Each of these factors were deemed relevant to the pay of employees in all comparable work groups and were therefore used in the analysis. Of note, offers of employment with MWRA consider the education, experience, licenses and certifications of the prospective employee weighed against the current employee population. In addition, position descriptions identify both minimal and preferred education, experience, licenses and certifications for positions

Once the relevant factors were determined, employees' resumes were reviewed to identify each employee's position experience, organizational experience, total experience, education, and licenses/certifications. These factors were derived in part from information regarding relevant prior work experience and date of hire and date of entry into the employee's current position, which were obtained from the MWRA HRIS system. The following information was then compiled into the Pay Calculation Tool provided by the Office of the Massachusetts Attorney General[1] (the "AGO Pay Calculation Tool") for comparison and analysis:

- Name
- Date of Hire and calculated MWRA years of experience
- Job Title
- Date of entry into current position and calculation of position experience
- Current pay rate
- Straight time and overtime paid for the 52-week period from December 1, 2017 through November 30, 2018
- Regular and overtime hours worked during the 52-week period from December 1, 2017 through November 30, 2018
- Scheduled hours

Following the analysis using the AGO Pay Calculation tool, the MWRA Team and Mr. Sullivan held on-site meetings to perform comparator pay analysis within each group with more than one employee. In addition, the MWRA Project Manager and Mr. Sullivan spoke during multiple conference calls to review and clarify the comparator pay analysis. These discussions totaled approximately nine hours. This approach was necessitated because all comparable groups contained fewer than 30 employees, and therefore were not conducive to regression analysis. In connection with this analysis, Mr. Sullivan provided a custom Excel tool to facilitate the comparison of pay and pay factors among employees within each comparable group.

During the comparator pay analysis, each male employee in each comparable group was compared to each female employee in each group and vice versa. Specifically, comparisons were made of employee pay based on the position experience, organization experience, total experience, education and licenses/certification of each employee. Pay Equity Adjustments were recommended when an employee with a greater combination of experience, education and licenses/certifications was found to be paid less than a comparator employee of the opposite gender. Internal Compensation Adjustments were recommended when an employee with a greater combination of experience, education and license/certifications was found to be paid less compared to a comparator employee of the same gender within the comparable group.

C. Recommended Pay Adjustments

The recommended pay adjustments affect fifteen employees out of sixty-five employees. Of those fifteen employees, twelve are already within five percent of their targeted pay.

[1] The AGO Pay Calculation Tool may be accessed by visiting https://www.mass.gov/massachusetts-equal-pay-law.

Of the fifteen, eight female employees and seven male employees are recommended for salary adjustments. Ten adjustments are recommended to remediate potential gender-based pay differentials under MEPA (Pay Equity Adjustments) and five are recommended to address internal equity issues observed within the job groupings (Internal Compensation Adjustments).

The recommended pay adjustments in total, have an annual cost of $69,673 and represent 0.76% of the total annual payroll of the Non-Union group. As a result, the adjustments appear to be within MWRA's available resources to address immediately.

IV. Recommendations

Following the conclusion of the analysis, the Pay Equity Team proposes the following recommendations in addition to the recommended pay adjustments to ensure continued compliance with MEPA:

Annual Compensation Review Process. MWRA should adopt a pay equity review as part of its annual compensation review process. This process would compare the key pay factors (education, licenses/certifications and experience (position, MWRA and total) to the pay of employees within each comparable group and adjust pay increases to ensure pay aligns with these factors.

Salary Setting Process for New Hires, including members of the MWRA Project Team serving as the "MEPA gatekeeper" within the hiring process tasked with ensuring equal pay within groups. MWRA currently reviews the education, experience and licenses/certifications of potential new hires against that of existing employees within the same position or salary grade. MWRA should expand this practice to ensure that the comparison is made against all employees within the comparable group to which the position belongs.

Salary Setting Process for Transfers and Promotions, including the MEPA gatekeeper within the hiring process tasked with ensuring equal pay within groups. MWRA currently reviews the education, experience and licenses/certifications of employees under consideration for promotions and transfers compared to existing employees within the same position or salary grade. MWRA should expand this practice to ensure that the comparison is made against all employees within the comparable group that contains the position to which the employee is being transferred or promoted.

Comparability Analysis for New, Non-Bargaining Unit Positions, including the MEPA gatekeeper within the evaluation process tasked with ensuring that new, non-bargaining unit positions are placed into the appropriate comparable group. MWRA currently reviews new non-bargaining unit positions through its salary grading process to determine the grade and salary range for the position. In addition to this process, MWRA should use the comparability analysis employed in the pay equity review to determine the comparable pay equity grouping for the new position.

Integration with Positions within Collective Bargaining Units. MWRA currently conducts a regular review of pay among non-bargaining positions that supervise employees within the bargaining unit, particularly those positions from which the non-bargaining unit

supervisors and managers are drawn. This practice should continue. In addition, the comparability analysis should be extended to non-bargaining unit positions to ensure that any potential pay equity issues that may result from the identification of comparable groups' positions that include both bargaining unit and non-bargaining unit positions are identified and addressed. The comparability matrix that was used for this pay equity analysis was tailored to the non-bargaining unit positions. Should the analysis be extended to bargaining unit positions, additional levels of skill, effort, responsibility and working conditions would need to be identified for an effective analysis.

V. Conclusions

Members of the Pay Equity Team met for approximately twenty-five hours to determine comparable groups and an additional nine hours to conduct the pay analysis in a genuine attempt to identify unlawful pay disparities among employees performing comparable work. The analysis resulted in fifteen recommended adjustments, or 23.1% of the sixty-five employees.

(1) Eight of the twenty-four female employees (33%) are recommended to receive adjustments

(2) Seven of the forty-one male employees (17%) are recommended to receive adjustments

(3) Ten of the fifteen recommended adjustments are for Pay Equity reasons.

Recommended adjustments for the eight female employees total $24,359, or 0.73% of the total female payroll. Recommended annual adjustments for the seven male employees is $45,314, or 0.78% of the total male payroll.

Of the fifteen employees for whom pay adjustments are recommended, all the male employees were already being paid within 10% or their targeted pay rate and all the female employees were already being paid within 5% of their targeted pay rate. It should be noted that MWRA has historically employed an effective review process when making pay decisions. As a result, the number of recommended adjustments is relatively few as compared to other organizations performing similar self-evaluations.

The annual total dollar amount of recommended adjustments, pay equity and internal compensation, is $69,673.00, or 0.76% of payroll. As a result, the adjustments appear to be within MWRA available resources to address immediately. All adjustments are recommended to be presented to the MWRA Board of Directors for approval as soon as possible.

David B. Wilson
3/12/2019

List of Recommended Salary Adjustments
March 20, 2019

Job Grouping	Name	Job Title	Gender	Current Base Compensation	Proposed Salary Adjustment	Proposed Base Compensation	Justification
Admin - Black	Otis, Theodore	Manager, Purchasing	Male	108,766	10,714	119,480	MEPA adjustment
Admin - Brown	Giffen, Michele	Director, Administration	Female	159,783	6,657	166,440	MEPA adjustment
Admin - Brown	Francisco Murphy, Carolyn	General Counsel	Female	164,569	1,871	166,440	MEPA adjustment
Admin - Gray	King, Cheryl	Assistant Director, Internal Audit	Female	112,783	2,217	115,000	Internal Equity
Admin - Green	Horan, Matthew	Treasurer	Male	129,823	10,577	140,400	Internal Equity
Admin - Green	Riley, Patterson	Special Assistant For Affirmative Action	Male	142,635	4,921	147,556	MEPA adjustment
Admin - Green	Murphy, Andrea	Director, Human Resources	Female	145,230	2,326	147,556	MEPA adjustment
Admin - Green	Card, Bethany	Director, Environmental & Regulatory Affairs	Female	146,775	781	147,556	MEPA adjustment
Admin - Orange	Convery, Rose Marie	Special Assistant to Executive Director	Female	129,033	2,455	131,488	MEPA adjustment
Admin - Yellow	Rozowsky, Brian	Director, Internal Audit	Male	135,372	2,708	138,080	Internal Equity
Ops - Black	Wong, Lisa	Manager, Process Control	Female	132,151	1,422	133,573	MEPA adjustment
Ops - Blue	Keough, Daniel	Manager, Maintenance	Male	130,933	3,716	134,649	Internal Equity
Ops - Brown	Reilley, Elizabeth	Director, Environmental Quality	Female	139,620	6,630	146,250	MEPA adjustment
Ops - Green	Wenger, Ethan	Deputy Director, DIWWTP	Male	137,188	4,401	141,589	Internal Equity
Ops - Purple	Foss, Guy	Director, Western Operations	Male	141,723	8,277	150,000	MEPA adjustment
				Total Increases:	**69,673**		
				Total Payroll:	**9,186,180**		
				As % of NU Payroll:	**0.76%**		

MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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ADMINISTRATION, FINANCE & AUDIT COMMITTEE MEETING

to be held on

Wednesday, March 20, 2019

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

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

Time: Immediately Following P&C Committee

AGENDA

A. Information

1. Delegated Authority Report – February 2019
2. MWRA Retirement System Update
3. FY2019 Financial Update and Summary as of February 2020

B. Contract Amendments/Change Orders

1. Main Line Adjustment Project, Fore River Railroad: J.F. White Contracting Co., Contract FRR32, Change Order 2
2. Lead Market Participant Services for the Deer Island Treatment Plant: Direct Energy Business Marketing, LLC, Amendment 1

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the

Administration, Finance and Audit Committee

February 20, 2019

A meeting of the Administration, Finance and Audit Committee was held on February 20, 2019 at the Authority headquarters in Charlestown. Committee Chair Vitale presided. Present from the Board were Messrs. Carroll, Cook, Cotter, Flanagan, Pappastergion, Peña and Walsh and Ms. Wolowicz. Mr. Foti was absent. Among those present from the Authority staff were Frederick Laskey, Carolyn Francisco Murphy, David Coppes, Carolyn Fiore, Thomas Durkin, Michele Gillen, Stephen Estes-Smargiassi, Stephen Cullen, Douglas Rice, James Halloran, Michael Cole, Leo Norton, Matthew Horan, Denise Breiteneicher, Michael McDonald and Robert Belkin. The meeting was called to order at 10:02 a.m.

Information

FY2019 Second Quarter Orange Notebook

Staff made a presentation. There were questions and answers. Mr. Walsh requested that future reports include a trend line for workers' compensation claims.

Delegated Authority Report – January 2019

Staff made a verbal presentation. There were questions and answers. (Mr. Carroll joined the meeting.)

FY2019 Mid-Year Capital Project Spending Report

Staff made a verbal presentation. There was discussion and questions and answers. (Ms. Wolowicz left the meeting.)

FY2019 Community Assessment Adjustments

Staff made a verbal presentation. There was brief discussion. (Ms. Wolowicz returned to the meeting.)

Preliminary FY2020 Water and Sewer Assessments

Staff made a verbal presentation. There was brief discussion. **Approvals**

* Transmittal of the FY2020 Proposed Current Expense Budget to the MWRA Advisory Board

Staff made a presentation. There was discussion and questions and answers. Mr. Vitale requested a presentation at a future meeting of how the pension and OPEB funds were invested and strategy going forward.

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

* Approval of Eightieth Supplemental Bond Resolution

Staff made a verbal presentation. There were questions and answers.

The Committee recommended approval (ref. AF&A B.2).

* Delegation of Authority to Execute Contracts for the Purchase and Supply of Electric Power for the MWRA Interval Accounts

Staff made a verbal presentation.

The Committee recommended approval (ref. AF&A B.3).

* Appointment of Proxy for Fore River Railroad Corporation

Staff made a verbal presentation.

The Committee recommended approval (ref. AF&A B.4).

Contract Amendments/Change Orders

* Actuarial Services: The Segal Company, Inc., Contract F248, Amendment No.1

Staff made a verbal presentation. There were questions and answers.

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

The meeting adjourned at 11:24 a.m.

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* Committee recommendation approved by the Board on February 20, 2019

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Delegated Authority Report – February 2019

COMMITTEE: Administration, Finance & Audit

_X_ INFORMATION
___ VOTE

Michele S. Gillen
Director, Administration

Linda Grasso, Admin. Systems Coordinator
Barbara Aylward, Administrator A & F
Preparer/Title

Douglas J. Rice
Director of Procurement

RECOMMENDATION:

For information only. Attached is a listing of actions taken by the Executive Director under delegated authority for the period February 1 – 28, 2019.

This report is broken down into three sections:

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

BACKGROUND:

The Board of Directors' Management Policies and Procedures, as amended by the Board's vote on February 21, 2018, delegate authority to the Executive Director to approve the following:

Construction Contract Awards:

Up to $1 million if the award is to the lowest bidder.

Change Orders:

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

Professional Service Contract Awards:

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

Non-Professional Service Contract Awards:

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

Purchase or Lease of Equipment, Materials or Supplies:

Up to $1 million if the award is to the lowest bidder.

Amendments:

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

Amendments to the Position Control Register:

Amendments which result only in a change in cost center.

BUDGET/FISCAL IMPACT:

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

CONSTRUCTION/PROFESSIONAL SERVICES DELEGATED AUTHORITY ITEMS FEBRUARY 1 - 28, 2019

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMEND/CO	COMPANY	FINANCIAL IMPACT
C-1.	02/04/19	**SURVEY SERVICES TECHNICAL ASSISTANCE** INCREASE SURVEY SERVICES IN ORDER TO COMPLETE FOLLOWING TASKS: GENERAL SURVEY SERVICES; SETTLEMENT AND GROUNDWATER LEVEL MONITORING; BURIED MANHOLE LOCATION; AMENDED EASEMENT PLAN FOR SPOT POND STORAGE FACILITY - DRAINAGE EASEMENT; SURVEY SERVICES FOR 233 CLINTON ROAD IN BROOKLINE AND TERRACE AVENUE SUDBURY AQUEDUCT IN NEWTON.	60ZTA	1	BRYANT ASSOCIATES, INC.	$25,000.00
C-2.	02/04/19	**CLINTON WASTEWATER TREATMENT PLANT PHOSPHORUS REDUCTION FACILITY** FURNISH AND INSTALL REVISED SUPPORT OF EXCAVATION AND DEWATERING FOR THE NEW PHOSPHORUS REDUCTION BUILDING; FURNISH AND INSTALL TWO 3-INCH GAS PRESSURE REGULATORS, FLUE VENTING AND EXISTING PIPE LABELING; EXTEND THE CONTRACT TERM BY 180 CALENDAR FROM SEPTEMBER 13, 2017 TO MARCH 12, 2018.	7411	7	DANIEL O'CONNELL'S SONS, INC.	$164,464.40
C-3.	02/14/19	**CHELSEA CREEK HEADWORKS UPGRADE** FURNISH AND INSTALL FIBERGLASS REINFORCED PLASTIC (FRP) ODOR CONTROL DUCTWORK AND RECONFIGURE THE FRP DUCTWORK AT THE ODOR CONTROL STACK; FURNISH AND INSTALL TWELVE REMOTE CONTROL STATIONS FOR THE ELECTRICALLY OPERATED ODOR CONTROL DAMPERS; FURNISH AND INSTALL NINE NEMA 7 ACTUATORS FOR THE ELECTRICALLY OPERATED ODOR CONTROL DAMPERS IN LIEU OF SPECIFIED NEMA 4X ACTUATORS.	7161	25	BHD/BEC 2015, A JOINT VENTURE	$149,469.00

PURCHASING DELEGATED AUTHORITY ITEMS FEBRUARY 1 - 28, 2019

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-1	02/04/19	**PURCHASE OF ONE MUFFIN MONSTER CHANNEL-MOUNTED GRINDER CARTRIDGE** AWARD OF A SOLE SOURCE PURCHASE ORDER FOR ONE MUFFIN MONSTER CHANNEL-MOUNTED GRINDER CARTRIDGE FOR THE DEER ISLAND TREATMENT PLANT.			JWC ENVIRONMENTAL	$39,592.60.
P-2	02/04/19	**DISPOSE OF AND/OR RECYCLE EXCAVATED MATERIALS** AWARD OF A ONE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER TO DISPOSE OF AND/OR RECYCLE EXCAVATED MATERIALS.	WRA-4615		NORTHGATE RECYCLING, INC.	$81,000.00
P-3	02/04/19	**PURCHASE OF ONE NEW TRACTOR WITH MOWING ARM** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR ONE NEW TRACTOR WITH MOWING ARM FOR WESTERN OPERATIONS.	WRA-4609		PADULA BROTHERS, INC.	$148,740.51
P-4	02/06/19	**PURCHASE OF ONE NEW MILLING MACHINE** AWARD OF A PURCHASE ORDER FOR ONE NEW MILLING MACHINE FOR THE CHELSEA FACILITY MACHINE SHOP.	WRA-4604Q		MSC INDUSTRIAL SUPPLY CO.	$30,580.00
P-5	02/06/19	**PURCHASE ORDER FOR BUSINESS ANALYST CONSULTANT** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER TO PROVIDE A BUSINESS ANALYST CONSULTANT RELATED TO THE MAXIMO UPGRADE.	WRA-4636Q		WHITRIDGE ASSOCIATES, INC.	$79,200.00
P-6	02/11/19	**SUPPLY AND DELIVERY OF CONCRETE PRODUCTS** AWARD OF A ONE-YEAR PURCHASE ORDER FOR THE SUPPLY AND DELIVERY OF CONCRETE PRODUCTS FOR VALVE REPLACEMENT AND LEAK REPAIR.	WRA-4627Q		AGGREGATE INDUSTRIES	$30,337.50
P-7	02/11/19	**PURCHASE OF EIGHT WORKSTATIONS** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR 8 WORKSTATIONS FOR THE TUNNEL REDUNDANCY DEPARTMENT.	WRA-4619Q		CREATIVE OFFICE INTERIOR, INC.	$38,580.79
P-8	02/15/19	**PURCHASE OF ONE NEW LATHE MACHINE** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR ONE NEW LATHE MACHINE FOR THE CHELSEA FACILITY MACHINE SHOP.	WRA-4602		TOOLS UNLIMITED, INC.	$64,589.56
P-9	02/15/19	**PURCHASE OF TWELVE WORKSTATIONS** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR 12 WORKSTATIONS FOR THE DEER ISLAND TREATMENT PLANT.	WRA-4605Q		W.B. MASON COMPANY, INC.	$72,651.86
P-10	02/26/19	**MAINTENANCE AND SUPPORT OF HARDWARE AND SOFTWARE FOR PICS AND SCADA** AWARD OF TWO SEPARATE SOLE SOURCE PURCHASE ORDER FOR MAINTENANCE AND SUPPORT OF HARDWARE AND SOFTWARE FOR THE DEER ISLAND TREATMENT PLANT PICS AND SCADA FOR THE TIME PERIOD MAY 1, 2019 THROUGH APRIL 30, 2022.			WATERFALL SECURITY SOLUTIONS, LTD.	$71,307.00 $85,535.00
P-11	02/26/19	**PURCHASE OF REGENERATED ACTIVATED CARBON** AWARD OF A THREE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE REPLACEMENT OF REGENERATED ACTIVATED CARBON FOR THE BRAINTREE-WEYMOUTH REPLACEMENT PUMP STATION AND THE HOUGHS NECK PUMP STATION.	WRA-4622		CARBON ACTIVATED CORPORATION	$95,000.00
P-12	02/26/19	**SUPPLY AND DELIVERY OF SODIUM BISULFITE** AWARD OF A ONE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY AND DELIVERY OF SODIUM BISULFITE TO THE DEER ISLAND TREATMENT PLANT.	WRA-4614		SOUTHERN IONICS, INCORPORATED	$189,000.00
P-13	02/26/19	**PURCHASE OF THE PROVISION OF THE MWRA CONSUMER CONFIDENCE REPORT** AWARD OF TWO-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR PRINTING AND MAILING OF THE ANNUAL WATER QUALITY REPORT. THIS AWARD INCLUDES AN OPTION FOR A THIRD YEAR, IF RECOMMENDED BY STAFF, FOR AN ADDITIONAL $230,585.93.	WRA-4613		HANNAFORD & DUMAS COMMERCIAL PRINTERS	$461,171.86
P-14	02/26/19	**PURCHASE OF TWO STRAINER SUB-ASSEMBLIES** AWARD OF A SOLE SOURCE PURCHASE ORDER FOR TWO STRAINER SUB-ASSEMBLIES FOR THE DEER ISLAND TREATMENT PLANT.			S.P. KINNEY ENGINEERS, INC.	$248,745.00
P-15	02/26/19	**SUPPLY AND DELIVERY OF CARBON DIOXIDE** AWARD OF A ONE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY AND DELIVERY OF CARBON DIOXIDE TO THE JOHN J. CARROLL WATER TREATMENT PLANT.	WRA-4633		LINDE LLC	$312,468.00
P-16	02/26/19	**SUPPLY AND DELIVERY OF SODA ASH** AWARD OF A THREE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY AND DELIVERY OF SODA ASH TO THE CLINTON WASTEWATER TREATMENT PLANT.	WRA-4623		ASTRO CHEMICALS, INC.	$683,930.00
P-17	02/28/19	**SUPPLY AND DELIVERY OF SODIUM BISULFITE** AWARD OF A ONE-YEAR PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY AND DELIVERY OF SODIUM BISULFITE TO VARIOUS WASTEWATER LOCATIONS.	WRA-4630		UNIVAR USA, INC.	$69,620.00

POSITION CONTROL REGISTER (PCR) LOCATION CHANGES FEBRUARY 2019

DATE OF CHANGE	POSITION TITLE	CURRENT PCR#	CURRENT COST CENTER	NEW PCR #	NEW COST CENTER	REASON FOR CHANGE
2/2/2019	Manager, Environmental Compliance	55250122	Operations Engineering	5210102	Operations Administration	Consolidation of environmental permitting and compliance work under the Director of Environmental and Regulatory Affairs.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Retirement System Update

COMMITTEE Administration, Finance & Audit

X INFORMATION
VOTE

Thomas J. Durkin
Director, Finance

At the February 20, 2019 meeting, the Board of Directors requested an update on the MWRA Employees' Retirement System. The update focuses on the system's asset allocation strategy, particular investments, fees and performance.

RECOMMENDATION:

For information only.

DISCUSSION:

The MWRA Employees' Retirement System (Retirement System) is a public contributory defined benefit plan created by the Enabling Act that created the MWRA. Employees of MWRA are members except the remaining 43 who as former MDC employees, retained their membership in the State Employees Retirement System. As of the latest valuation report of January 1, 2018, there are 582 retired participants and beneficiaries receiving retirement benefits, 42 inactive participants with a vested right to benefits, 64 participants entitled to a refund of their employee contributions, and 1,000 active participants.

The Retirement System is overseen by a Board of Trustees. The makeup of the Board was defined in the Enabling Act in 1984 and subsequently amended in 2006 to increase the number of Trustees from three to five. The Trustees are MWRA Board of Directors Secretary Andrew Pappastergion, MWRA Board of Directors' appointment Thomas Durkin, elected member James Flemming, elected member Kevin McKenna, and the fifth member chosen by the other four members, Frank Zecha.

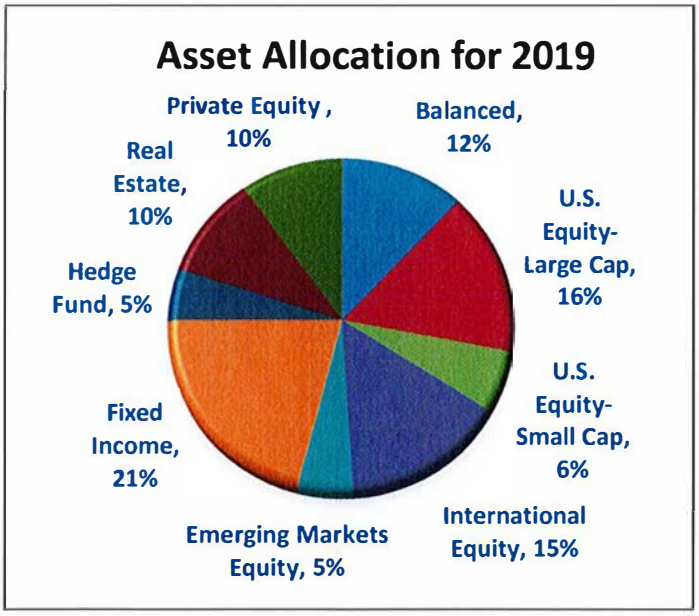
The investment pool has grown over the years. Starting in 1986 with $0.303 million, and by December 31, 2018 the fund had grown to $509.2 million (preliminary). Contributions to the fund come from three sources, member contributions accounting for 22%, MWRA's annual employer/plan sponsor contribution accounting for 12%, and investment income accounting for 66%.

Every two years the Retirement System will engage an actuary firm to conduct an actuarial valuation report of the system. The most recent valuation report was performed as of January 1, 2018. The net pension liability was calculated to be $21.0 million. This is the difference between the actuarial value of the liability for benefits to be paid and the market value of the assets of the system. On an actuarial basis, the Retirement System is 95% funded.

Each year the regulatory authority for Massachusetts public retirement systems, the Public Employees Retirement Administration Commission (PERAC) publishes a report on the 104 retirement systems it oversees. The most recent report of December 31, 2017 reports that the MWRA Retirement System was the most funded system followed by Leominster at 90.1% and MassPort at 89.6%.

Actuaries use many assumptions to calculate the liability and asset values contained in their report. Perhaps most significant is the assumed rate of return earned on the investment portfolio. For many years the MWRA Retirement System assumed 8%. This assumption was supported by the actual investment returns but in 2015 due to lower returns and the view that returns would likely be lower in the future, the assumption was lowered to 7.75%. In 2017 the assumption was further reduced to 7.50%. Because this rate is used to discount the future value of the assets, the lower the rate, the lower the asset value and the higher the net pension liability. The Retirement System will adopt an actuarial assumed rate of return that is not so high as to be unattainable resulting in underachievement and actuarial losses but not so low as to understate expected long-term estimates of investment returns resulting in unnecessarily high annual contributions by MWRA.

An investment strategy is developed to best achieve the investment goal of the Retirement System. With the assistance of its consultant New England Pension Consultant (NEPC), the Trustees create an asset allocation strategy. The strategy employees several different asset classes beyond the traditional "stocks and bonds." The strategy employs real estate, private equity and other asset classes to best achieve the assumed rate of return with the appropriate level of risk. The chart below illustrates the current asset allocation strategy.



Within each asset class, individual investment management firms are hired. The process for selection of investment managers is regulated by PERAC. For each managed investment, a request for proposals is issued and responses are formerly reviewed by NEPC. After considering NEPC's review, the Retirement System Trustees will award a management contract.

Management fees depend on the type of investment management required. For an index fund, a manager's primary task is to replicate the index. In this case a fee of 0.05% is typical. In the case of Private

Equity investments, managers are charged with developing investment opportunities. This might include investigating specific firms within and industry and finding possible investments. Each investment is researched and could require active consultation including serving on the firm's board of directors. These management fees can be 2.0% plus 20% on investment returns. PERAC reports in its most recent report that the average fee for Massachusetts retirement systems was 0.54%. The MWRA Retirement System paid 0.64%.

The MWRA as plan sponsor and the Retirement System Trustees as fiduciaries of the invested assets are working together to meet the challenge of achieving full funding in 2026 and beyond at the lowest cost. The current economic climate poses challenges.

The last quarter of calendar year 2018 was particularly challenging for investors. Positive investment earnings for the first three quarters of the year were reversed resulting in the first year –end negative return for the MWRA Employees' Retirement System investment portfolio in ten years. The Standard and Poor's 500 index and the Dow Jones Industrial Average index fell for the first time in three years. Non-US Equities, particularly Emerging Markets equity also fell.

The Federal Reserve Open Market Committee (FOMC) held the target range for the federal funds rate at 2.25%-2.50% at its January 30, 2019 meeting. The FOMC dropped the phrase "further gradual increases" from its post meeting statement and added "it will be patient as it determines what future adjustments to the target range for the federal funds rate may be appropriate." This is a change from the policy of gradual increases of the past several years.

The volatility and uncertainty facing institutional investors across all asset classes requires careful consideration of the MWRA Employees' Retirement System investments.

Staff will provide a presentation describing the current investment strategy.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: FY19 Financial Update and Summary Through February 2019

COMMITTEE: Administration, Finance & Audit

X INFORMATION
___ VOTE

James Halloran, Budget Director
Michael Cole, Budget Manager
Preparer/Title

Thomas J. Durkin
Director, Finance

RECOMMENDATION:

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

DISCUSSION:

MWRA is continuing the practice of setting aside favorable Capital Finance variances into the Defeasance Account with the intention of using these funds to defease debt and provide rate relief in future years. Targeted defeasances are a critical component of the Authority's multi-year rate management strategy. As such, in February the year-to-date debt related savings of $5.5 million was transferred to the Defeasance Account. This favorable variance is largely driven by the lower than budgeted variable rates. Staff have already identified candidates for year-end defeasance and included the impact of the FY19 defeasance in the Proposed FY20 budget and planning estimates. It is noteworthy to mention that the favorable budget variance from the variable rate bonds is reduced this year relative to past years due to rising interest rates.

The total Year-to-Date variance for the FY19 CEB is $6.5 million, due to lower direct expenses of $3.7 million and indirect expenses of $0.5 million; and higher revenue of $2.4 million. The year-end favorable variance is projected at $15.1 million, of which $8.3 million is related to debt service. Beyond debt service savings, staff project a surplus of approximately $6.8 million at year-end of which $4.1 million would be from lower direct expenses, $0.2 million from lower indirect expenses, and $2.5 million from greater than budgeted revenues.

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

FY19 Current Expense Budget

The CEB expense variances through February 2019 by major budget category were:

- Net Lower Direct Expenses of $3.7 million or 2.3% under budget. Spending was lower for Wages & Salaries, Maintenance, Fringe Benefits, Other Materials, and Professional Services. This is offset by higher spending on Utilities, Other Services, Overtime, Chemicals, Worker's Compensation, and Training & Meetings.

- Lower Indirect Expenses of $0.5 million or 1.5%, due to lower expenses for the low voltage switchgear upgrades related to the HEEC cable and lower Watershed reimbursements due to a FY2018 year-end over accrual.

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

	FY19 Budget YTD	FY19 Actual YTD	$ Variance	% Variance
Direct Expenses	$156.2	$152.5	-$3.7	-2.3%
Indirect Expenses	$29.5	$29.0	-$0.5	-1.5%
Capital Financing	$314.5	$314.5	$0.0	0.0%
Total	**$500.1**	**$496.0**	**-$4.1**	**-0.8%**

Totals may not add due to rounding

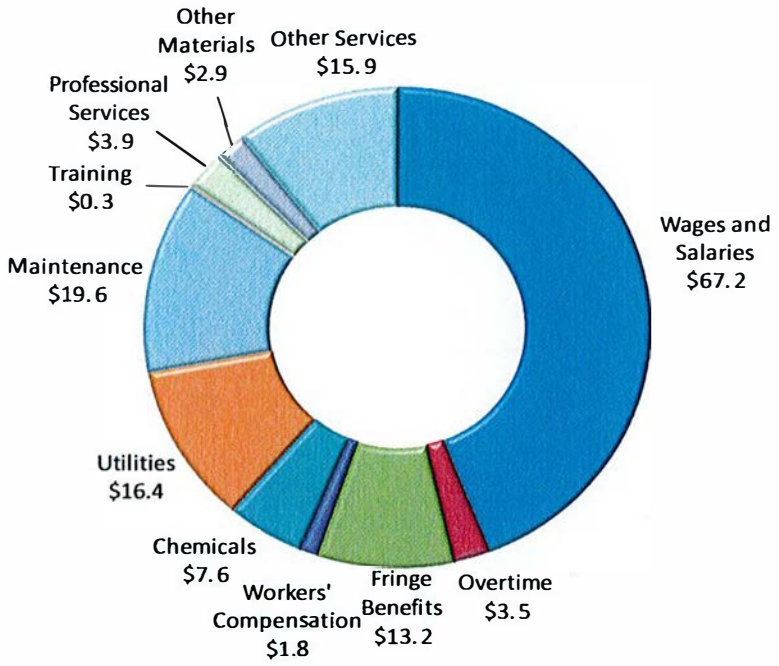
Total Revenues of $519.7 million were $2.4 million or 0.5% over budget. The majority of the variance is pertaining to the favorable short-term rates for investment income.

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

Direct Expenses

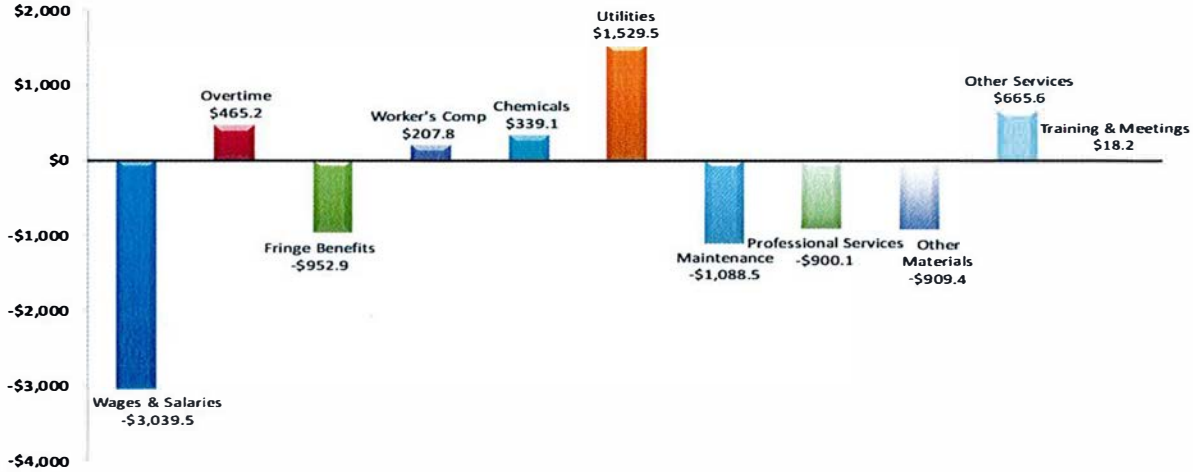
Year-to-date direct expenses totaled $152.5 million, which was $3.7 million or 2.3% less than budgeted.

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



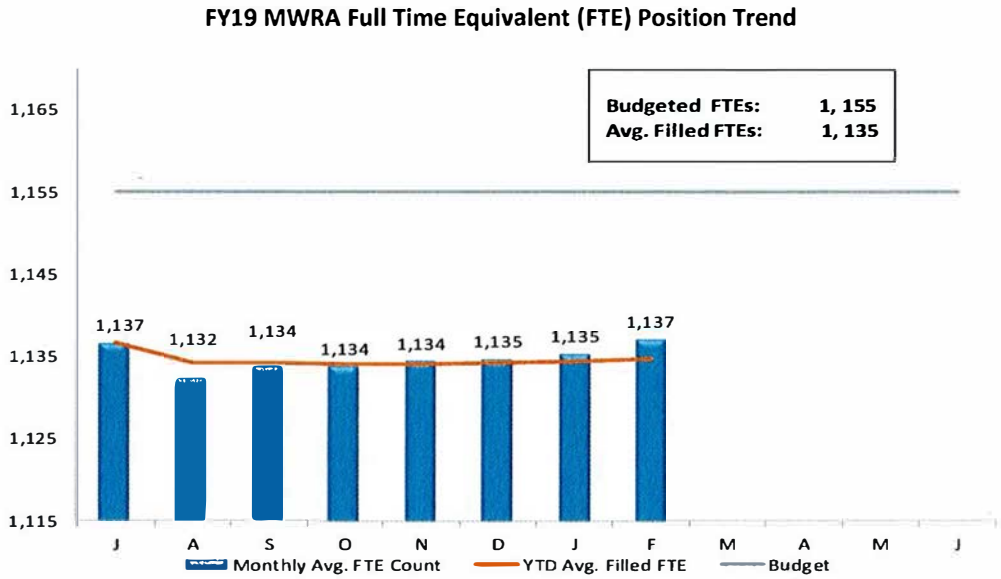
Lower than budgeted spending for Wages and Salaries, Maintenance, Fringe Benefits, Other Materials, and Professional Services were partially offset by higher spending for Utilities, Other Services, Overtime, Chemicals, Worker's Compensation, and Training & Meetings.

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



Wages and Salaries

Wages and Salaries are under budget by $3.0 million or 4.3%. Year to date, there have been 20 fewer average FTEs (1,135 versus 1,155 budget) and lower average salaries for new hires versus retirees. The timing of backfilling vacant positions, and lower leave balance accruals also contributed to Regular Pay being under budget.



Maintenance

Maintenance was under budget by $1.1 million or 5.3%, largely driven by Field Operations ($0.9 million) and Deer Island ($0.3 million). Much of the underspending in Field Operations is due to the timing delays for projects that will be completed later in FY19 than budgeted or due to the shift of projects from the CEB to the CIP after reassessing the scope and costs. Underspending at Deer Island is primarily due to the timing delays in FY19 for numerous smaller, planned projects and purchases that will be completed later in FY19 than budgeted.

Fringe Benefits

Fringe Benefit spending was lower than budget by $1.0 million or 6.7%. This is primarily driven by lower Health Insurance costs of $0.9 million due to fewer employees and retirees participating in health insurance plans, the change to the ratio of employee contribution for past employees versus new hires that contribute at a higher percentage, and change from family to individual plans which are less costly.

Other Materials

Other Materials were under budget by $0.9 million or 23.6%, largely driven by the timing of purchases related to Computer Hardware and Equipment/Furniture. This is offset by overspending for Lab and Testing Supplies in the Department of Laboratory Services, Postage, and Work Clothes in Operations.

Professional Services

Professional Services were under budget by $0.9 million or 18.8%. The overall underspending year-to-date is due to Other Professional Services in Human Resources, Law, Operations, and Finance; Computer System Consultants in MIS; Engineering Services in Operations; Legal Services in Law and Human Resources; and Lab Testing and Analysis in EnQual Wastewater and Lab Services.

Utilities

Utilities were overspent by $1.5 million or 10.3%. Electricity overspending of $1.5 million is driven by Deer Island ($1.1 million), due to new contract pricing retroactive to November, 2018. In addition, there was higher spending in Wastewater Operations ($0.2 million) due to pumping during many wet weather events and in Water Operations ($0.2 million) due to testing of the Wachusett Aqueduct Pumping Station.

Other Services

Other Services were over budget by $0.7 million or 4.4%. The main area of overspending was for Sludge Pelletization ($1.0 million) due to higher year-to-date quantities. This overage was offset by lower spending for Telephones ($0.2 million) in MIS and Field Operations and in Other Services ($0.2 million) for a number of services, including the switch from renting modems to purchasing them for the Contaminant Monitoring System in Water Quality Assurance; remediation projects managed by Real Property/Environmental Management; and timing of Technical Assistance for Lead issues in Planning.

Overtime

Overtime expenses were higher than budget by $0.5 million or 15.4%. The over spending for the fiscal year was mainly in Wastewater Operations due to wet weather events.

Chemicals

Chemicals were higher than budget by $0.3 million or 4.7%. The majority of the variance for Chemicals was the result of higher Sodium Hypochlorite usage at Deer Island and Wastewater Operations due to wet weather; higher Activated Carbon at Nut Island Headworks and Braintree/Weymouth Intermediate Pump Station; higher Ferric Chloride at Deer Island and Clinton; higher Sodium Bisulfite usage at Deer Island and in Wastewater Operations; and higher Sodium Hypochlorite at the Carroll Water Treatment Plant due to higher usage of Wachusett Reservoir water versus the higher quality water from the Quabbin Reservoir, which required higher dosages to disinfect the water. This is offset by lower spending for Soda Ash at Carroll Water Treatment Plant and lower Hydrogen Peroxide at Deer Island. Through February, Deer Island flows are 12.3% greater than budget and the Carroll Plant flows are 3.2% less than budgeted.

Worker's Compensation

Worker's Compensation expenses were higher than budget by $0.2 million or 12.9%. The higher expenses were primarily due to higher compensation payments and net reserves changes ($245,000) and medical payments and net reserve changes ($9,000). This is offset by lower administrative expenses of ($46,000).

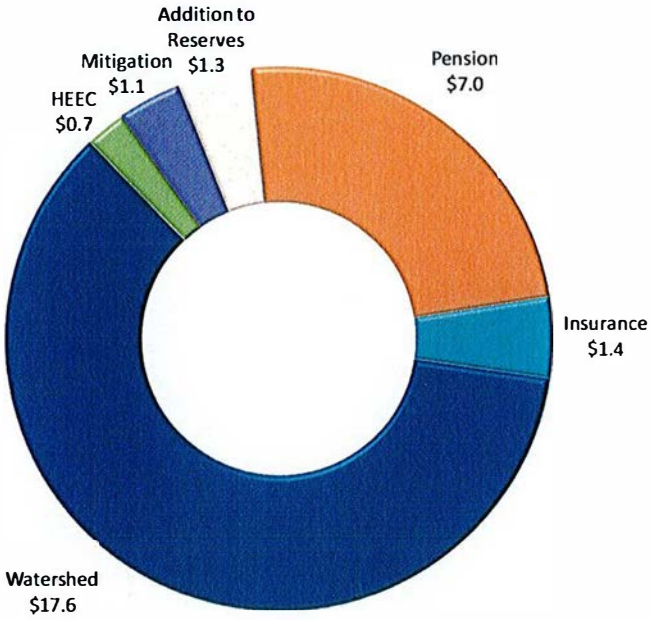
Training & Meetings

Training & Meetings expenses were slightly higher than budgeted by $18,000 or 6.9% in Operations Administration and MIS.

Indirect Expenses

Year-to-date Indirect Expenses totaled $29.0 million, which is $0.5 million or 1.5% under budget. There are variances within the lines that comprise Indirect Expenses, including lower HEEC cable costs and Watershed costs. HEEC charges are under budget by $0.2 million for the low voltage switchgear upgrades. Watershed costs are lower than budget by $0.2 million due to an over-accrual at the end of FY18 on Watershed operating expenses. Staff typically need to close the fiscal year prior to receiving the final invoice from DCR, so an estimated amount is accrued based on recent history.

FY19 Year-to-date Indirect Expenses-YTD
(in millions)

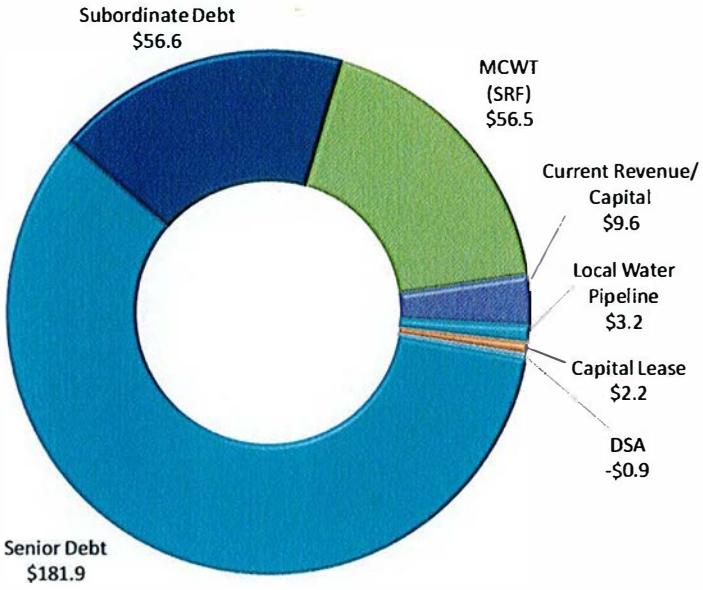


Capital Financing

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

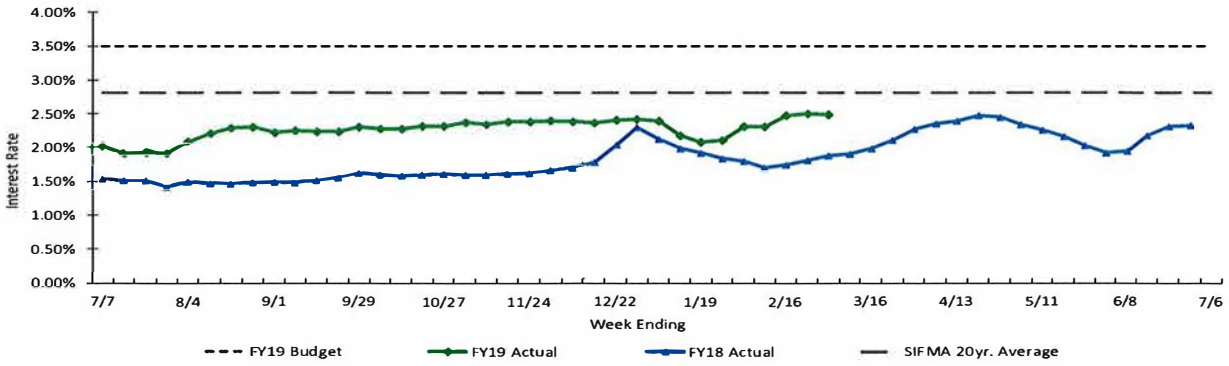
Year-to-date Capital Financing expenses for FY19 totaled $314.5 million, which is right on budget after the transfer of $5.5 million of year-to-date surplus to the Defeasance Account. The surplus is primarily attributable to short-term variable rates. As in the past, staff have already identified candidates for the proposed FY19 defeasance which will have favorable impacts in the FY20-23 period.

Year-to-date FY19 Capital Finance
(in millions)



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

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



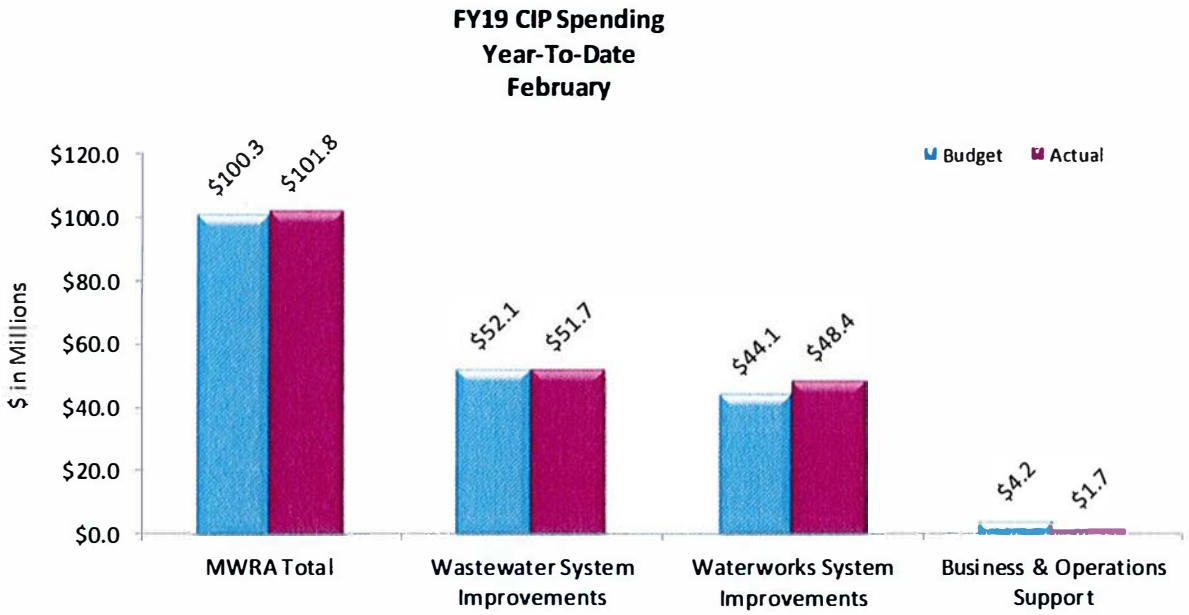
Revenue & Income

Year-to-date Revenues of $519.7 million were over budget by $2.4 million or 0.5%. Investment income was over budget by $1.7 million due to favorable returns on investment income (average short-term rates were higher than budgeted: 2.37% vs. 1.75%). In addition, there were favorable variances on the income from the disposal of equipment ($0.4 million), and for Miscellaneous Revenue ($0.2 million).

FY19 Capital Improvement Program

Capital expenditures in Fiscal Year 2019 through February total $101.8 million, $1.4 million or 1.4% over budget.

After accounting for programs which are not directly under MWRA's control, most notably the Inflow and Infiltration (I/I) grant/loan program, the Local Water System Assistance loan program, and the community managed Combined Sewer Overflow (CSOs) projects, capital spending totaled $61.1 million, $17.1 million or 21.9% under budget.



Overall, CIP spending reflects the overspending in Waterworks Improvements ($4.3 million) offset by underspending in Business and Operations Support ($2.5 million) and Wastewater Improvements ($0.4 million). Major variances in Waterworks are primarily due to greater than anticipated community requests for loans as well as contractor progress on the Section 56 Pipe Demolition Construction, Southern Extra High (SEH) Section 111 Construction Phase 2, Northern Intermediate High (NIH) Section 89 & 29 Construction Phase 1C, Wachusett Aqueduct Pumping Station, timing of watershed land purchases, partially offset by delay in notice to proceed and MBTA crossing issues for Southern Extra High (SEH) Section 111 Construction 3, Bellevue Tank 2/Turkey Hill Painting contract awarded less than budget and additional structural repairs, and Maintenance Garage/Washbay/Storage Building due to delay in schedule.

Wastewater variances are primarily due to construction delays for the Chelsea Creek Headworks Upgrades for Channel 1 work, odor control equipment delivery and redesign of lower roofs, Somerville Marginal In-System Storage project due to delay in Somerville design and construction awards, DI HVAC Equipment Replacement due to schedule change, Winthrop Terminal Facility Variable Frequency Drive (VFD) Replacement due to motor commissioning testing issue, Alewife Brook Pump Station Rehabilitation due to timing of final work, and Residuals Electrical and

Mechanical Upgrades due to revised scope and schedule, partially offset by greater than anticipated community requests for grants and loans for the I/I Local Financial Assistance Program, contractor progress for the Gravity Thickener Rehabilitation contract, and work scheduled for FY18 that was completed in FY19 for the Reading Extension Sewer contract.

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

$ in Millions	Budget	Actuals	$ Var.	% Var.
Wastewater System Improvements				
Interception & Pumping	27.6	17.1	(10.5)	-38.2%
Treatment	6.6	6.6	0.0	0.3%
Residuals	1.3	0.4	(0.9)	-66.5%
CSO	2.2	0.9	(1.3)	-60.6%
Other	14.4	26.7	12.3	85.4%
Total Wastewater System Improvements	**$52.1**	**$51.7**	**($0.4)**	**-0.8%**
Waterworks System Improvements				
Drinking Water Quality Improvements	1.1	0.6	(0.5)	-42.5%
Transmission	8.1	7.4	(0.7)	-8.8%
Distribution & Pumping	23.3	24.9	1.6	6.9%
Other	11.6	15.5	3.9	34.0%
Total Waterworks System Improvements	**$44.1**	**$48.4**	**$4.3**	**9.9%**
Business & Operations Support	**$4.2**	**$1.7**	**($2.5)**	**-60.2%**
Total MWRA	**$100.3**	**$101.8**	**$1.4**	**1.4%**

Totals may not add due to rounding

FY19 Year-to-date Spending by Program:

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

Other Wastewater: Net overspending of $12.3 million

- $12.3 million for Community I/I due to greater than budgeted requests for grants and loans.

Interception & Pumping: Net underspending of $10.5 million

- $9.2 million for Chelsea Creek Headworks Upgrades Construction due to delays for Channel 1 work, odor control equipment delivery, and redesign of lower roofs.
- $0.6 million for Alewife Brook Pumping Station construction due to timing of final work.
- $0.4 million for Nut Island Odor Control and HVAC Design due to delay in completion of design documents.
- $0.4 million for Wastewater Metering Planning/Study/Design due to police details and temporary meter work were less than anticipated.
- $0.4 million for Remote Headworks and Deer Island Shaft Study due to delay in notice to proceed.
- This underspending was partially offset by $0.4 million for Reading Extension Sewer and $0.3 million for Prison Point Piping Rehabilitation for FY18 scheduled work that was completed in FY19.

Other Waterworks: Net overspending of $3.9 million

- $6.2 million for the Local Water System Assistance Program due to greater than anticipated loan requests, partially offset by $1.9 million for Bellevue 2 and Turkey Hill Painting/Improvements contract being awarded less than budgeted and additional structural repairs needed and $0.3 million for a delay in the notice to proceed of the Cosgrove Intake Roof Repair contract.

Water Distribution and Pumping: Net overspending of $1.6 million

- Overspending of $1.7 million for Section 56 Pipe Demolition, $1.7 million for Southern Extra High (SEH) Section 111 Construction 2 and $0.2 million for Construction 1, $0.4 million for Northern Intermediate High (NIH) Section 89 & 29 Phase 1C, $0.1M for Phase 1B, and $0.1 million for Phase 2 Construction due to contractor progress, and $0.3 million for Section 50/57 Water and Sections 21/20/10 Sewer Design ESDC/REI and $0.2 million NIH Section 89 & 29 Replacement Design due to consultant progress of work.
- This overspending was partially offset by underspending of $1.9 million for SEH Construction 3 due to delay in notice to proceed and issue with MBTA crossing, $0.5 million for Section 23, 24, 47 Final Design CA/RI due to pending City of Newton MOA for pipe replacement and delayed gas line relocation, $0.4 million for Peabody Pipeline Design/ESDC due to project being terminated, and $0.2 million for Section 14 Water Main Relocation (Malden) due to FY19 scheduled work completed in FY18.

Business & Operations Support: Net underspending of $2.5 million

- $1.0 million for As-Needed Technical Assistance due to timing of task order work, $0.1 million for the Maximo Upgrade due to timing of final work, and $1.2 million for timing of MIS initiatives.

Combined Sewer Overflow: Net underspending of $1.3 million

- $1.4 million for Somerville Marginal In-System Storage due to the delay of the City of Somerville design and construction awards.

Residuals: Net underspending of $0.9 million

- Underspending of $1.0 million for Electrical and Mechanical Improvements due to delay in award due to combining electrical and mechanical contracts and adding drum dryer replacements to scope of work, partially offset by $0.1 million for Sludge Tank and Silo Coating due to work scheduled for FY18 completed in FY19.

Waterworks Transmission: Net underspending of $0.7 million

- $1.1 million for Maintenance Garage/Wash Bay/Storage Building for schedule delay, $0.3 million for Commonwealth Avenue Pumping Station Design Construction Administration/Resident Inspection due to CA/RI delay pending award of construction, and $0.2 million for WASM 3 MEPA/Design/CA/RI for test pit work that was delayed.
- This underspending was partially offset by overspending of $0.6 million for timing of Watershed Land purchases, $0.4 million for Rosemary Brook Siphon Building Repair for FY18 work invoiced in FY19, and $0.4 million for Wachusett Aqueduct Pumping Station Construction due to contractor progress.

Drinking Water Quality Improvements: Net underspending of $0.5 million

- $0.4 million for timing of task order work and $0.1 million for the Marlborough Maintenance Facility due to work scheduled in FY19 completed in FY18, partially offset by $0.1 million for progress for Liquid Oxygen Storage Yard Canopy work.

Wastewater Treatment: Net overspending of $0.1 million

- $2.4 million for Gravity Thickener Rehabilitation due to contractor progress, partially offset by underspending of $0.8 million for HVAC Equipment Replacement Construction due to schedule change and project being re-scoped, $0.7 million for Winthrop Terminal Facility VFD Replacement Construction due to motor commissioning testing problem, 0.6 million for Radio Repeater System Upgrade 1 due to the delayed award, and $0.4 million for Clinton Treatment Plant Roof Rehabilitation due to the delayed notice to proceed.

Construction Fund Balance

The construction fund balance was $88.9 million as of the end of February. Commercial Paper/Revolving Loan availability was $222 million to fund construction projects.

ATTACHMENTS:

Attachment 1 – Variance Summary February 2019
Attachment 2 – Current Expense Variance Explanations
Attachment 3 – Capital Improvement Program Variance Explanations

ATTACHMENT 1
FY19 Actuals vs. FY19 Budget

	February 2019 Year-to-Date				
	Period 8 YTD Budget	Period 8 YTD Actual	Period 8 YTD Variance	%	FY19 Approved
EXPENSES					
WAGES AND SALARIES	$ 70,282,479	$ 67,242,960	$ (3,039,519)	-4.3%	$ 107,032,021
OVERTIME	3,026,723	3,491,951	465,228	15.4%	4,447,554
FRINGE BENEFITS	14,186,017	13,233,107	(952,910)	-6.7%	21,173,571
WORKERS' COMPENSATION	1,615,073	1,822,873	207,800	12.9%	2,422,609
CHEMICALS	7,279,788	7,618,906	339,118	4.7%	10,830,452
ENERGY AND UTILITIES	14,909,098	16,438,620	1,529,522	10.3%	22,868,632
MAINTENANCE	20,698,761	19,610,304	(1,088,457)	-5.3%	32,258,727
TRAINING AND MEETINGS	263,337	281,509	18,172	6.9%	455,770
PROFESSIONAL SERVICES	4,794,852	3,894,762	(900,090)	-18.8%	7,675,976
OTHER MATERIALS	3,854,935	2,945,539	(909,396)	-23.6%	7,381,098
OTHER SERVICES	15,268,467	15,934,102	665,635	4.4%	23,065,411
TOTAL DIRECT EXPENSES	**$ 156,179,530**	**$ 152,514,633**	**$ (3,664,900)**	**-2.3%**	**$ 239,611,821**
INSURANCE	$ 1,412,828	$ 1,397,122	$ (15,706)	-1.1%	$ 2,099,064
WATERSHED/PILOT	17,773,556	17,560,952	(212,604)	-1.2%	26,406,427
HEEC PAYMENT	924,552	699,504	(225,048)	-24.3%	1,386,832
MITIGATION	1,086,523	1,086,523	-	0.0%	1,614,262
ADDITIONS TO RESERVES	1,266,598	1,266,598	-	0.0%	1,881,797
RETIREMENT FUND	7,000,000	7,000,000	-	0.0%	7,000,000
POST EMPLOYEE BENEFITS	-	-	-	---	5,574,152
TOTAL INDIRECT EXPENSES	**$ 29,464,057**	**$ 29,010,699**	**$ (453,358)**	**-1.5%**	**$ 45,962,534**
STATE REVOLVING FUND	$ 56,975,821	$ 56,456,712	$ (519,109)	-0.9%	$ 89,380,363
SENIOR DEBT	181,943,326	181,943,326	-	0.0%	272,633,982
CORD FUND	-	-	-	---	-
DEBT SERVICE ASSISTANCE	(944,726)	(944,726)	-	0.0%	(944,726)
CURRENT REVENUE/CAPITAL	9,557,687	9,557,687	-	0.0%	14,199,991
SUBORDINATE MWRA DEBT	61,596,165	61,596,165	-	0.0%	92,032,292
LOCAL WATER PIPELINE CP	3,197,382	3,197,382	-	0.0%	4,750,396
CAPITAL LEASE	2,165,329	2,165,329	-	0.0%	3,217,060
DEBT PREPAYMENT	-	-	-	---	7,100,000
VARIABLE DEBT	-	(4,990,188)	(4,990,188)	---	-
HEEC CABLE CAPACITY RESERV	-	-	-	---	-
DEFEASANCE ACCOUNT	-	5,509,297	5,509,297	---	-
TOTAL DEBT SERVICE	**$ 314,490,984**	**$ 314,490,984**	**$ -**	**0.0%**	**$ 482,369,358**
TOTAL EXPENSES	**$ 500,134,571**	**$ 496,016,316**	**$ (4,118,258)**	**-0.8%**	**$ 767,943,713**
REVENUE & INCOME					
RATE REVENUE	$ 497,432,250	$ 497,432,250	$ -	0.0%	$ 739,042,200
OTHER USER CHARGES	6,424,957	6,496,371	71,414	1.1%	9,328,768
OTHER REVENUE	4,644,389	5,277,334	632,945	13.6%	6,013,635
RATE STABILIZATION	-	-	-	---	-
INVESTMENT INCOME	8,807,831	10,494,272	1,686,441	19.1%	13,559,110
TOTAL REVENUE & INCOME	**$ 517,309,427**	**$ 519,700,227**	**$ 2,390,799**	**0.5%**	**$ 767,943,713**

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY19 Budget YTD February	FY19 Actuals YTD February	FY19 YTD Actual vs. FY19 Budget		Explanations
			$	%	
Direct Expenses					
Wages & Salaries	70,282,479	67,242,960	(3,039,518)	-4.3%	Wages and Salaries are under budget by $3.0 million. Year to date, there have been 20 fewer average FTEs (1,135 versus 1,155 budget), lower average new hire salaries versus retirees, the timing of backfilling vacant positions, and lower leave balance accruals contributed to Regular Pay being under budget.
Overtime	3,026,723	3,491,951	465,227	15.4%	Higher spending mainly in **Wastewater Operations** for wet weather events.
Fringe Benefits	14,186,017	13,233,107	(952,910)	-6.7%	Lower than budget mainly in **Health Insurance** of $882,000, due to fewer than budgeted participants in health insurance plans, increased contribution by external new hires vs. lower contribution rates of staff retiring, and the shift from family to individual plans which are less expensive.
Worker's Compensation	1,615,073	1,822,873	207,800	12.9%	The higher expenses were due to unfavorable budget variances in **Compensation** payments and reserves of $245,000 and **Medical** payments and reserves of $9,000, offset by a favorable budget variance in **Administrative Expenses** of $46,000. Due to the uncertainties of when spending will happen, the budget is spread evenly through out the year.

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY19 Budget YTD February	FY19 Actuals YTD February	FY19 YTD Actual vs. FY19 Budget		Explanations
			$	%	
Chemicals	7,279,788	7,618,906	339,117	4.7%	Overspending for **Sodium Hypochlorite** of $242,000; DITP & Wastewater Ops due to wet weather and at CWTP due to rainy fiscal year, we have been using more water from Wachusett Reservoir vs. the higher quality water from Quabbin Reservoir, which has required higher dosing to disinfect the water; **Ferric Chloride** of $224,000 at DITP and Clinton; **Activated Carbon** of $162,000 for the unbudgeted replacement of carbon at Nut Island Headworks and Braintree Weymouth IPS for odor control; **Sodium Bisulfite** of $76,000 at DITP and Wastewater Ops. This is offset by underspending in **Soda Ash** of $205,000 at CWTP and Clinton; and **Hydrogen Peroxide** of $127,000 at DITP. DITP flows are 12.3% higher than the budget and CWTP flows are 3.2% less than the budget through February It is important to note that Chemicals variances are also based on deliveries which in general reflect the usage patterns. However, the timing of deliveries is an important factor.
Utilities	14,909,098	16,438,620	1,529,521	10.3%	Overspending in **Electricity** of $1.5 million primarily at DITP ($1.1 million) and Field Operatoins ($397,000) due to pricing; **Diesel Fuel** of $81,000 in Wastewater Ops and at DI due to timing of deliveries.

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY19 Budget YTD February	FY19 Actuals YTD February	FY19 YTD Actual vs. FY19 Budget		Explanations
			$	%	
Maintenance	20,698,761	19,610,304	(1,088,457)	-5.3%	Services were underspent by $681,000 and Materials were underspent by $407,000. ***Services:*** Underspending in **Building & Grounds Services** of $665,000 is driven by FOD ($722,000); **Pipeline Services** of $145,000 driven by Metro Maintenance for the timing of manhole rehab work ($175,000); and **Specialized Equipment Services** of $101,000 driven by Emergency Preparedness ($120,000). These are offset by overspending in **P&M Services** of $226,000 driven by DITP ($285,000). ***Materials:*** Underspending in **P&M Matierials** of $384,000 driven by Deer Island ($339,000) and Water Operations ($255,000), and offset by overspending in Metro Maintenance ($137,000) and FOD Admin ($50,000); **Electrical Materials** of $336,000 driven by Deer Island ($220,000) and Metro Maintenance ($115,000); **HVAC Materials** of $197,000 driven by Deer Island ($214,000).
Training & Meetings	263,337	281,509	18,172	6.9%	Minor overspending in Operations and Administration.
Professional Services	4,794,852	3,894,762	(900,091)	-18.8%	Underspending in **Other Professional Services** of $345,000 in HR for Training and the Pay Equity Study, Law, Operations, and Finance; **Computer System Consultants** of $216,000 in MIS; **Engineering Services** of $142,000 in Operations primarily at Reservoir Ops for timing of dam asset maintenance plans and DITP for timing of study of biosolids exemptions for MWRA pellets as relative to MDAR regulations; **Legal Services** of $142,000 in Law and HR; and **Lab & Testing Analysis** of $119,000 in EnQual Wastewater and Lab Services.

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY19 Budget YTD February	FY19 Actuals YTD February	FY19 YTD Actual vs. FY19 Budget		Explanations
			$	%	
Other Materials	3,854,935	2,945,539	(909,396)	-23.6%	Lower than budgeted spending in **Computer Hardware** of $882,000 in MIS for timing of the roll out of PC replacements; **Equipment/Furniture** of $207,000 in Operations for timing of water quality equipment; and furniture at DITP. This is offset by higher than budgeted spending in **Lab & Testing Supplies** of $83,000 in Laboratory Services; **Postage** of $63,000 for timing of replenishment of the postage meter in the mailrooms; and **Work Clothes** of $27,000 in Operations
Other Services	15,268,467	15,934,102	665,635	4.4%	Higher than budgeted spending for **Sludge Pelletization** of $1.0 million due to higher year-to-date quantities. This is offset by lower spending for **Telephone/Data Services** of $206,000 in MIS and FOD, and **Other Services** of $168,000 for a number of services, including the switch from renting modems to purchasing them for the Contaminant Monitoring System in Water Quality Assurance; remediation projects managed by Real Property/Environmental Management; and timing of Technical Assistance for Lead issues in Planning.
Total Direct Expenses	**156,179,530**	**152,514,633**	**(3,664,900)**	**-2.3%**	

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY19 Budget YTD February	FY19 Actuals YTD February	FY19 YTD Actual vs. FY19 Budget		Explanations
			$	%	
Indirect Expenses					
Insurance	1,412,828	1,397,122	(15,706)	-1.1%	Higher claims than budgeted of $23,000, offset by lower premiums of $39,000.
Watershed/PILOT	17,773,556	17,560,952	(212,604)	-1.2%	Lower Watershed Reimbursement of $213,000 due to over accrual at the end of FY18 as compared to the actual amount paid in the first quarter of FY19.
HEEC Payment	924,552	699,504	(225,048)	-24.3%	Lower than budgeted spending on special projects related to the HEEC cable.
Mitigation	1,086,523	1,086,523	-	0.0%	
Addition to Reserves	1,266,598	1,266,598	-	0.0%	
Pension Expense	7,000,000	7,000,000	-	0.0%	
Post Employee Benefits	-	-	-		
Total Indirect Expenses	**29,464,057**	**29,010,699**	**(453,358)**	**-1.5%**	
Debt Service					
Debt Service	315,435,710	315,435,710	-	0.0%	$5.5 million for lower than budgeted variable rate, and a combination of lower cost of borrowing and assumed versus actual borrowing terms for SRF funds.
Debt Service Assistance	(944,726)	(944,726)	-	0.0%	
Total Debt Service Expenses	**314,490,984**	**314,490,984**	**-**	**0.0%**	
Total Expenses	**500,134,571**	**496,016,316**	**(4,118,258)**	**-0.8%**	

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY19 Budget YTD February	FY19 Actuals YTD February	FY19 YTD Actual vs. FY19 Budget		Explanations
			$	%	
Revenue & Income					
Rate Revenue	497,432,250	497,432,250	-	0.0%	
Other User Charges	6,424,957	6,496,370	71,413	1.1%	Higher DITP water costs of $85,000.
Other Revenue	4,644,389	5,277,334	632,945	13.6%	$390,000 for disposal of surplus materials and Miscellaneous Revenue of $192,000 primarily associated with worker's compensation reimbursement for older claims.
Investment Income	8,807,831	10,494,272	1,686,441	19.1%	Investment Income is over budget mostly due to short term rates higher than budget (2.37% vs.1.75% budget).
Total Revenue	**517,309,427**	**519,700,226**	**2,390,799**	**0.5%**	
Net Revenue in Excess of Expenses	**17,174,856**	**23,683,910**	**6,509,057**		

ATTACHMENT 3
FY19 CIP Year-to-Date Variance Report (000's)

	FY19 Budget YTD February	FY19 Actuals YTD February	YTD Actuals vs. Budget		Explanations
			$	%	
Wastewater					
Interception & Pumping (I&P)	$27,606	$17,056	($10,550)	-38.2%	Underspending Chelsea Creek Headworks Upgrades - Construction and REI: $9.4M (due to timing of odor control equipment delivery, delay in commissioning channel 1, and redesign of lower roofs) Alewife Brook Pump Station Rehab - Construction: $619k (due to timing of final work) Nut Island Odor Control & HVAC Design/CA/REI: $403k (delay in completion of design documents) Remote Headworks & Deer Island Shaft Study: $371k (schedule shift) Wastewater Meter System Planning/Study/Design: $357k (due to police details and temporary meter work were less than anticipated) Wastewater Central Monitoring Design and Programming Services, and Equipment/Hardware: $277k (timing of work and purchases) Offset Overspending Interceptor Renewal 1, Reading Extension Sewer - Construction: $374k, Prison Point Pipeline Rehabilitation - Design/CA/RI: $262k and DeLauri Pump Station Screens & Security Upgrades: $189k (work scheduled for FY18 performed in FY19) Alewife Brook Pump Station Final Design/CA/REI: $121k (greater than anticipated resident engineering services)
Treatment	$6,566	$6,586	$21	0.3%	Overspending Gravity Thickener Rehab: $2.4M (contractor progress) Phosphorus Reduction - Construction: $170k (work scheduled for FY18 performed in FY19) Offset Underspending HVAC Equipment Replacement - Construction: $804k (contract being re-scoped) WTF VFD Replacement - Construction: $721k (due to motor commissioning testing problem) Clinton Roofing Rehabilitation: $370k (schedule shift) Radio Repeater System Upgrades - Phase 1: $250k (award delayed and was less than budgeted)

ATTACHMENT 3
FY19 CIP Year-to-Date Variance Report (000's)

	FY19 Budget YTD February	FY19 Actuals YTD February	YTD Actuals vs. Budget		Explanations
			$	%	
Residuals	$1,312	$439	($872)	-66.5%	Underspending Electrical Improvements $538k and Mechanical Improvements $450k (scope of work incorporated into Electrical, Mechanical, & Drum Replacements contract and schedule shift) Offset Overspending Sludge Tank & Silo Coating: $115k (due to work scheduled for FY18 completed in FY19)
CSO	$2,182	$859	($1,322)	-60.6%	Underspending Somerville Marginal In-System Storage: $1.4M (shift in Somerville design and construction schedule) Offset Overspending CSO Performance Assessment: $120k (timing of executed task orders)
Other Wastewater	$14,426	$26,739	$12,313	85.4%	Overspending I/I Local Financial Assistance: $12.3M (greater than budgeted requests for grants and loans)
Total Wastewater	**$52,091**	**$51,680**	**($410)**	**-0.8%**	
Waterworks					
Drinking Water Quality Improvements	$1,101	$633	($468)	-42.5%	Underspending Technical Assistance: $435k (due to timing of task order work)
Transmission	$8,086	$7,373	($713)	-8.8%	Underspending Maintenance Garage/Wash Bay/Storage Building: $1.2M (schedule shift) Commonwealth Avenue Pump Station Improvements - Design/CA/RI: $323k (CA & RI services delayed pending award of construction contract) WASM 3 - MEPA/Design/CA/RI: $172k (test pits work delayed) Shaft 12 Isolation Gates - Design CA/RI: $119k (work scheduled for FY19 performed in FY18) Offset Overspending Watershed Land Acquisition: $600k (timing of land purchases) Wachusett Aqueduct Pump Station - Construction: $405k (due to project progress) Rosemary Brook Siphon Building Repair: $386k (timing of final payment)

ATTACHMENT 3
FY19 CIP Year-to-Date Variance Report (000's)

	FY19 Budget YTD February	FY19 Actuals YTD February	YTD Actuals vs. Budget		Explanations
			$	%	
Distribution & Pumping	$23,322	$24,921	$1,599	6.9%	Overspending NHS - Revere & Malden Pipeline Section 56 Pipe Demolition - Construction: $1.7M, NIH Section 89/29 Redundancy Phase 1B and 1C and Phase 2 : $633k, Section 89/29 Replacement - Design: $220k, and Section 89 & 29 Redundancy - Design: $104k, SEH Redundancy Pipeline Section 111 - Construction 2: $1.7M, and Sections 50 & 57 Water & 21/20/19 Sewer Rehab - Design/CA/RI: $320k, (all due to project progress) Offset Underspending SEH Redundancy Pipeline Section 111 - Construction 3: $1.9M (due to delay in notice to proceed and issue with MBTA crossing) New Connecting Mains CP3 (Sect 23,24,47) - Final Design/CA/RI: $454k (pending City of Newton MOA for pipe replacement and delayed utility relocation) Peabody Pipeline Design/ESDC/REI: $387k (contract terminated) Section 14 Water Pipe Relocation (Malden): $180k (work scheduled for FY19 performed in FY18) SEH Redundancy Pipeline - Phase 1 Design/CA/RI: $134k (work scheduled for FY19 performed in FY18)
Other Waterworks	$11,558	$15,488	$3,930	34.0%	Overspending Local Water Pipeline Financial Assistance Program: $6.2M (greater than budgeted requests for loans) Offset Underspending Bellevue II & Turkey Hill Water Tanks Repainting: $1.9M (award less than budgeted and additional structural repairs needed) Cosgrove Intake Roof Replacement: $320k and Generator Docking Station: $171k (schedule shifts)
Total Waterworks	**$44,067**	**$48,415**	**$4,348**	**9.9%**	
Business & Operations Support					
Total Business & Operations Support	**$4,166**	**$1,660**	**($2,506)**	**-60.2%**	Underspending MIS Projects: $1.3M (due to timing of work) As-Needed Technical Assistance: $998k (due to timing of task order work)
Total MWRA	**$100,323**	**$101,755**	**$1,432**	**1.4%**	

Attachment 4
FY19 Budget vs. FY19 Projection

TOTAL MWRA	FY19 Budget	FY19 Projection	Change FY19 Budget vs FY19 Projection	
			$	%
EXPENSES				
WAGES AND SALARIES	$ 107,032,021	$ 102,619,538	$ (4,412,483)	-4.1%
OVERTIME	4,447,554	5,037,646	590,092	13.3%
FRINGE BENEFITS	21,173,571	19,982,295	(1,191,276)	-5.6%
WORKERS' COMPENSATION	2,422,609	2,422,609	-	0.0%
CHEMICALS	10,830,452	11,051,809	221,357	2.0%
ENERGY AND UTILITIES	22,868,633	23,825,873	957,240	4.2%
MAINTENANCE	32,258,727	32,119,639	(139,088)	-0.4%
TRAINING AND MEETINGS	455,770	454,135	(1,635)	-0.4%
PROFESSIONAL SERVICES	7,675,976	6,967,286	(708,690)	-9.2%
OTHER MATERIALS	7,381,098	7,077,726	(303,372)	-4.1%
OTHER SERVICES	23,065,410	23,953,492	888,082	3.9%
TOTAL DIRECT EXPENSES	**$ 239,611,821**	**$ 235,512,050**	**$ (4,099,771)**	**-1.7%**
INSURANCE	$ 2,099,064	$ 2,067,643	(31,421)	-1.5%
WATERSHED/PILOT	26,406,427	26,406,427	-	0.0%
HEEC PAYMENT	1,386,832	1,203,255	(183,577)	-13.2%
MITIGATION	1,614,262	1,614,262	-	0.0%
ADDITIONS TO RESERVES	1,881,797	1,881,798	1	0.0%
RETIREMENT FUND	7,000,000	7,000,000	-	0.0%
ADDITIONAL PENSION DEPOSIT	-	-	-	
POSTEMPLOYMENT BENEFITS	5,574,152	5,574,152	-	0.0%
TOTAL INDIRECT EXPENSES	**$ 45,962,534**	**$ 45,747,537**	**$ (214,997)**	**-0.5%**
STATE REVOLVING FUND	$ 89,380,358	$ 88,521,835	(858,523)	-1.0%
SENIOR DEBT	272,633,979	272,633,979	0	0.0%
SUBORDINATE DEBT	92,032,294	92,032,294	-	0.0%
LOCAL WATER PIPELINE CP	4,750,393	3,077,647	(1,672,746)	-35.2%
CURRENT REVENUE/CAPITAL	14,200,000	14,200,000	-	0.0%
CAPITAL LEASE	3,217,060	3,217,060	-	0.0%
DEBT PREPAYMENT	7,100,000	7,100,000	-	0.0%
VARIABLE RATE SAVINGS	-	(5,794,432)	(5,794,432)	
DEFEASANCE ACCOUNT	-	-	-	
DEBT SERVICE ASSISTANCE	(944,726)	(944,726)	-	0.0%
TOTAL DEBT SERVICE	**$ 482,369,358**	**$ 474,043,657**	**$ (8,325,701)**	**-1.8%**
TOTAL EXPENSES	**$ 767,943,713**	**$ 755,303,244**	**$ (12,640,469)**	**-1.7%**
REVENUE & INCOME				
RATE REVENUE	$ 739,042,200	$ 739,042,200	-	0.00%
OTHER USER CHARGES	9,328,768	9,328,768	-	0.0%
OTHER REVENUE	6,013,635	6,444,796	431,161	7.2%
RATE STABILIZATION	-	-	-	
INVESTMENT INCOME	13,559,110	15,619,110	2,060,000	15.2%
TOTAL REVENUE & INCOME	**$ 767,943,713**	**$ 770,434,874**	**$ 2,491,161**	**0.3%**
VARIANCE:		$ 15,131,631	$ 15,131,631	

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Main Line Adjustment Project
Fore River Railroad
J.F. White Contracting Co.
Contract FRR32, Change Order 2

COMMITTEE: Administration, Finance & Audit

X VOTE
INFORMATION

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

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

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Change Order 2 to Contract FRR32, Fore River Railroad Main Line Adjustment Project, with J.F. White Contracting Co., for a lump sum credit amount of ($277,515.06), decreasing the contract amount from $2,671,056.64 to $2,393,541.58, and increasing the contract term by 121 days from January 30, 2019 to May 17, 2019.

Further, to authorize the Executive Director to approve additional change orders as may be needed to contract FRR32 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 Fore River Railroad Corporation (FRRC) is a Massachusetts railroad corporation, wholly owned by MWRA, which was acquired in 1987 as part of the purchase of former General Dynamics Quincy Shipyard. The FRRC has been providing freight rail services to the Quincy Point area since 1903 and its current primary customers are MWRA's Pelletizing Plant and Twin Rivers Technologies Manufacturing.

Operations on the railroad are conducted by the Fore River Transportation Corporation under an agreement with the FRRC. Under the terms of the operating agreement, Fore River Transportation Corporation pays the FRRC 50.5% of its gross revenue. The FRRC uses this revenue, along with available funds, to pay for its operating and capital expenses. MWRA was awarded a $500,000 grant from the Massachusetts Department of Transportation's Industrial Rail Access Program for this project. The FRRC's cash flow projections indicated it will have sufficient funds to pay for all project costs not covered by the grant funding.

When the railroad was originally constructed in 1903, the locomotives and railcars were generally 40 to 50 feet long. At that time, the sharp curves necessary to extend the tracks around buildings and other shipyard structures were not a hindrance to operations. As the length of the rail equipment has increased, the sharp curves present an increased risk for derailment. Contract FRR32 includes construction of a new main line track with a more gradual 18° curve, as opposed to the existing 26°, 28° and 30° curves. The new alignment will allow cars up to 89 feet long access to the entire railroad. The work also includes the construction of a new storage track.

This Change Order

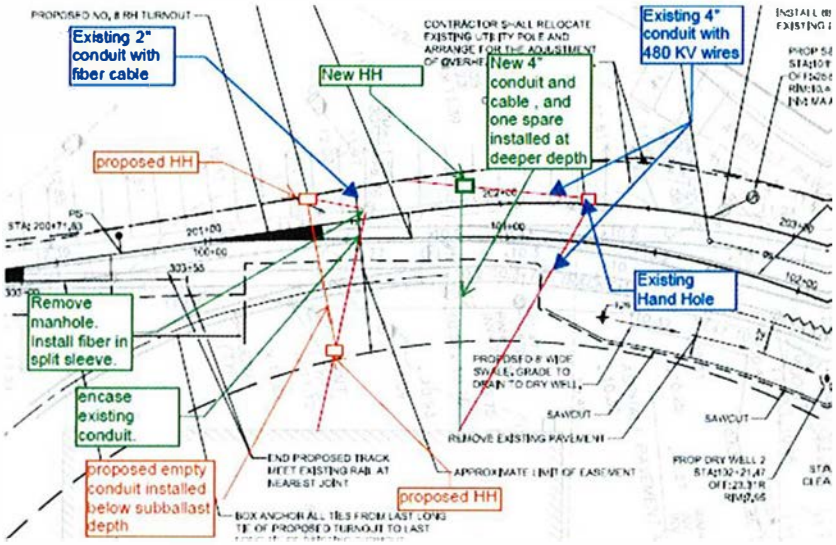
Change Order 2 consists of the following two items.

Test, Remove, Handle, Transport and Dispose of Soils ($357,000.00)

Based on historic soil sample results from the former Fore River Shipyard, the contract included the testing, removal, handling, transporting and disposing of an estimated quantity of 7,000 tons of Group III soil to an asphalt batch recycling facility. Prior to the disposal, the Contractor conducted soil sampling to characterize the conditions. The results of those samples indicated that the contamination levels were lower than anticipated and as result, the soil disposal at the higher cost asphalt batch recycling facility was not required. This Change Order provides for a credit for deleting the Group III soil disposal. Under Change Order 1, disposal costs for the less contaminated soils was added into the contract at a not-to-exceed amount of $225,407.00. For this Change Order, the Contractor and MWRA staff have agreed to a lump sum credit amount of ($357,000.00).

Protection and Relocation of Underground Fiber Optic and 480v Power Cable $79,484.94

During excavation for the new track structure, the Contractor discovered a fiber optic cable and a 480v power cable, which were not shown on the contract drawings. Due to the location and elevation, the fiber optic cable requires protection and the electrical cable must be relocated. The existing fiber optic cable will be encased in concrete and will remain in its current location. The electrical cable will be lowered and relocated to a four-inch conduit running under the tracks. The work will include the installation of an additional two-inch conduit and a four-inch conduit for potential future utilities under the track. Three hand holes will also be installed at part of the work under this change order. The following image details the work to be completed.



This item was identified by MWRA staff as an unforeseen condition. MWRA staff, the Consultant and the Contractor have agreed to an amount not to exceed $79,484.94 for this additional work with an increase to the contract term of 121 days.

CONTRACT SUMMARY:

	Amount	Time	Dated
Original Contract:	$2,437,700.00	190 Days	07/10/18
CHANGE ORDERS			
Change Order 1*	$233,356.64	0 Days	Pending
Change Order 2	($277,515.06)	121 Days	Pending
Total of Change Orders:	($44,158.42)	121 Days	
Adjusted Contract:	$2,393,541.58	311 Days	

*Approved under delegated authority

If Change Order 2 is approved, the cumulative total value of all change orders to this contract will be ($44,158.42) or (1.8%). Work on this contract is approximately 50% complete.

BUDGET/FISCAL IMPACT:

The work under this contract is being funded through a $500,000 grant from the Commonwealth's Industrial Freight Rail Access Program and the FRRC's available funds. Funding for this project is included in the FRRC's approved 2019 Current Expense Budget.

MBE/WBE PARTICIPATION:

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

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 20, 2019
SUBJECT: Lead Market Participant Services for the Deer Island Treatment Plant
Direct Energy Business Marketing, LLC, Amendment 1

COMMITTEE: Administration, Finance & Audit

_____ INFORMATION
_X_ VOTE

Michele S. Gillen
Director of Administration

Carolyn M. Fiore, Deputy Chief Operating Officer
David Duest, Director, Deer Island WWTP
Michael McDonald, Manager, Energy
Preparer/Title

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

MWRA participates in ISO New England's Forward Capacity Market through its Demand Response Program at both the Deer Island and John J. Carroll Treatment Plants. Under this program, MWRA is paid to maintain electric generation capacity that enables the facilities to be taken off of the electric grid within specified time frames during peak demand periods. MWRA currently participates at Deer Island through a sole-source contract with Direct Energy Business Marketing, LLC, which provides Lead Market Participant (LMP) services for a five percent fee.

This four-year contract was approved by the Board of Directors in 2015, under an ISO New England rule structure that excluded MWRA from participating unless it continued to use its existing LMP. Until those rules were changed, effective February 19, 2019, MWRA did not expect to meet the complex program requirements to participate in the forward capacity market going forward. However, the February rule changes have provided a pathway for MWRA's continued participation in this program. Given the structure of the program, which is explained in more detail below, staff are recommending that MWRA extend the current contract with Direct Energy Business Marketing, LLC to continue to provide LMP services for MWRA's Deer Island Treatment Plant for one additional year, from June 1, 2019 through May 31, 2020.

Over the recommended one-year term extension of this purchase order, the total expected revenue stream from participation in the Forward Capacity Market is estimated to be approximately $1,000,000, where ninety percent, or approximately $900,000, of this amount will be paid to MWRA, over a 12-month period, and ten percent, or approximately $100,000, will be retained by Direct Energy Business Marketing, LLC as their fee. MWRA will competitively bid future contracts for participation in the Forward Capacity Market after May 31, 2020.

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Amendment 1 to Purchase Order 1145919, Demand Response Lead Market Participant Services, with Direct Energy Business Marketing, LLC, (Direct Energy) to increase the amount provided to Direct Energy from five percent of the revenue received from ISO New England to ten percent, and to extend the term by one year from June 1, 2019, to May 31, 2020.

BACKGROUND:

The Forward Capacity Market is a long-term power program administered by ISO-New England, which is intended to ensure electric grid adequacy during peak electric demand events. Market participants, such as the MWRA, are paid on a monthly basis to curtail their load during these peak demand periods. The value of the payments is based on a Forward Capacity Auction, which is held three years in advance. MWRA has been participating in Demand Response Programs for approximately 20 years, originally only at Deer Island and then also at the John Carroll Water Treatment Plant.[1] Direct Energy (and its predecessor Hess Corporation) has been providing Lead Market Participant services for the Deer Island Treatment Plant for the last 14 years. In 2015, ISO New England notified MWRA that it did not meet all of the requirements of the Demand Response Program at the Deer Island Treatment Plant, but gave approval for MWRA to continue in the program under a "grandfathered" status, as long as it did not change its Lead Market Participant. With Board of Directors' approval, MWRA entered into a four-year sole-source contract with Direct Energy. This contract is set to expire on May 31, 2019.

DISCUSSION:

Staff have been studying the ISO New England rules for continued Forward Capacity Market participation and had concluded that MWRA's Deer Island back-up power configuration did not meet ISO New England conditions for continued market participation. However, in late December 2018, ISO New England proposed a change to its rules. This rule change, effective on February 19, 2019, allows Deer Island's participation as long as hardware and software are installed to prevent a certain amount of power from being exported back to the grid. MWRA is currently in the process of installing the required equipment with the intent of participating in the market. Given the required obligations of the Forward Capacity Market, and the recent rule change, staff have concluded that the best way to participate in the market for the next year is to continue the existing contract with Direct Energy.

In order to take advantage of future auctions under a competitive bid, separate procurements are required for an interim period between Direct Energy's extension and the forward looking auctions. Moving forward, two competitive contracts are recommended to bridge power years June 1, 2020, to May 31, 2024. This will require awards in 2019 and 2020 and would allow firms with the required capacity to represent the MWRA as an LMP in the ISO-NE market. A contract

[1] MWRA's other Demand Resource (Carroll Water Treatment Plant), is enrolled in the Forward Capacity Market through a Division of Capital Asset Management and Maintenance (DCAMM) Contract.

for power years June 1, 2024 and beyond is the final step in the process that enables the MWRA to fully align ISO-NE's market auctions with an MWRA competitive bidding process. Because the markets are three years in advance, and one year is needed for registration, this bid will require targeting award by the end of 2019.

BUDGET/FISCAL IMPACT:

The projected revenue stream to MWRA over the term of the Direct Energy purchase order is approximately $900,000, spread over 12 months from June 1, 2019, through May 31, 2020. These energy revenues will be included in the FY20 Budget that will be presented in June.

MBE/WBE PARTICIPATION:

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

MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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BOARD OF DIRECTORS' MEETING

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

to be held on

Wednesday, March 20 , 2019

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. Memorandum of Agreement Between the Authority and the City of Newton: Rehabilitation of Sections 23, 24 and 47 Water Mains, Contract 6392 (ref. W B.1)
2. PCR Amendments - March 2019 (ref. P&C A.1)
3. Appointment of Assistant Contracts Manager, Administration Division (ref. P&C A.2)
4. Appointment of Manager, Employment, Human Resources (ref. P&C A.3)
5. Appointment of Senior Program Manager, Engineering and Construction (ref. P&C A.4)
6. Appointment of Program Manager – Data Management, Environmental Quality (ref. P&C A.5)

Approvals (continued)

7. Appointment of Program Manager, Meter Data and Engineering, Planning Department (ref. P&C A.6)

8. Recommendations for Non-Union Pay Equity Adjustments (ref. P&C A.7)

B. Contract Awards

1. Centrifuge Services at the Deer Island Treatment Plant: Alfa Laval, Inc., Contract S580 (ref. WW B.1)

2. Combined Heat and Power Study, Deer Island Treatment Plant: Black & Veatch, Contract 6963A (ref, WW B.2)

3. Biosolids Processing Facility Capital Improvements: IPC Lydon, LLC, Contract 7153 (ref. WW B.3)

4. Program Support Services for the Metropolitan Tunnel Redundancy Program: JCK Underground, Inc., Contract 7655 (ref. W C.1)

C. Contract Amendments/Change Orders

1. Southern Extra High Pipeline – Section 111 (Dedham North): P. Gioioso and Sons, Inc., Contract 7504, Change Order 6 (ref. W D.1)

2. Main Line Adjustment Project, Fore River Railroad: J.F. White Contracting Co., Contract FRR32, Change Order 2 (ref. AF&A B.1)

3. Lead Market Participant Services for the Deer Island Treatment Plant: Direct Energy Business Marketing, LLC, Amendment 1 (ref. AF&A B.2)

V. OTHER BUSINESS

VI. CORRESPONDENCE TO THE BOARD

VII. EXECUTIVE SESSION

A. Litigation:

1. MWRA v. Dewberry Engineers, Inc., N.E.L. Corp & Western Surety, Suffolk Sup. Ct. No. 2018-01156-BLS1h: Litigation Strategy

VIII. ADJOURNMENT

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Board of Directors

February 20, 2019

A meeting of the Board of Directors of the Massachusetts Water Resources Authority was held on Wednesday, February 20, 2019 at the Authority headquarters in Charlestown. Vice Chair Carroll presided. Present from the Board were Ms. Wolowicz and Messrs. Cook, Cotter, Flanagan, Foti, Pappastergion, Peña, Vitale and Walsh. Mr. Beaton was absent. Among those present from the Authority staff were Frederick Laskey, Executive Director, Carolyn Francisco Murphy, General Counsel, David Coppes, Chief Operating Officer, Carolyn Fiore, Deputy Chief Operating Officer, Thomas Durkin, Director of Finance, Michele Gillen, Director of Administration, Patterson Riley, Special Assistant for Affirmative Action, and Assistant Secretaries Ria Convery and Kristin MacDougall. The meeting was called to order at 1:02 p.m.

APPROVAL OF JANUARY 16, 2019 MINUTES

Upon a motion duly made and seconded, it was

Voted: to approve the minutes of the Board of Directors' meeting of January 16, 2019 as presented and filed with the records of the meeting.

REPORT OF THE CHAIR

Vice Chair Carroll welcomed Mr. Christopher Cook to the Board of Directors.

REPORT OF THE EXECUTIVE DIRECTOR

Mr. Laskey reported on the FEMA Public Assistance Program Funds that MWRA will be receiving for the March, 2018 nor'easter storm related costs. Mr. Laskey also applauded the generosity of MWRA staff, who held fundraisers to benefit two of their co-workers. Mr. Laskey presented Extraordinary Service Awards on behalf of a committee comprised of MWRA labor and management representatives. Award recipients for 2018 included Louis Collins, Steve Abner and David Finn, for their March 2018 flood response; Oscar Hernandez, for his humanitarian work; Brian Pyburn and Greg Motley, for their leak detection work; and, Kevin DiPerri, Lawrence Didio, Jeffrey Stanton and

Samuel Dowd, for their work on the Clinton Wastewater Treatment Plant redundancy systems.

APPROVALS

Transmittal of the FY2020 Proposed Current Expense Budget to the MWRA Advisory Board

Upon a motion duly made and seconded, it was

Voted: to approve transmittal of the FY20 Proposed Current Expense Budget to the MWRA Advisory Board for its 60 day review and comment period.

Approval of Eightieth Supplemental Bond Resolution

Upon a motion duly made and seconded, it was

Voted: to adopt the Eightieth Supplemental Resolution authorizing the issuance of up to $166,000,000 of Massachusetts Water Resources Authority General Revenue Bonds and Massachusetts Water Resources Authority General Revenue Refunding Bonds and the supporting Issuance Resolution.

Delegation of Authority to Execute Contracts for the Purchase and Supply of Electric Power for the MWRA Interval Accounts

Upon a motion duly made and seconded, it was

Voted: to authorize the Executive Director, on behalf of the Authority, to execute contracts for the supply of electric power to the Interval Accounts, consisting of the Carroll Water Treatment Plant and the larger operations and facility management accounts, with the lowest responsive and responsible bidder, for the period and pricing structure selected, as determined by staff to be in MWRA's best interest, and for a contract supply term not to exceed 36 months. This delegation of authority is necessary because MWRA will be required to notify the selected bidders within a few hours of bid submittal to lock-in the bid prices in a constantly changing market.

Appointment of Proxy for Fore River Railroad Corporation

Upon a motion duly made and seconded, it was

Voted: that the MWRA Board of Directors, as holder of all voting rights of

all the issued and outstanding shares of stock of the Fore River Railroad Corporation, vote to appoint Bethany A. Card, with the power of substitution, to vote as proxy at the next annual meeting and any special meeting of the stockholders for the Fore River Railroad Corporation in accordance with the form of proxy attached hereto and filed with the records of this meeting. In addition, the MWRA Board of Directors directs the proxy to elect the following board members:

David W. Coppes	Carolyn M. Fiore
Frederick A. Laskey	John J. Walsh
Thomas J. Durkin	Michele S. Gillen
Carolyn M. Francisco Murphy	Godfrey O. Ezeigwe
Lisa R. Grollman	Brian Peña

Amendments to the MWRA Regulations for Adjudicatory Proceedings, Enforcement and Administrative Penalties, and Sewer Use

Upon a motion duly made and seconded, it was

Voted: to authorize staff to publish notice of proposed amendments to MWRA's Regulations for Adjudicatory Proceedings (360 CMR 1.00), Enforcement and Administrative Penalties (360 CMR 2.00), and Sewer Use (360 CMR 10.000), as presented and filed with the records of the meeting, in the Massachusetts Register and newspapers for public comment.

Assignment and Assumption of Bid WRA-4115 and Issuance of a New Purchase Order Contract for the Supply and Delivery of Polymer to the Deer Island Treatment Plant, Solenis, LLC

Upon a motion duly made and seconded, it was

Voted: to approve the assignment and assumption of the contract for supply and delivery of polymer to the Deer Island Treatment Plant, from BASF Corporation to Solenis, LLC, and further to authorize the Executive Director, on behalf of the Authority, to execute a new purchase order in an amount not to exceed $344,509.79 to Solenis, LLC, with no increase in price or contract term.

PCR Amendments - February 2019

Upon a motion duly made and seconded, it was

Voted: to approve an amendment to the Position Control Register (PCR) as presented and filed with the records of the meeting.

MWRA Staff Appointments

Upon a motion duly made and seconded, it was

Voted: to approve the following staff appointments:

Warehouse Manager: The appointment of Mr. John Harrington to the position of Warehouse Manager, Southborough (Unit 6, Grade 12) at the recommended salary of $93,910.14 commencing on a date to be determined by the Executive Director;

Program Manager, Water Quality: The appointment of Mr. Joshua Das to the position of Program Manager, Water Quality (Unit 9, Grade 29), in the Environmental Quality Department, at an annual salary of $112,432.84, commencing on a date to be determined by the Executive Director;

Associate Special Assistant for Affirmative Action: The appointment of Ms. Tomeka Cribb-Jones to the position of Associate Special Assistant in the Affirmative Action and Compliance Unit (Non-Union, Grade 14) at an annual salary of $117,300 commencing on a date to be determined by the Executive Director;

Director, Wastewater Operations and Maintenance: The appointment of Mr. Charles Ryan to the position of Director, Wastewater Operations and Maintenance (Non-Union, Grade 15), in the Operations Division, at the annual salary of $145,600, commencing on a date to be determined by the Executive Director;

Director, Metropolitan Operations: The appointment of Mr. Bradley J. Palmer to the position of Director, Metropolitan Operations (Non-Union, Grade 15), in the Operations Division, at the annual salary of $145,600, commencing on a date to be determined by the Executive Director; and

Deputy Director of Waterworks: The appointment of Ms. Valerie Moran to the position of Deputy Director of Waterworks (Non-Union,

Grade 15), in the Operations Division, at the annual salary of $145,600, commencing on a date to be determined by the Executive Director.

Approval of the 2019 Affirmative Action Plan

Upon a motion duly made and seconded, it was

Voted: to approve the Massachusetts Water Resources Authority's Affirmative Action Plan effective for a one-year period-from January 1, 2019 through December 31, 2019.

CONTRACT AWARDS

Dam Safety Compliance and Consulting Services - Repairs, Design and Engineering Services During Construction: GZA Environmental, Inc., Contract 7614

Upon a motion duly made and seconded, it was

Voted: to approve the recommendation of the Consultant Selection Committee to award Contract 7614 to GZA GeoEnvironmental, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute said contract in an amount not to exceed $432,028.54, for a contract term of 52 months from the Notice to Proceed.

Chestnut Hill Emergency Pumping Station Improvements Design and Engineering Services During Construction, Hazen and Sawyer, Contract 7574

Upon a motion duly made and seconded, it was

Voted: to approve the recommendation of the Consultant Selection Committee to award Contract 7574,Chestnut Hill Emergency Pumping Station Improvements Design and Engineering Services During Construction, 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 $2,074,166.81, for a contract term of 66 months from the Notice to Proceed.

Workers' Compensation Third Party Administrator Services: PMA Management Corp. of New England, Contract A618

Upon a motion duly made and seconded, it was

Voted: to approve the recommendation of the Consultant Selection Committee to select PMA Management Corp. of New England to provide

workers' compensation third party administrator services, and authorize the Executive Director, on behalf of the Authority, to execute Contract A618 with PMA Management Corp. of New England in a not-to-exceed amount of $149,025 and a contract term from April 1, 2019 through March 31, 2022.

CONTRACT AMENDMENTS/CHANGE ORDERS

Actuarial Services: The Segal Company, Inc., Contract F248, Amendment No.1

Upon a motion duly made and seconded, it was

Voted: to authorize the Executive Director, on behalf of the Authority, to approve Amendment 1 to Contract F248, Actuarial Services, with The Segal Company, Inc., to increase the contract term by nine months from December 31, 2018 through September 30, 2019, with no increase in cost.

Chelsea Creek Headworks Upgrade, BHD/BEC JV 2015, A Joint Venture, Contract 7161, Change Order 26

Upon a motion duly made and seconded, it was

Voted: to authorize the Executive Director, on behalf of the Authority, to approve Change Order 26 to Contract 7161, Chelsea Creek Headworks Upgrade, with BHD/BEC 2015, A Joint Venture, for an amount not to exceed $375,000.00, increasing the contract amount from $80,372,972.46 to $80,747,972.46, with no increase in contract term.

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

Alewife Brook Pump Station: Stantec Consulting Services, Inc., Contract 7034, Amendment 6

Upon a motion duly made and seconded, it was

Voted: to authorize the Executive Director, on behalf of the Authority, to approve Amendment 6 to Contract 7034, Alewife Brook Pump Station Rehabilitation, with Stantec Consulting Services, Inc., to increase the contract amount by $94,195.74 from $2,169,652.22 to $2,263,847.96 and increase the

contract term by 93 days from November 27, 2019 to February 28, 2020.

Wachusett Aqueduct Pumping Station, BHD/BEC JV 2015, A Joint Venture, Contract 7157, Change Order 55

Upon a motion duly made and seconded, it was

Voted: to authorize the Executive Director, on behalf of the Authority, to approve Change Order 55 to Contract 7157, Wachusett Aqueduct Pumping Station, with BHD/BEC JV 2015, A Joint Venture, for an amount not to exceed $116,949, increasing the contract amount from $50,655,413.03 to $50,772,362.03, with no increase in contract term.

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

EXECUTIVE SESSION

It was moved to enter executive session to discuss litigation and security and thereafter to return to open session solely for the purpose of adjournment. Upon a motion duly made and seconded, a roll call vote was taken in which the members were recorded as follows:

Yes	No	Abstain
Carroll		
Cook		
Cotter		
Flanagan		
Foti		
Pappastergion		
Peña		
Vitale		
Walsh		
Wolowicz		

Voted: to enter executive session for the purpose of discussing strategy

with respect to litigation and real estate, in that such discussions may have a detrimental effect upon the negotiating positions of the Authority.

* * * *

EXECUTIVE SESSION

* * * *

The meeting returned to open session and adjourned at 1:58 p.m.

Approved: March 20, 2019

Attest: _____

Andrew M. Pappastergion, Secretary