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

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

to be held on

Wednesday, April 16, 2014

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

Time: 10:00 a.m.

AGENDA

A. Information

1. Delegated Authority Report – March 2014
2. 2013 Annual Update on New Connections to the MWRA System
3. FY14 Financial Update and Summary as of March 2014

B. Approvals

1. Approval of Standby Bond Purchase and Direct Purchase Agreements

C. Contract Awards

1. Integrated Financial, Procurement and Human Resources/Payroll Management System Maintenance and Support: Infor Global Solutions
2. Citrix Application Virtualization and Mobile Device Management Design and Implementation: IntraSystems, Inc., State Blanket Contract ITC47, WRA2832-Q

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the
Administration, Finance and Audit Committee

March 12, 2014

A meeting of the Administration, Finance and Audit Committee was held on March 12, 2014 at the Authority headquarters in Charlestown. Chairman Barrera presided. Present from the Board were Ms. Wolowicz and Messrs. Carroll, Flanagan, Foti, Pappastergion, Vitale and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Rachel Madden, Michele Gillen, Russ Murray, Mike Delaney, and Bonnie Hale. The meeting was called to order at 10:15 a.m.

Information

Delegated Authority Report – February 2014

There was question and answer on a couple of items on the report. Ms. Madden noted that staff intends implement Mike Hornbrook's suggestion to number the items on future delegated authority reports for ease of reference.

Preliminary Financial Update and Summary as of February 2014

There was a brief review and discussion of the financials.

Approvals

*Acceptance of Grant of Easement from Commonwealth of Massachusetts, Waterworks Operations, Ware Disinfection Facility

The Committee recommended approval of the grant of easement (ref. agenda item B.1).

Contract Awards

*LabWare LIMS Developer– Staff Augmentation: Atlantic Associates, Inc., WRA-3772Q, State Blanket Contract ITS53 Cat1

Staff described the work to be performed under this contract and there was general discussion and question and answer. The Committee recommended approval of the contract award (ref. agenda item C.1).

The meeting adjourned at 10:30 a.m.

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* Approved as recommended at March 12, 2014 Board of Directors meeting.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 16, 2014
SUBJECT: Delegated Authority Report – March 2014

COMMITTEE: Administration, Finance & Audit

X INFORMATION
___ VOTE

Rachel C. Madden
Director, Administration & Finance

Barbie Aylward, Administrator A & F
Joanne Gover, Admin. Systems Coordinator
Preparer/Title

Michele Gillen
Deputy Director, Administration & Finance

RECOMMENDATION:

For information only. Attached is a listing of actions taken by the Executive Director under delegated authority for the period March 1 through March 31, 2014 .

This report is broken down into three sections:

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

BACKGROUND:

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

Construction Contract Awards:

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

Change Orders:

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

Professional Service Contract Awards:

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

Non-Professional Service Contract Awards:

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

Purchase or Lease of Equipment, Materials or Supplies:

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

Amendments:

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

Amendments to the Position Control Register:

Amendments which result only in a change in cost center.

BUDGET/FISCAL IMPACT:

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

CONSTRUCTION/PROFESSIONAL SERVICES DELEGATED AUTHORITY ITEMS MARCH 1 - 31, 2014

No.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT	AMEND/CO	COMPANY	FINANCIAL IMPACT
C-1.	03/03/14	**CHECKING, TESTING, CLEANING AND CALIBRATION SERVICES FOR CONTINUOUS EMISSIONS MONITORING SYSTEM EQUIPMENT DITP** DECREASE ESTIMATED QUANTITIES FOR SCHEDULED AND ON-CALL TESTING, CLEANING AND CALIBRATION SERVICES AND REPLACEMENT PARTS.	S499	1	CK ENVIRONMENTAL, INC.	($35,651.17)
C-2.	03/03/14	**LYNNFIELD/SAUGUS PIPELINES PROJECT** DECREASE ESTIMATED QUANTITIES FOR TRANSPORTATION, HANDLING AND DISPOSAL OF REINFORCED CONCRETE, LABORATORY WATER QUALITY ANALYSES, RELOCATION OF BLOW-OFF VALVE ON A TIME AND MATERIALS BASIS, STANDBY TIME AND EXTENDED WORK HOURS, TRAFFIC CONTROL AND POLICE DETAIL SERVICES; FURNISH AND INSTALL MANUAL AIR RELEASE VALVES IN LIEU OF AUTOMATIC VALVES; REVISE CONNECTION LOCATIONS OF NEW 12-INCH WATER MAIN TO EXISTING 10-INCH AND 12-INCH WATER MAINS.	6584	31	ALBANESE BROTHERS, INC.	($96,882.04)
C-3.	03/10/14	**ALEWIFE BROOK CSO IMPROVEMENTS DESIGN/ENGINEERING SERVICES DURING CONSTRUCTION** ADDITIONAL DESIGN SERVICES TO CHANGE HYDRAULIC-OPERATED GATE AT OUTFALL MWR003 TO AN ELECTRIC-OPERATED GATE; ADDITIONAL DESIGN INVESTIGATIONS FOR ACCESS ALTERNATIVES AT THE RINDGE AVENUE SIPHON; ADDITIONAL HYDRAULIC MODELING ANALYSES.	6952	1	FAY, SPOFFORD & THORNDIKE, LLC	$130,399.00
C-4.	03/21/14	**INTERCEPTOR CONNECTION RELIEF AND FLOATABLES CONTROL AT OUTFALL SOM01A**. DECREASE ESTIMATED QUANTITIES FOR TRAFFIC CONTROL, STORM DEMOBILIZATION/REMOBILIZATION, FIRE WATCH SERVICES.	6953	3	R. ZOPPO CORP.	($28,457.18)
C-5.	03/21/14	**TECHNICAL ASSISTANCE CONSULTANT SERVICES-HAZARDOUS MATERIALS** INCREASE LEVEL OF EFFORT FOR ADDITIONAL PCB SAMPLING AND ANALYSIS AT THE COTTAGE FARM CSO FACILITY, CHELSEA CREEK HEADWORKS AND ALEWIFE BROOK PUMP STATION IN ORDER TO COMPLETE THE DESIGN OF THE PCB ABATEMENT AS REQUIRED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA).	596TA	1	GEOSPHERE ENVIRONMENTAL MANAGEMENT, INC.	$100,000.00
C-6.	03/26/14	**WIND TURBINE MAINTENANCE DEER ISLAND TREATMENT PLANT** DECREASE ESTIMATED QUANTITIES FOR UNSPECIFIED MAINTENANCE, REPLACEMENT PARTS, MARK-UP ON REPLACEMENT PARTS AND FIRE WATCH SERVICES.	S503	2	AERONAUTICA WINDPOWER, LLC	($29,093.46)
C-7.	03/26/14	**COMBUSTION TURBINE GENERATOR MAINTENANCE DEER ISLAND TREATMENT PLANT** DECREASE ESTIMATED QUANTITIES FOR NON-EMERGENCY AND EMERGENCY MAINTENANCE SERVICES, REPLACEMENT PARTS AND AUTHORIZED FACTORY REPRESENTATIVE SERVICES.	S501	4	O'CONNOR CONSTRUCTORS, INC.	($50,374.39)

PURCHASING DELEGATED AUTHORITY ITEMS - March 1 - 31, 2014

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT #	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-1.	3/3/14	**SUPPLY AND DELIVERY OF HYDROGEN PEROXIDE** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE SUPPLY AND DELIVERY OF HYDROGEN PEROXIDE TO THE DEER ISLAND TREATMENT PLANT, FOR A PERIOD OF TWO YEARS.	WRA-3769		MANN DISTRIBUTION, LLC	$748,400.00
P-2.	3/5/14	**ONE GM K1500 PICKUP TRUCK** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR A GM K1500 PICKUP TRUCK. WRA-746 IS A 2004 K2500 EXTENDED CAB PICKUP, WITH APPROXIMATELY 134,000 MILES ON IT AND EXCEEDS THE REPLACEMENT CRITERIA IN BOTH AGE AND MILEAGE ESTABLISHED BY THE AUTHORITY. UPON REPLACEMENT WRA-746 WILL BE CONSIDERED SURPLUS AND DISPOSED OF IN ACCORDANCE WITH MWRA'S SURPLUS PROPERTY POLICY. WRA-746 WILL BE REPLACED WITH THE SMALLER K1500 PICKUP.	WRA-3794Q		LIBERTY CHEVROLET, INC.	$31,979.00
P-3.	3/5/14	**ONE GM K2500 PICKUP TRUCK** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR ONE GM K2500 PICKUP TRUCK. DUE TO THE AGE, MILEAGE AND CONDITION OF WRA-702, FLEET SERVICES HAS DETERMINED THAT IT IS NO LONGER COST EFFECTIVE TO MAINTAIN AND REPAIR THIS VEHICLE AND HAS RECOMMENDED REPLACEMENT. THE EMERGENCY SERVICES UNIT (ESU) STAFF REQUESTED THAT THE EXISTING SUV BE REPLACED WITH A MORE MULTI-PURPOSE VEHICLE. THE VEHICLE NEEDS THE CAPABILITY TO TOW (BOAT, BOOM TRAILER, ESU TRAILER OR ATV) AND CARRY SPILL MATS, BOOMS, VARIOUS TOOLS AND A PORTABLE GENERATOR. UPON REPLACEMENT, WRA-702 WILL BE CONSIDERED SURPLUS AND DISPOSED OF IN ACCORDANCE WITH MWRA'S SURPLUS PROPERTY POLICY.	WRA-3793Q		LIBERTY CHEVROLET, INC.	$34,095.00
P-4.	3/7/14	**ONE GM G2500 CARGO VAN** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR ONE GM G2500 CARGO VAN. STAFF HAVE DETERMINED THAT WRA-275 IS NO LONGER ADEQUATE FOR THE EXTENSIVE DAILY USE THAT TRAC REQUIRES AND MUST BE REPLACED. WRA-275 WILL BE REPLACED WITH A SMALLER G2500 VAN OUTFITTED WITH INTERIOR SHELVING TO HOLD TOOLS AND SAMPLING EQUIPMENT, AND AN INVERTER TO POWER SMALL EQUIPMENT. UPON REPLACEMENT, WRA-275 WILL BE ROTATED WITHIN THE FLEET FOR "LIGHT-DUTY" PURPOSES AND WILL REPLACE A YET-TO-BE-DETERMINED OLDER VEHICLE WHICH IN TURN, WILL BE CONSIDERED SURPLUS AND DISPOSED OF IN ACCORDANCE WITH MWRA'S SURPLUS PROPERTY POLICY.	WRA-3791Q		LIBERTY CHEVROLET, INC.	$42,287.00
P-5.	3/7/14	**SUPPLY AND DELIVERY OF SODA ASH** APPROVAL OF AMENDMENT 1 TO PURCHASE ORDER CONTRACT WRA-3586 FOR THE SUPPLY AND DELIVERY OF SODA ASH TO THE CLINTON WASTEWATER TREATMENT PLANT INCREASING THE CONTRACT AMOUNT FROM $477,000 TO $689,000, WITH NO EXTENSION IN CONTRACT TERM. THE RECOMMENDED INCREASE IN QUANTITIES (400,000 ADDITIONAL POUNDS OF SODA ASH PER YEAR), THAT STAFF BELIEVE SHOULD BE SUFFICIENT TO ENSURE AN UNINTERRUPTED SUPPLY OF SODA ASH THROUGH THE END DATE OF THE CONTRACT.	WRA-3586	1	ASTRO CHEMICALS, INC.	$212,000.00
P-6.	3/14/14	**TWO FLUSH-BACK CONTAINER TRAILERS** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR TWO FLUSH-BACK CONTAINER TRAILERS. THE OPERATIONS DIVISION'S METROPOLITAN WATER PIPELINE MAINTENANCE UNIT MAINTAINS THREE MOBILE PUMP UNITS (MPU'S), WHICH ARE USED IN RESPONSE TO WATER SUPPLY ISSUES/EMERGENCIES WITHIN MWRA'S OR ITS CUSTOMER COMMUNITIES' WATER SYSTEMS. IN AN EMERGENCY SITUATION, IT IS CRITICALLY IMPORTANT THAT STAFF HAVE THE ABILITY TO DEPLOY THE MPU'S AND CONTAINERS AS QUICKLY AS POSSIBLE TO EITHER MAINTAIN OR RESTORE WATER SUPPLY. STAFF CURRENTLY UTILIZE TAG-A-LONG TRAILERS THAT ARE NOT DESIGNED SPECIFICALLY FOR THE CONTAINERS. THEREFORE, STAFF RECOMMEND THAT MWRA PURCHASE TWO NEW TRAILERS THAT WILL ALLOW THE TWO CONTAINERS TO BE PERMANENTLY MOUNTED SO THAT ANY NUMBER OF MWRA'S TRUCKS CAN PULL UP TO THE TRAILER, CONNECT, AND MOBILIZE TO THE INTENDED DESTINATION.	WRA-3781		APPLE TRAILER RENTAL CORP.	$34,264.00
P-7.	3/21/14	**TWO-YEAR CONTRACT TO PROVIDE ANALYSIS OF OIL, GREASE LUBRICANTS, AND FUEL OIL, AND RELATED TRAINING SERVICES** APPROVAL OF A TWO-YEAR PURCHASE ORDER CONTRACT TO THE LOWEST RESPONSIVE BIDDER TO PROVIDE ANALYSIS OF OIL, GREASE LUBRICANTS, AND FUEL OIL, AND RELATED TRAINING SERVICES FOR THE DEER ISLAND TREATMENT PLANT. IN ADDITION TO TESTING SERVICES, THIS CONTRACT WILL PROVIDE DEER ISLAND STAFF WITH PERIODIC TRAINING IN BEST PRACTICES FOR MACHINE LUBRICATION, AND OIL SAMPLINGS AND ANALYSIS.	WRA-3785		TRIBOLOGIK CORPORATION	$51,915.00
P-8.	3/21/14	**TWO GMC SIERRA 1500 PICKUP TRUCKS** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR TWO GMC SIERRA 1500 PICKUP TRUCKS. IN JULY 2013, THE ENGINE FAILED ON WRA-748, A 2004 CHEVROLET BLAZER. IT WAS REMOVED FROM SERVICE AND REPLACED BY WRA-695, A 1997 CHEVROLET BLAZER. DUE TO THE AGE AND CONDITION, WRA-695 IS NOT A VIABLE LONG-TERM OPTION. WRA-754, A 2002 K2500 PICKUP HAS BEEN SUBJECT TO REPEAT PROBLEMS WITH THE HEATING AND ELECTRICAL SYSTEMS. IN ADDITION, THE BRAKE LINES ARE ROTTED AND THE CARGO BED IS EXTREMELY RUSTED AND HAS STARTED TO ROT THROUGH. STAFF RECOMMEND THAT WRA-695 AND WRA-754 BE REPLACED WITH K1500 REGULAR CAB PICKUP TRUCKS. UPON REPLACEMENT, WRA-695 AND WRA-754 WILL BE CONSIDERED SURPLUS AND DISPOSED OF IN ACCORDANCE WITH MWRA'S SURPLUS PROPERTY POLICY, VIA A PUBLICLY ADVERTISED BID OR AUCTION.	WRA-3792		MOORE GMC TRUCK, INC.	$57,838.00
P-9.	3/21/14	**ELECTRICAL CONDUIT, WIRING, AND STRUT SUPPORT SYSTEM** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR THE ELECTRICAL CONDUIT, WIRING, AND OVERHEAD STRUT-TYPE SUPPORT SYSTEM COMPONENTS FOR THE CO-DIGESTION PILOT PROGRAM AT THE DEER ISLAND TREATMENT PLANT. THE INFRASTRUCTURE WILL CONSIST OF ELECTRICAL CONDUIT, WIRING, AND FITTINGS SUPPORTED BY AN OVERHEAD STRUT-TYPE SYSTEM INSTALLED IN THE LOWER LEVEL OF THE CENTRIFUGE BUILDING.	WRA-3821Q		US ELECTRICAL SERVICES, INC.	$61,376.00

PURCHASING DELEGATED AUTHORITY ITEMS - March 1 - 31, 2014

NO.	DATE OF AWARD	TITLE AND EXPLANATION	CONTRACT #	AMENDMENT	COMPANY	FINANCIAL IMPACT
P-10.	3/26/14	**16 SELF-REGULATING TEMPERATURE CONTROL VALVES** AWARD OF A PURCHASE ORDER TO THE LOWEST RESPONSIVE BIDDER FOR 16 SELF-REGULATING TEMPERATURE CONTROL VALVES FOR THE DEER ISLAND TREATMENT PLANT. THE CARBON ABSORBERS IN THE EAST AND WEST ODOR CONTROL BUILDINGS ARE USED TO REMOVE HYDROGEN SULFIDE FROM ODOROUS PROCESS AIR. THE PROCESS AIR IS HEATED TO APPROXIMATELY 90 DEGREE FAHRENHEIT PRIOR TO CARBON TREATMENT IN ORDER TO REDUCE THE REDUCE HUMIDITY OF THE AIR. THIS PREVENTS MOISTURE FROM FORMING IN THE CARBON BEDS, WHICH CAN CAUSE PROBLEMS WITH TREATMENT. THE HEATERS MODULATE TO PROVIDE ENOUGH HOT WATER TO KEEP THE AIR AT 90 DEGREES. THE TEMPERATURE IS CONTROLLED BY EXISTING REGULATORS AND ASSEMBLIES, WHICH ARE ORIGINAL EQUIPMENT INSTALLED UNDER THE BOSTON HARBOR PROJECT. IN SPITE OF STAFF'S EFFORTS TO KEEP THESE REGULATORS IN GOOD OPERATING CONDITION, VARIOUS AND AN INCREASING NUMBER OF LEAKS HAVE NOW REACHED A POINT WHERE CONTINUING TO MAKE REPAIRS IS NO LONGER A VIABLE OPTION. THEREFORE, STAFF RECOMMEND THAT ALL 16 BE REPLACED. UNDER BID WRA-3820Q, MWRA WILL PURCHASE 16 SELF-REGULATING TEMPERATURE CONTROL VALVES WITH 30-FOOT STAINLESS STEEL CAPILLARIES AND LOWER HOUSING ASSEMBLIES.	WRA-3820Q		POWER HOUSE SUPPLY COMPANY	$31,504.00

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 16, 2014
SUBJECT: 2013 Annual Update New Connections to the MWRA System

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COMMITTEE: Adminstration, Finance & Audit

_X_ INFORMATION
___ VOTE

Pamela Heidell, Policy & Planning Manager
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

For information only. MWRA's system expansion policies require staff to provide the Board with an annual update on the status of new connections to MWRA's system.

DISCUSSION:

The attached report, *2013 Annual Update New Connections to the MWRA System*, provides information on all recent water and sewer connections to the MWRA system from outside the service area.

The report tracks water withdrawals and sewer discharges against approved volumes as set forth in water supply and sewer connection agreements including each entity's compliance with the terms and conditions of its contract governing the connection to the MWRA. In 2013, all reported water supply withdrawals by new communities and straddle connections were well below the volumes stipulated in their contracts. On the sewer side, with the exception of Avalon Sharon, all sewer connections with reporting requirements reported wastewater discharges below their approved contract limits (prior to 2007, the sewer connection agreements did not include annual reporting requirements). Avalon Sharon's estimated wastewater discharge was 18,628 gallons per day (gpd), exceeding its approved discharge of 16,120 gpd. The circumstances are addressed further in the attached report.

Regarding entities expressing interest in potential admission to the MWRA water or sewer system, MWRA staff continued discussions with North Reading, Braintree, Holbrook, Randolph, and Ashland regarding admission to the MWRA water system. There was also discussion with Starwood, the successor Master Developer for Southfield (the Naval Air Station Redevelopment in Weymouth, Abington, and Rockland). MWRA routing analysis and conceptual wheeling options, connection construction cost estimates, entrance fee and rate projections were provided and were discussed in detail with inquiring communities.

There was continued discussion with prospective communities regarding MWRA Advisory Board's recommendations to allow a grace period before payment of the entrance fee, and to allow a multi-year payment plan with interest waived as incentive for new communities to join. Some prospective new communities also expressed support and interest in Senate Bill 2021: among other things, the bill proposes financial assistance to communities and includes, subject to appropriation, a 1:1 matching grant for the entrance fee payment for communities who desire to join MWRA or other regional system. Another initiative, the Sustainable Water Management Initiative (SWMI) may also have some effect on MWRA water system expansion. SWMI is discussed in a separate Staff Summary.

At this time, there is one active inquiry regarding expansion of the MWRA sewer system. This is for a residence straddling the Dover/Natick municipal boundary that reportedly has a non-conforming septic system. MWRA understands that Southfield has considered, but is not pursuing, having the entire Southfield development discharge to the MWRA sewer system. MWRA has apprised Southfield's developer of MWRA's 4:1 inflow removal requirements and its concerns regarding wastewater capacity during peak wet-weather events.

The maps included in the update show the location of past connections, as well as entities expressing interest in potential admission to the MWRA water or sewer systems.

2013 ANNUAL UPDATE
NEW CONNECTIONS TO THE MWRA SYSTEM

In 2002, the Advisory Board System Expansion Committee published its report and recommendations regarding MWRA System Expansion. The report recommended that an annual update to the Board on the status of any new connections to the MWRA system be prepared. This recommendation was incorporated into MWRA's revised system expansion policies. Accordingly, annual reports are prepared each year, addressing compliance with contract terms and conditions for all entities recently admitted to the MWRA. Inquiries from potential applicants for admission are also noted in this report.

In 2013, both Hudson and Ashland applied to, and were approved, for emergency water supply requests under MWRA Policy OP.05, *Emergency Water Supply* Withdrawals. Hudson's request came as a consequence of a local source shortfall because two of its wells are temporarily off line due to water quality issues. In 2013, Hudson withdrew a total of 112,895,689 gallons from MWRA from June through December. In contrast, Ashland did not withdraw any water. Soon after the Emergency Agreement with Ashland was executed, there was sufficient precipitation to replenish Ashland's water supply. There were no applications under Policy OP.09, *Water Connections Serving Property Partially Located in a Non-MWRA Community*, or Policy OP.10, *Admission of New Community to MWRA Water System.*

On the sewer side, there were no applications for connections under either Policy OP.11, *Admission of New Community to MWRA Sewer System and Other Requests for Sewer Service to Locations Outside MWRA Sewer Service Area* or Policy OP.04, *Sewer Connections Serving Property Partially Located in a Non-MWRA Community.*

With respect to future applications, in 2013 MWRA continued discussions with North Reading, Ashland, Southfield and Tri-Town regarding admission into the MWRA water system. North Reading, which had filed an Environmental Notification Form in 2012 indicating its intent to join the MWRA Water system as a full-time member, continued to study the prospect of receiving water from MWRA via wheeling through Reading. Ashland's key efforts in 2013 towards joining MWRA included not only coordination with MWRA, but the acquisition of a grant from MassWorks for the construction of a connection to MWRA. Staff also had a number of meetings with Braintree, Randolph, and Holbrook (Tri-Town) regarding potential future water supply. Staff also met with Starwood Developer, the successor Master Developer of Southfield (the Naval Air Station Redevelopment in Weymouth, Abington, and Rockland), to discuss MWRA water supply to Southfield.

On the sewer side, in 2013 MWRA worked with the son of a homeowner of a house straddling the Dover/Natick town line regarding an application to MWRA under OP.04. An application to MWRA in 2014 is anticipated.

System Expansion Requests, past and future, are addressed further in the following pages.

2013 ANNUAL UPDATE
NEW CONNECTIONS TO THE MWRA SYSTEM

In 2002, the Advisory Board System Expansion Committee published its report and recommendations regarding MWRA System Expansion. The report recommended that an annual update to the Board on the status of any new connections to the MWRA system be prepared. This recommendation was incorporated into MWRA's revised system expansion policies. Accordingly, annual reports are prepared each year, addressing compliance with contract terms and conditions for all entities recently admitted to the MWRA. Inquiries from potential applicants for admission are also noted in this report.

In 2013, both Hudson and Ashland applied to, and were approved, for emergency water supply requests under MWRA Policy OP.05, *Emergency Water Supply* Withdrawals. Hudson's request came as a consequence of a local source shortfall because two of its wells are temporarily off line due to water quality issues. In 2013, Hudson withdrew a total of 112,895,689 gallons from MWRA from June through December. In contrast, Ashland did not withdraw any water. Soon after the Emergency Agreement with Ashland was executed, there was sufficient precipitation to replenish Ashland's water supply. There were no applications under Policy OP.09, *Water Connections Serving Property Partially Located in a Non-MWRA Community*, or Policy OP.10, *Admission of New Community to MWRA Water System.*

On the sewer side, there were no applications for connections under either Policy OP.11, *Admission of New Community to MWRA Sewer System and Other Requests for Sewer Service to Locations Outside MWRA Sewer Service Area* or Policy OP.04, *Sewer Connections Serving Property Partially Located in a Non-MWRA Community.*

With respect to future applications, in 2013 MWRA continued discussions with North Reading, Ashland, Southfield and Tri-Town regarding admission into the MWRA water system. North Reading, which had filed an Environmental Notification Form in 2012 indicating its intent to join the MWRA Water system as a full-time member, continued to study the prospect of receiving water from MWRA via wheeling through Reading. In the interim, MWRA is poised to serve North Reading in an emergency. Ashland's key efforts in 2013 towards joining MWRA included not only coordination with MWRA, but the acquisition of a grant from MassWorks for the construction of a connection to MWRA. Staff also had a number of meetings with Braintree, Randolph, and Holbrook (Tri-Town) regarding potential future water supply. Staff also met with Starwood Developer, the successor Master Developer of Southfield (the Naval Air Station Redevelopment in Weymouth, Abington, and Rockland), to discuss MWRA water supply to Southfield.

On the sewer side, in 2013 MWRA worked with the son of a homeowner of a house straddling the Dover/Natick town line regarding an application to MWRA under OP.04. An application to MWRA in 2014 is anticipated.

System Expansion Requests, past and future, are addressed further in the following pages.

1.0 SUMMARY OF APPROVED CONNECTIONS TO THE MWRA WATER SYSTEM AND INQUIRIES REGARDING FUTURE CONNECTIONS

1.1 APPROVED CONNECTIONS TO THE WATER SYSTEM

Since 2002, when annual reports on system expansion requests began, Reading became a fully-served MWRA water community and four communities have become partially served MWRA water communities – Wilmington, Dedham and Westwood served by the Westwood Water District, and Stoughton. Prior to 2002, Bedford was admitted. In addition, Avalon in Peabody/Danvers (now called 14 North) and the YMCA in Marblehead/Salem have been admitted pursuant to OP.09, the "Straddle Policy."

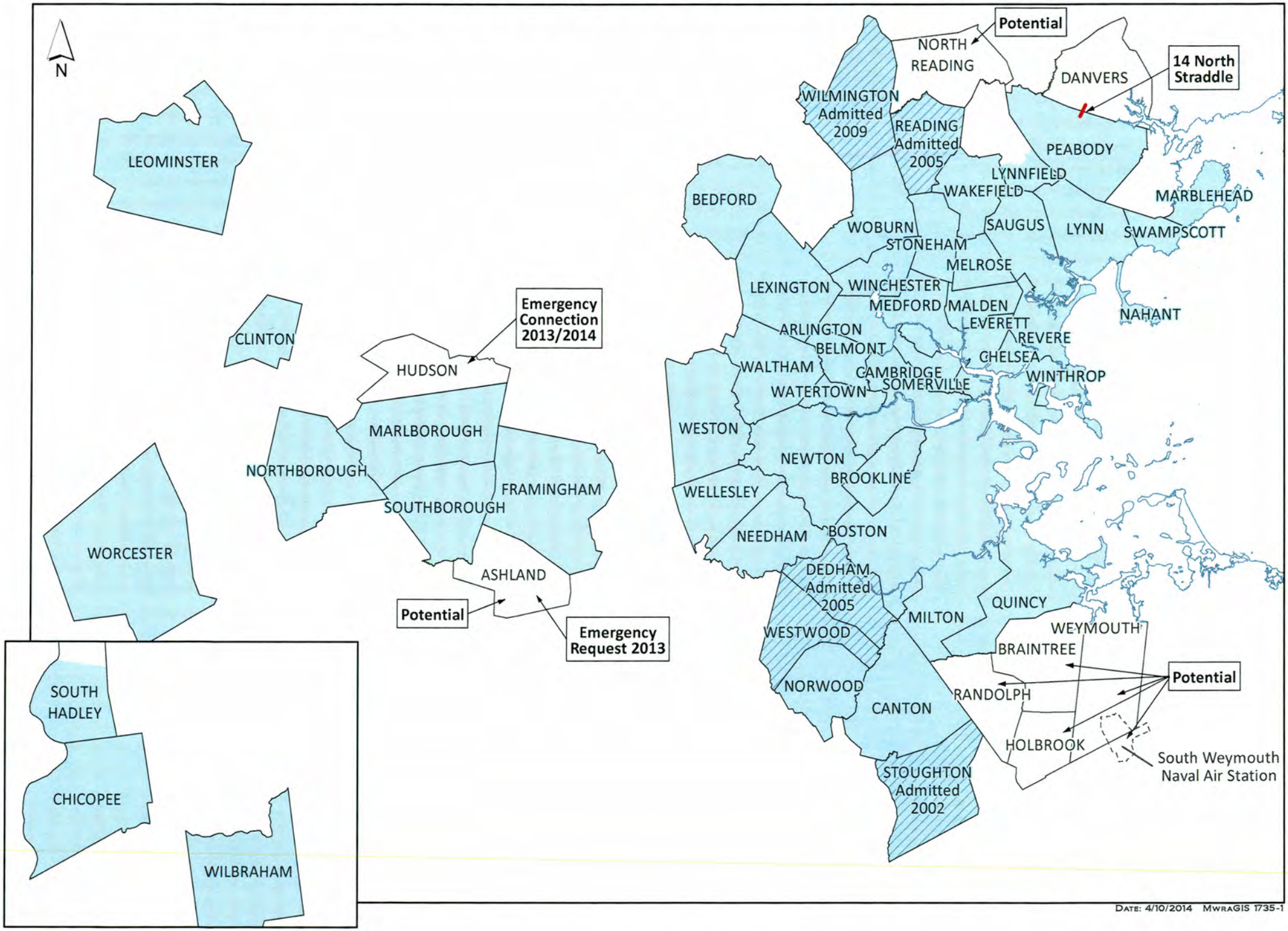
Table 1 summarizes the connections to the water system and Figure 1 shows the new connections. Each entity entered into water supply agreements with MWRA stipulating terms such as annual water withdrawal limits, entrance fee payments, and reporting requirements. As indicated in Table 1, water withdrawals in 2013 by the new communities and the straddle connections admitted to the system as permanent connections were typically well below the volumes stipulated in their contracts (contract limits are used as the basis for the entrance fee). Regarding emergency withdrawals under OP.05, from June through December, Hudson withdrew 112,895,689 gallons of water from MWRA, first through a 30-day short term emergency request and then through a formal six-month emergency withdrawal approved by the MWRA Board. Hudson's withdrawals averaged 0.481 mgd, below the 0.5 mgd stipulated in its six-month emergency agreement. The emergency withdrawal is due to two wells being off line while Hudson implements a long term corrective plan to construct transmission mains from the two wells to Hudson's Filtration Plant (which serves three other wells).

Table 1
Approved Connections to MWRA Water System Since 2002

Applicant (location)	Applicable MWRA Policy	Approval Date	MWRA Approved withdrawal (mgd on an annualized basis)	Withdrawal from MWRA in 2013(mgd)
Permanent Connections				
Wilmington	OP.10, New Community	5/09	0.6 mgd	.307 mgd
Reading	OP.10, New Community	11/05 partial) 10/07 (full)	2.1 mgd	1.633 mgd
YMCA (Salem/Marblehead)	OP.09, "Straddle Policy"	11/06	0.0127 mgd	.0091 mgd
Dedham/Westwood W.D	OP.10, New Community	12/05	0.1 mgd	.041 mgd
14 North (Avalon) Danvers/Peabody	OP.09, "Straddle Policy"	05/03	0.012 mgd	.008mgd
Stoughton	OP.10, New Community	6/02	1.15 mgd	.788 mgd
Emergency Connections				
Hudson	OP.05, Emergency Withdrawal	6/3* 6/26, 12/13	0.5 mgd	.481 mgd
Ashland	OP.05, Emergency Withdrawal	12/13 12/07	0.75mgd	0 mgd
*This was approved under short term 30 days withdrawals or less.				

Additional information on each recent connection is provided in Attachment A.

New Water Connections Since 2002 and Potential New Connections



DATE: 4/10/2014 MWRAGIS 1735-1

1.2 POTENTIAL FUTURE CONNECTIONS TO THE WATER SYSTEM

In 2013, prospective communities met with MWRA and were provided detailed information regarding the MWRA water system, engineering considerations and pipeline routing, and rates and financial projections.

There was continued discussion with prospective communities regarding the MWRA Advisory Board's recommendations to allow a grace period before payment of the entrance fee, and to allow a multi-year payment plan with interest waived as incentive for new communities to join. Prospective new communities have also expressed support and interest in Senate Bill 2021: among other things, the bill proposes financial assistance to communities and includes, subject to appropriation, a 1:1 matching grant for the entrance fee payment for communities who desire to join MWRA or other regional system. Another initiative, the Sustainable Water Management Initiative (SWMI) may also have some effect on expansion of the MWRA water system. SWMI was a multi-year process that resulted in a classification system that characterized the ecological health of the state's rivers and streamflow criteria that are now proposed to be incorporated into Water Management Act permits (this does not include MWRA, as MWRA has a Water Management Act registration, but not a permit). Many water basins within and surrounding the MWRA service area are significantly altered, and communities in those basins with who wish to increase their water supply withdrawals above baseline and who have, or who seek, Water Management Act permits will be compelled to consider MWRA.

North Reading

North Reading is actively taking steps towards joining the MWRA. An Environmental Notification Form (ENF), the first step in the MEPA process for communities wishing to join the MWRA, was filed in October 2012 on "New Water and Wastewater Solutions." The ENF stated the Town's intent to pursue becoming a fully-served MWRA water community, to discontinue use of its local wells in the Ipswich River basin and to reduce reliance on water supplied from Andover. North Reading's water demand is approximately 1.5 mgd (0.4 supplied by local wells, 0.9 mgd by Andover). As noted in the Secretary's Certificate on the ENF, comment letters received were generally supportive of the Town's proposal to connect to the MWRA's water supply. DEP specifically commented that reducing water withdrawals from the sub basin within which North Reading's wells are located will benefit stream flow and habitat conditions. North Reading is now preparing an Environmental Impact Report, the next step in the process to join MWRA.

A detailed study effort by North Reading's and Reading's consultants is underway to determine the necessary community systems infrastructure modifications/improvements that would be required to wheel MWRA water to North Reading via Reading. Reading's Town Manager is supportive of this cooperative effort. A Draft Environmental Impact Report is anticipated to be submitted in 2014.

Ashland

Flow alteration is a concern for Ashland, where there are withdrawal constraints associated with Ashland's existing groundwater sources. Increased groundwater withdrawals from local sources

could impact nearby water resources and so would also be subject to withdrawal constraints that could limit use when needed most. Also, periodically, Ashland has requested emergency withdrawals from MWRA, due to low water levels affecting the ability of its wells to operate, as groundwater drops below the pumps. Therefore, Ashland is developing a plan to diversify its water sources. In August 2007, the Town submitted an Environmental Notification Form for the construction of a dedicated 10,000 linear feet 12-inch water main extension from a pump station of the Town of Southborough to a connection with the Town of Ashland distribution system. The ENF was withdrawn, but Ashland continued to evaluate water supply options. In 2013, Ashland received a grant from the Department of Housing and Community Development MassWorks Infrastructure Program for partial funding for the construction of a connection to MWRA. Since Ashland now operates a treatment plant which also supplies water to Hopkinton, there may also be future consideration of Hopkinton joining Ashland in pursuing admission to MWRA as partial use communities.

Tri-Town

Braintree, Randolph and Holbrook comprise Tri-Town, a regional drinking water supply shared by the three communities. Braintree operates its own treatment plant and a second treatment plant serves the Randolph-Holbrook Joint Water Board. Both treatment plants are aging and a single regional treatment facility has been proposed. In addition, to increase reservoir storage capacity, a reservoir dredging project is proposed. As an alternative to a capital program involving both a new regional treatment plant and a dredging program, Tri-Town is considering a connection to MWRA. In 2013, MWRA met with the Tri-Town communities numerous times, both individually and collectively in formal meetings of the Tri-Town Board.

MWRA developed and presented pipeline routing alternatives and cost analysis that considered existing infrastructure, and the most cost-effective ways to serve the Tri-Town communities. Similarly, the Advisory Board's recommendations regarding a multi-year payment plan with interest waived and a grace period evoked much interest from the communities, as did detailed information on rate projections, and the many merits of joining MWRA, including a plentiful water supply. Tri-Town appears to still be weighing its options.

Southfield

The Weymouth Naval Air Station Redevelopment (Southfield) remains a prospective connection to MWRA. MEPA documents indicate that MWRA is Southfield's preferred option to meet the long-term water needs of its phased development. More recently, a study for the South Shore Tri-Town Development Corporation entitled "*Evaluation of Alternative Water Supply and Sewer Service Options for Southfield, May 7, 2012*" included a technical feasibility study of the host communities' ability to support the development of a Phase 1 and 2 build scenario of 0.8 mgd and built-out scenario demand of 1.4 mgd. While the study does suggest Weymouth may meet some of the long-term demand, the study was not conclusive, as environmental, regulatory, and certain cost considerations were not addressed. Many, including MWRA staff, believe MWRA remains the best solution to comprehensively address the long-term needs of the Redevelopment, and moreover, the regional needs of Southfield and Tri-Town communities combined.

In 2013, MWRA continued discussions with Starwood, Southfield's new Master Developer. Technically, MWRA believes there are many ways to serve Southfield, either wheeling MWRA

water through Quincy to Weymouth via an existing pipeline that serves MWRA's Intermediate Pump Station, via wheeling through Tri-Town, or through construction of a direct pipeline from MWRA's Section 22 in Quincy to Southfield. However, the latter alternative entails many miles of new pipe.

2.0 SUMMARY OF APPROVED CONNECTIONS TO THE MWRA SEWER SYSTEM AND INQUIRIES REGARDING FUTURE CONNECTIONS

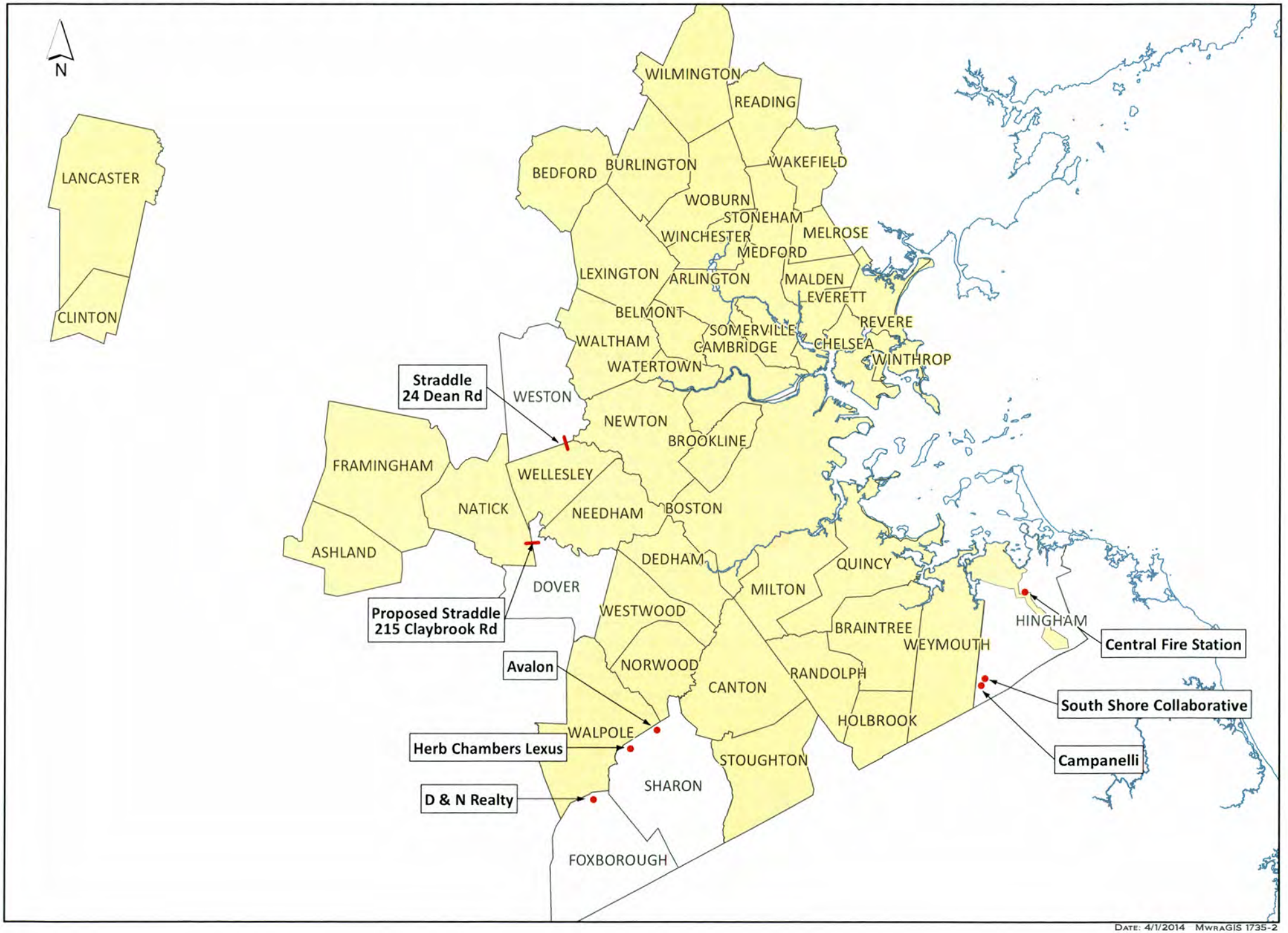
2.1 APPROVED RECENT SEWER SYSTEM CONNECTIONS

Table 2 summarizes all permanent connections to the sewer system since the Advisory Board recommended annual reporting on system expansion requests and Figure 2 shows their approximate locations. Entities connecting to the MWRA sewer system from outside the service area have been required to fund inflow removal projects in the receiving area and to pay an entrance fee upon admission to the MWRA. Each entity entered into sewer connection agreements with MWRA stipulating terms and since 2007, all sewer connection agreements have included annual reporting requirements related to volumes discharged.

Wastewater discharges are estimated based on water meter readings and bills, and as indicated in Table 2, most entities reported that wastewater discharges in 2013 were below their approved contract limits. The exception was Avalon Sharon, whose estimated wastewater discharge of 18,628 gpd exceeded its allowed discharge of 16,120 gpd. This exceeded Avalon Sharon's allowed discharge, per the MWRA/Avalon Sewer Connection Agreement which says the following: *Avalon is approved to discharge 16,120 gpd calculated as annual average day per calendar year. Any expansion of the project resulting in an increase beyond the approved discharge will require further review and approval by MWRA and other approval authorities.* Avalon Sharon indicated that the increased use was due to leaks and running toilets in a number of its residential buildings and its clubhouse that were not reported in a timely fashion. The increased use, then, does not appear to be attributed to an expansion of the project. It is important to note that Avalon's sewer use contract with MWRA, and required inflow removal and entrance fee calculation was based on Title V estimated discharges of 27,280 gpd, which are considerably higher than the actual discharges. If this were <u>not</u> the case, and if the discharge exceeded the volumes on which the entrance fee and mitigation/inflow removal requirements were based, then a revision to the entrance fee and mitigation could be pursued. In any case, Avalon has indicated it has increased its efforts to inform residents to report leaks and maintenance issues immediately.

The most recent approved sewer connection was for FoxRock Realty's expansion and renovation of a property at 105 Research Road in Hingham for use by the South Shore Collaborative. In 2004, a smaller discharge associated with office/warehouse use at 105 Research Road was approved and a connection was made to MWRA sewer system via the Weymouth sewer system. In May, 2013 MWRA approved an increase in wastewater discharge of 3,311 gpd, for a total discharge of 5,336 gpd (2,025 gpd was approved in 2004). In 2013, FoxRock fulfilled its Inflow Removal obligations with the submittal of an Inflow Removal report documenting that nine sump pumps were redirected and eleven sewer manhole replacements were completed, resulting in 10,080 gpd and 20,072 gpd of inflow reduction attributed to sump pump redirection and

New Sewer Connections Since 2002 and Potential New Connections



DATE: 4/1/2014 MWRAGIS 1735-2

manhole replacement, respectively. The inflow removal program satisfied both MWRA's inflow removal requirements of 13,244 gpd and Weymouth's requirements.

Table 2
Approved New Connections to MWRA Sewer System Since 2002

Applicant (location)	Applicable MWRA Policy	Approval Date	MWRA Approved discharge (gpd))	Estimated Discharge to MWRA in 2013*
FoxRock Realty (at 105 Research Rd, Hingham)	OP.11	4/12	5,536 gpd	1,047 gpd
24 Dean Road, (Weston/Wellesley)	OP.04	3/11	575 gpd	335 gpd
D&N Realty, (Foxborough)	OP.11	6/07	13,000 gpd	2,407gpd**
Avalon Bay, (Sharon)	OP.11	6/07	16,120 gpd	18,628 gpd**
Herb Chambers Lexus, Sharon)	OP.11	5/07	6,400 gpd	5,461gpd**
Hingham Fire Station, (Hingham)	OP.11	4/07	782 gpd	248 gpd
Campanelli (Hingham)	OP.11	2/04	2,475 gpd	***

* Wastewater discharges are estimated based on water meter readings.
**Water consumption figures are adjusted downward by 5% to account for a certain percentage of water that is used by the facility and not returned as wastewater (such as landscaping, water consumed).
*** Contract does not contain reporting requirements

The annual reporting requirements contained in the sewer connection agreements also address continuing obligations for the connecting entity that relate to sewer system operations. These range from inflow removal reports to ongoing inspection of the inflow dishes installed in sewer manholes to reduce inflow in Walpole (a condition of the Herb Chambers and D&N Realty inflow removal requirements), to maintaining the ability to cease discharges to MWRA during severe wet weather (Avalon and D&N Realty). Entities have been compliant with their MWRA contract conditions.

Further description of each recent connection is provided in Attachment A.

2.2 INQUIRIES REGARDING FUTURE CONNECTIONS TO THE SEWER SYSTEM

In October, MWRA received a straddle request for a residence straddling the Dover/Natick municipal boundary. The request is for an existing three bedroom house, with a reportedly non-conforming septic system that is adjacent to wetlands on the property. MWRA has been working with the Applicant's son and the Town of Natick to address MWRA's Straddle connection requirements. Progress has been hampered by Natick's difficulty in identifying suitable inflow reduction projects to satisfy MWRA's Inflow Removal requirements.

ATTACHMENT A
DESCRIPTION OF APPROVED CONNECTIONS TO MWRA FROM OUTSIDE THE SERVICE AREA

WATER SYSTEM

- **Hudson:** Since June 2013, Hudson has withdrawn water from MWRA pursuant to OP.05, *Emergency Water Supply Withdrawals.* Hudson receives MWRA water through an emergency 8-inch metered interconnection with Marlborough located on the Hudson/Marlborough line. Hudson's need for emergency withdrawals from MWRA is temporary and results from a local source shortfall due to the off-line status of Hudson's Cranberry Bog Well and the Kane Well as a result of water quality issues. In addition to the Cranberry Bog and Kane wells, Hudson's water sources include Chestnut Street Wells 1,2, and 3 and Gates Pond. The capacity of the Chestnut Wells and Gates Pond was not sufficient to meet the Town's demand, particularly since in 2013, Gates Pond was below full capacity due to a deficit in rainfall. Both the Cranberry Bog Well and the Kane Well are the subject of a long term corrective action plan and a DEP Administrative Consent Order (ACO) issued on June 14, 2013 that extends until December 31, 2014. Hudson's long term corrective action plan includes the construction of transmission mains from both the Cranberry Bog Well and the Kane Well to Hudson's Chestnut Street Filtration Plant, along with instrumentation and process modifications at the Treatment Plant. When completed by December, 2014, Hudson's need for MWRA will cease.

  In accordance with OP.05, a 30-day short term emergency withdrawal was approved in mid-June 2013, followed by two subsequent six month approvals by the Board that extend until July 3, 2014. Water sold to Hudson assessed at the prevailing rate resulted in approximately $350,626 in water revenue, and an additional $27,972 assessed as a surcharge pursuant to OP.05.

- **Ashland:** In late 2013, the Town of Ashland requested an emergency water supply withdrawal from MWRA in accordance with MWRA Policy OP.05, *Emergency Water Supply Withdrawals,* due to lower than normal precipitation and low groundwater levels at the Town's wells. This was the second six-month emergency withdrawal period for Ashland: a prior six-month emergency withdrawal request was approved for the period December 2007 through May 2008. Ashland relies on three wells in a well field (the Howe Street well field) adjacent to the Hopkinton State Reservoir. The reservoir elevation impacts the elevation of the groundwater in the well field. In the fall of 2013, lower than normal precipitation raised concerns about water levels, for when reservoir levels drop, Ashland's wells may be affected to the point that two of the three wells may "lock-out", as the groundwater drops below the pumps. Ashland requested a maximum day withdrawal from MWRA of 1.0 mgd, to be conveyed to Ashland through the town's interconnection to the Southborough water system at the Ashland/Southborough Town line. Ultimately, Ashland did not withdraw any MWRA water as water levels were replenished soon after the emergency withdrawal was granted.

- **Wilmington:** Wilmington was admitted into the MWRA Water System in May 2009. Wilmington pursued admission to MWRA due to contamination of the Town's Maple Meadow Aquifer which forced the Town to close five of its nine available drinking water wells. In addition, Wilmington's admission to the MWRA also creates streamflow benefits by reducing the Town's withdrawals in the highly stressed Ipswich River basin where the Town's nine wells are located. Prior to admission to MWRA, Wilmington withdrew water from MWRA under successive six-month emergency withdrawal periods from May-November, 2003-2008. Wilmington entered into a five-year water supply agreement with MWRA for 0.6 mgd, with the understanding that some time in the future, the Town may request an additional volume of 401.5 million gallons annually for at total of 620.5 million gallons annually (1.7 mgd), as permitted through the regulatory reviews. Wilmington's request of 0.6 mgd resulted in an entrance fee of $3,126,211 and a Net Entrance Fee of $2,809,320 (the Town had contributed $316,890 towards the entrance fee as a result of Net Asset Valuations paid for its emergency withdrawals) to be paid in annual installments over 20 years. Recently, Wilmington requested a revised payment schedule based on changes in interest rates. In 2013, Wilmington withdrew .307 mgd.

  Wilmington's existing water supply contract ends on April 30, 2014. It is anticipated that a new 10- year contract will be brought to the Board in May. In the new contract (like the current contract) Wilmington is requesting 0.6 mgd, or 219 million gallons a year for the next ten years. Water demands in 2014 are considerably less than projected when Wilmington completed its regulatory reviews. Recently, Wilmington has also requested a new 20-year payment schedule that reflects a lower interest rate than the 4.67% included in Wilmington's 2009 admission terms. This request is being brought to the Advisory Board, and if approved by the Advisory Board, will be incorporated into a proposed contract for MWRA Board approval in May.

- **Reading:** Reading was admitted to the MWRA in 2005 and was initially approved to withdraw up to 219 million gallons from May 1 through October 31 (0.6 mgd on an annual volume basis). Shortly after Reading was admitted as a partially supplied community, Reading entered into an Adminstrative Consent Order (ACO) with DEP that required Reading to reduce its withdrawal from the Ipswich River to the extent feasible. Additional reviews pursuant to MEPA and the Interbasin Transfer Act (ITA) were completed, and in July 2007 the Water Resources Commission approved Reading's request to withdraw up to a total of 829 million gallons a year (2.27 mgd) from MWRA. In October 2007, Reading received approval from the Board of Directors to increase its withdrawal from MWRA to 766.5 million gallons annually (2.1 mgd), subject to an additional entrance fee payment of $7,799,606 (which has been paid in full). In the future, Reading may seek an additional 62.5 million gallons a year from MWRA, consistent with the amount approved under the ITA; this additional withdrawal would be subject to MWRA and MWRA Advisory Board approvals and an additional entrance fee. In 2013, Reading withdrew 1.633 mgd from MWRA; as a result, its discontinued use of local sources in the highly-stressed Ipswich River Basin has yielded Ipswich River watershed gains.

- **Leggs Hill YMCA:** As approved by MWRA, the YMCA at Leggs Hill project consisted of a proposed 88,525 square foot YMCA facility with parking, a small athletic field, and 10 single–family homes. Development was proposed on a then 19.5-acre undeveloped parcel of

land that fronts Leggs Hill Road and that straddles the corporate limits of both Marblehead and Salem. Most of the site development is in Salem. Salem's water distribution system does not extend to the YMCA's location, and the site is geographically isolated from the remainder of Salem by steep slopes, open space and wetland resource areas. Since Marblehead owns a 16-inch water main in Leggs Hill Road with capacity to serve the YMCA, a connection to MWRA via Marblehead was the preferred water supply option. The connection was approved in November 2006, under OP.09 *Water Connections Serving Property Partially Located in a Non-MWRA Community*, the "Straddle Policy." A Water Connection Agreement was executed between MWRA and YMCA; its terms included YMCA's payment of an entrance fee of $70,823, which has been paid in full, and an average annual withdrawal limit from MWRA via the Marblehead water distribution system of .0127 gpd. Water use in 2013 was .0091 mgd.

- **Dedham-Westwood Water District:** MWRA approved Dedham-Westwood Water District's (DWWD) admission to the MWRA water system in December 2005, pursuant to the requirements and procedures of OP.10, *Admission of a New Community to MWRA Water System*. DWWD uses MWRA water to supplement its local sources when use of its Fowl Meadow Well is restricted during low flow periods on the Neponset River (per limitations established by the Water Resources Commission). DWWD was approved to withdraw up to 36.5 million gallons on an annual volume basis (0.1 mgd) and up to 2 million gallons on a maximum day basis. Based on a demand on an annual volume basis of 0.1 mgd, DWWD's entrance fee of $548,748 has now been paid in full. In 2013, DWWD's withdrawals from MWRA were 0.041 mgd.

- **14 North (formerly Avalon Bay):** In 2003, Avalon Bay's request to receive MWRA water was approved in accordance with OP.09, "*Water Connections Serving Property Partially Located in a Non-MWRA Community.*" In 2011, the property changed ownership and is now called 14 North. It is a residential community that straddles the Danvers (non-MWRA community) and Peabody (MWRA partially-supplied community) municipal boundary. Of the project's total water consumption, 12,000 gpd is associated with the Danvers portion of the development. The connection to Peabody was based on constraints on Danvers' municipal water supply and the potential impacts of additional water withdrawals from the Ipswich River basin. An average demand of 0.012 mgd was approved by MWRA. An entrance fee of $64,063 was received from Avalon as a single payment in September 2004. In 2013, 14 North's withdrawals were .008 mgd.

- **SEWER SYSTEM**

- **105 Research Road, Hingham.** In April 2012, MWRA approved an increase in wastewater discharge from 105 Research *Road in Hingham from 2,025 gallons per day, as previously approved in 2004,* to up to 5,336 gallons per day, subject to an additional entrance fee payment of $12,750.00, removal of at least 14,400 gallons of inflow, and contingent upon legislative approval. The Research Road property is located in southwestern Hingham and conveys flow to MWRA via the Weymouth sewer system. In 2004, when MWRA and Research Road LLC entered into a Sewer Connection Agreement for an approved discharge from 105 Research Road of 2,025 gallons per day, the site was used for office and warehouse use. A renovation, reuse, and expansion of the site for use by the South Shore Educational

Collaborative required an increased wastewater discharge, by 3,311 gallons per day for a total of 5,536 gallons per day. Legislation was enacted in July 2012 allowing a higher discharge, and in November 2012 MWRA received the $12,750 entrance payment in full.

To meet MWRA's inflow removal requirements, the Applicant proposed to remove/redirect twelve sump pumps that are now connected to the Weymouth system. Subsequently, FoxRock's consultant indicated, and Weymouth DPW confirmed, that despite a significant amount of time and energy expended to identify illicit sump pump connections to the sewer that could be redirected, ultimately only 8 sump pumps for removal could be identified. As a result, a revised inflow removal report was submitted to MWRA detailing the 8 sump pumps and also including the replacement/raising of eleven manhole covers. The revised plan was reviewed by MWRA and MWRA Advisory Board staff and found acceptable. In 2013, FoxRock fulfilled its Inflow Removal obligations with the submittal of an Inflow Removal report documenting that not eight, but nine sump pumps were redirected and eleven sewer manholes replacements were completed. It was estimated that 10,080 gpd and 20,072 gpd of inflow reduction attributed to sump pump redirection and manhole replacement, respectively, was achieved. The inflow removal program satisfied both MWRA's inflow removal requirements of 13,244 gpd and Weymouth's requirements.

- **24 Dean Road, Weston.** In March, 2011, MWRA approved a connection to the MWRA sewer system via the Wellesley sewer system for a residence at 24 Dean Road that is partially located in Weston and partially located in Wellesley, in accordance with MWRA OP.04, *Sewer Connections Serving Property Partially Located in a Non-MWRA Community.* Total estimated wastewater generation from the residence was estimated to be 575 gallons per day; wastewater generation attributable to development from outside the MWRA sewer service area (four of the five bedrooms in the house) was estimated to be 460 gallons per day. Wastewater flow from the 24 Dean Road residence is transported to the Wellesley system via a short sewer line connecting to a sewer manhole at 20 Dean Road, where the Wellesley sewer system ends. MWRA required removal of at least 1,840 gpd of peak inflow. Accordingly, the applicant provided funds to the Town of Wellesley install a fiberglass manhole cover inflow removal dish. Wellesley DPW reported that this dish was installed. The Applicant was required to pay an entrance fee of $18,033, which was received by MWRA in April, 2011. In 2013, the estimated wastewater discharge was approximately 335 gallons per day unadjusted for irrigation. Actual wastewater discharge is likely considerably less since the water usage included water use associated with maintaining new sod.

- **Hingham Fire Station:** In 2007 MWRA approved a connection to the MWRA sewer system through the North Sewer District of Hingham for the Hingham Central Fire Station pursuant to OP.11 *Admission of New Community to MWRA Sewer System and Other Requests for Sewer Service to Locations Outside MWRA Sewer Service Area.* Hingham modernized its Central Fire Station to accommodate modern firefighting equipment, and the existing on-site septic system could not accommodate the new building program. The Fire Station is outside the boundaries of the north sewer district of Hingham served by MWRA. A new 1 1/2-inch sewer service at the Fire Station discharges to an existing town sewer force main. The design flow discharge is 782 gpd, the majority of which is typical sanitary wastewater originating from bathroom facilities, laundry, and building maintenance. The only source of non-sanitary water use is from apparatus bays where water is used for vehicle washing. All wastewater from the apparatus bays is required to go through gas/oil separators prior to

discharge to MWRA. Inflow removal was accomplished prior to admission to MWRA. In 2013, the average daily discharge from the Fire Station was 248 gallons per day, well below its approved contract limits.

- **Avalon Bay at Sharon**. In 2007, MWRA approved connection to the MWRA sewer system through Norwood for the Avalon Sharon Rental community. The development consists of a 156 one and two-bedroom apartment homes as well as a clubhouse, outdoor amenity area, heated pool and fitness center, and resident lounge. The development abuts the Sharon/Norwood municipal boundary. Avalon Sharon requested to discharge sewage to the Norwood collection system since Sharon does not provide wastewater service and on-site disposal was found to be impractical. A holding tank was also proposed to provide the ability to restrict discharges to the Norwood and MWRA system during specified times. Avalon's sewer use agreement with MWRA limited flow to an average of 16,120 gpd, required Avalon to fund inflow removal projects in the Town of Norwood, and required an entrance fee payment of $105,686. Avalon has fulfilled these requirements.

  In 2013, wastewater discharges, based on water bills for 2013 and with a 5% adjustment for consumptive use, was 18,628 gpd. This exceeded Avalon Sharon's allowed discharge, per the MWRA/Avalon Sewer Connection Agreement which says the following: *Avalon is approved to discharge 16,120 gpd calculated as annual average day per calendar year. Any expansion of the project resulting in an increase beyond the approved discharge will require further review and approval by MWRA and other approval authorities.* Avalon Sharon indicated that the increased use was due to leaks and running toilets in a number of their residential buildings and their clubhouse that were not reported in a timely fashion. The increased use, then, does not appear to be attributed to an expansion of the project. It is important to note that Avalon's sewer use contract with MWRA, and required inflow removal and entrance fee requirements was based on Title V estimated discharges of 27,280 gpd, which are considerably higher than the actual discharges. If this were <u>not</u> the case, and if the discharge exceeded the volumes on which the entrance fee and mitigation/inflow removal requirements were based, then a revision to the entrance fee and mitigation could be pursued.

- **Herb Chambers Lexus.** In 2007 MWRA approved sewer service to Herb Chambers of Chicopee (HCC) Sharon Lexus Dealership. A retail new car sales and service facility was constructed on a 10.8 acre industrial/commercial property located on U.S. Route 1 and Old Post Road in Sharon. The development included a 100,000 square foot facility, with the lower floor housing 44 service bays and a car wash, and the upper floor entirely dedicated to the retail sales operation. Sharon is not sewered and the soils on the Herb Chambers' site were found to be unsuitable for on-site discharge. Since the site is near the Walpole town line, discharge to MWRA via the Walpole sewer system was proposed. An average daily flow of 6,400 gallons and a maximum daily flow of 10,500 gallons per day were estimated, based on a review of water consumption data from an existing Lexus dealership and on Title V guidelines. As conditions of admission to MWRA, Herb Chambers was required to pay an entrance fee of $40,750 (the entrance fee was based on a daily flow of 10,500 gallons and has been paid in full), and to work cooperatively with the Town of Walpole to realize a four to one verifiable reduction in flow to the MWRA wastewater system. A Final Inflow Removal Report documenting inflow removal was submitted in 2008. MWRA also required

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HCC to obtain a permit from the Toxic Reduction and Control Unit for a Non-Significant Industrial User. In 2013, estimated daily sewage discharge was 5,461 gallons per day.

- **D & N Realty Trust.** In 2007, MWRA approved a connection to the MWRA sewer system through Walpole for the D&N Realty site. The D&N Realty site is an existing development on the Walpole/Foxborough border that contains two buildings that collectively house four different businesses, including a restaurant, function hall known as Christina's, offices, and a small accessory building for outside recreation facilities, known as Funway USA. The on-site sewer system had failed, prior to application to MWRA, and a connection to MWRA was supported by both Foxborough and Walpole. The site is connected to the Walpole system via a new sewer service pipe on the site connecting to 1,180 feet of new sewer. Average daily discharge based on historical records was about 13,000 gpd, and wastewater generation rate based on Title V for the site is 43,393 gallons per day. Title V estimate was used as the basis for the entrance fee calculation and for inflow removal requirements. As conditions of admission to MWRA, D&N Realty was required to pay an entrance fee of $168,391 (which has been paid in full), and to work cooperatively with the Town of Walpole to realize a four to one verifiable reduction in flow to the MWRA wastewater system, providing an approximate daily reduction of 173,572 gallons of peak inflow during a one-year six-hour storm. Inflow removal was accomplished prior to activation of the sewer connection to MWRA. MWRA also required D&N to address the feasibility of on-site storage to retain at least two days of average daily wastewater flows and to make holding/pumping arrangements. D&N reported that in 2013, estimated daily sewage discharge was 2,407 gallons per day. D&N also provided MWRA a copy of an updated agreement with an emergency sewage disposal company whereby the tank could be pumped in an emergency situation or situation when MWRA directs D&N to cease pumping during intense storm and surcharge conditions.

- **Campanelli Hingham LLC and Research Road LLC.** Campanelli Hingham LLC and Research Road LLC are commercial establishments that had failing septic systems and limited alternatives for wastewater disposal. They requested to tie into the MWRA system from their sites in Hingham via a 1,900 linear foot force main connecting to the Weymouth sewer system; their discharges were collectively estimated to be 4,500 gallons per day, or less, with no discharge of industrial wastes proposed, broken down as follows, 2,025 gpd from Research Road (105 Research Road) and 2,475 gpd from Campanelli. The MWRA Board of Directors approved the connections in February 2004, with the requirements that the applicants work cooperatively with MWRA to realize a four to one verifiable reduction in flow to the MWRA wastewater system, and pay entrance fees prior to connection (Research Road's entrance fee was $9,133: Campanelli's fee was $11,162, both of which were paid in full). As mentioned above 105 Research Road was converted and expanded to house the South Shore Educational Collaborative and the increased wastewater discharge associated with this conversion was approved in 2012.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 16, 2014
SUBJECT: FY14 Financial Update and Summary

COMMITTEE: Administration, Finance & Audit

_X_ INFORMATION
___ VOTE

Kathy Soni, Budget Director
David Whelan, Budget Manager
Preparer/Title

Rachel C. Madden
Director, Administration and Finance

RECOMMENDATION:

For information only. This staff summary provides the financial update and variance highlights through March 2014, comparing actual spending to the FY14 Budget and a preliminary year-end projection for the Current Expense Budget.

DISCUSSION:

Total year-to-date expenses are lower than budget by $3.3 million or 0.7% due to lower direct expenses of $2.2 million, lower debt service expense of $854,000 due to the receipt of Debt Service Assistance (DSA) from the Commonwealth of Massachusetts which will be used in FY15 to lower community assessments per the Advisory Board recommendation, lower indirect expenses of $271,000 and higher total non-rate revenues of $1.6 million or 0.3% for a net variance of $4.8 million.

In line with the Authority's long standing multi-year rate strategy, in March $980,000 was transferred to the Defeasance Account as a result of the continued low interest variable rate environment which brought the year-to-date balance to $9.5 million. Without the transfer of the $9.5 million in debt service savings to the Defeasance Account, the total year-to-date budgetary variance through March would have been $14.3 million.

Should the low short-term rates trends continue the underspending is expected at $16.2 million by year-end. Other Debt Service related savings due to the timing of both the MWRA new money borrowing and State Revolving Fund new money borrowing are projected at $3.5 million, resulting in a Defeasance Account balance at year-end of $19.7 million.

Beyond debt service savings, staff projects underspending of $3.5 million for direct expenses, $664,000 for indirect expenses, the effect of $854,000 for receipt of DSA, and greater than budget non-rate revenues of $1.1 million for a total of $6.2 million.

Overall, the year-end favorable variance is projected at approximately $26.0 million. These funds, as in the past few years, will be used as the source to defease debt in the most challenging future years.

Staff will continue to refine the year-end projections each month as more actual spending information becomes available and update the Board accordingly.

Total Expenses were lower than budget by $3.3 million or 0.7% and total Revenues were higher than budget by $1.6 million or 0.3%.

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

	FY14 Budget (March)	FY14 Actual (March)	$ Variance	% Variance
Direct Expenses	$155.3	$153.2	-$2.2	-1.4%
Indirect Expenses	$38.2	$38.0	-$0.3	-0.7%
Debt Service	$294.0	$293.2	-$0.9	-0.3%
Total	**$487.6**	**$484.3**	**-$3.3**	**-0.7%**

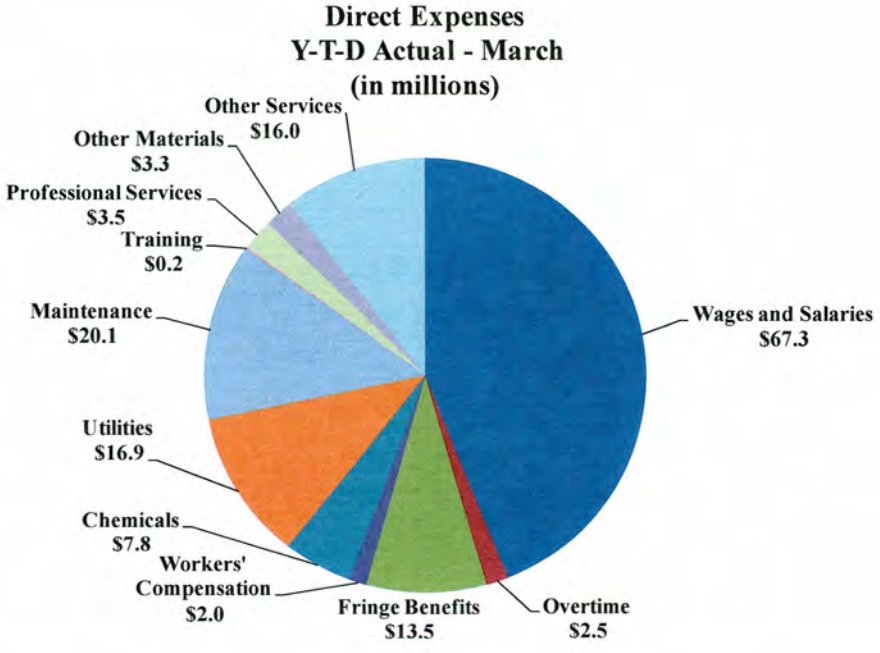
Besides debt service, the largest variances year-to-date are driven by:

- Direct Expenses being lower than budget by $2.2 million for Wages and Salaries, Other Services, Professional Services, Overtime, Utilities, and Chemicals;
- Indirect Expenses being lower than budget by $271,000 mainly for lower Watershed Payment in Lieu of Taxes (PILOT) expenses and lower Insurance expenses, mostly for claims; and
- Revenues exceeding budget by $1.6 million due to Non-Rate Revenue of $1.3 million mainly due to $427,000 for the sale of unbudgeted emergency water for the Town of Hudson, $233,000 receipt of a Homeland Security grant for the Carroll Plant security gate, $186,000 for the sale of surplus equipment, $152,000 for higher energy revenue due to higher Demand Response and Renewable Portfolio Standard (RPS) sales, and higher investment income of $205,000.

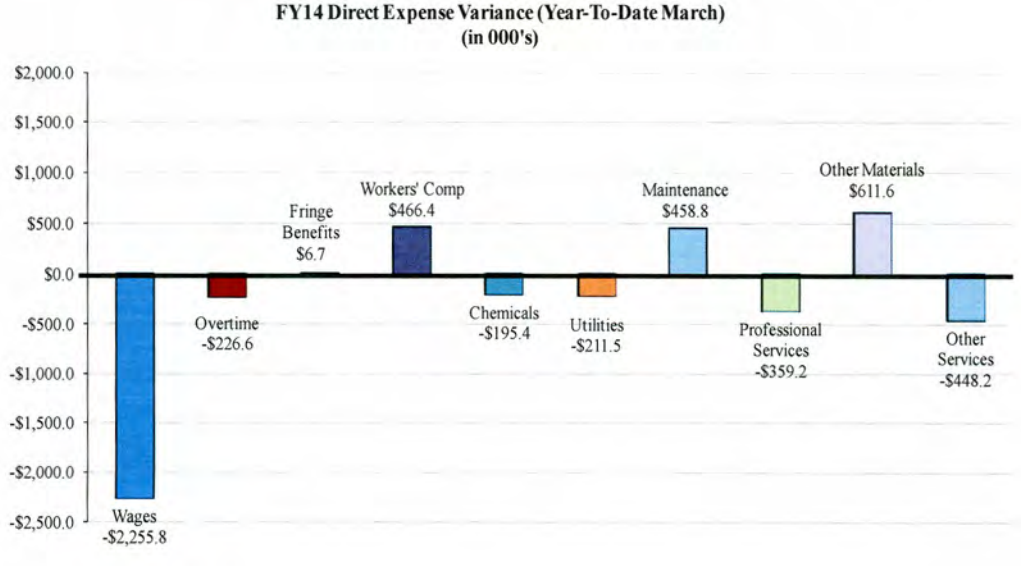
Please refer to Attachment 1 for a more detailed comparison by line item.

Direct Expenses

Direct expenses total $153.2 million, $2.2 million or 1.4% lower than budget.

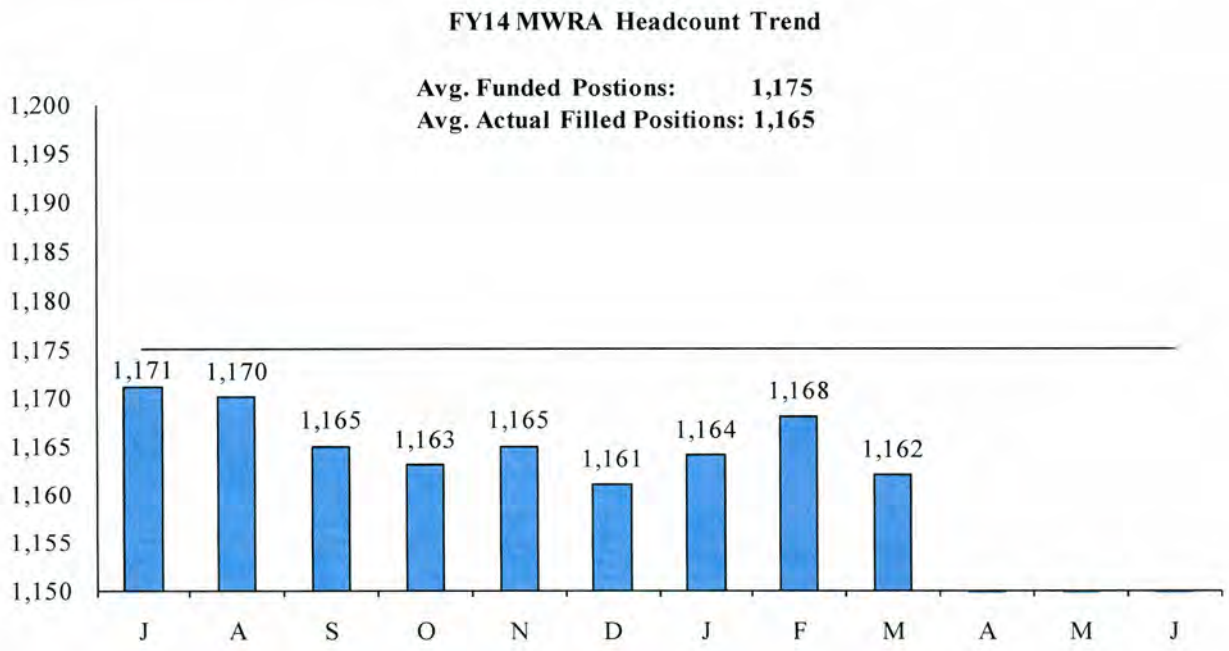


The underspending on direct expenses is related to Wages and Salaries, Other Services, Professional Services, Overtime, Utilities, and Chemicals offset by overspending for Other Materials, Workers' Compensation, and Maintenance.



Wages and Salaries

Wages and Salaries are underspent by $2.3 million or 3.2% mainly as a result of lower than budget filled positions, the salary mix differential between staff retiring at higher rates and new hires coming on board at lower rates, and higher than budget leave time use. The average actual filled positions were 10 positions lower than the 1,175 positions funded in the budget. Additionally, MWRA currently has 4 temporary employees.



Other Services

Other Services are underspent by $448,000 or 2.7% year-to-date. The majority of the variance is due to lower than budget sludge quantities. Sludge quantities year-to-date are approximately 6% lower, 95.9 tons average per day versus 102.1 tons budgeted. This underspending is offset by higher than budget spending for space/lease rentals, police details, and membership/dues.

Professional Services

Professional Services are underspent by $359,000 or 9.2% year-to-date mainly due to lower than budget need for as-needed engineering support and timing of Wastewater Leak Detection survey work of $244,000 and lower than budget report preparation and as-needed services for the Harbor Monitoring program of $80,000. Some of the underspending is timing related.

Overtime

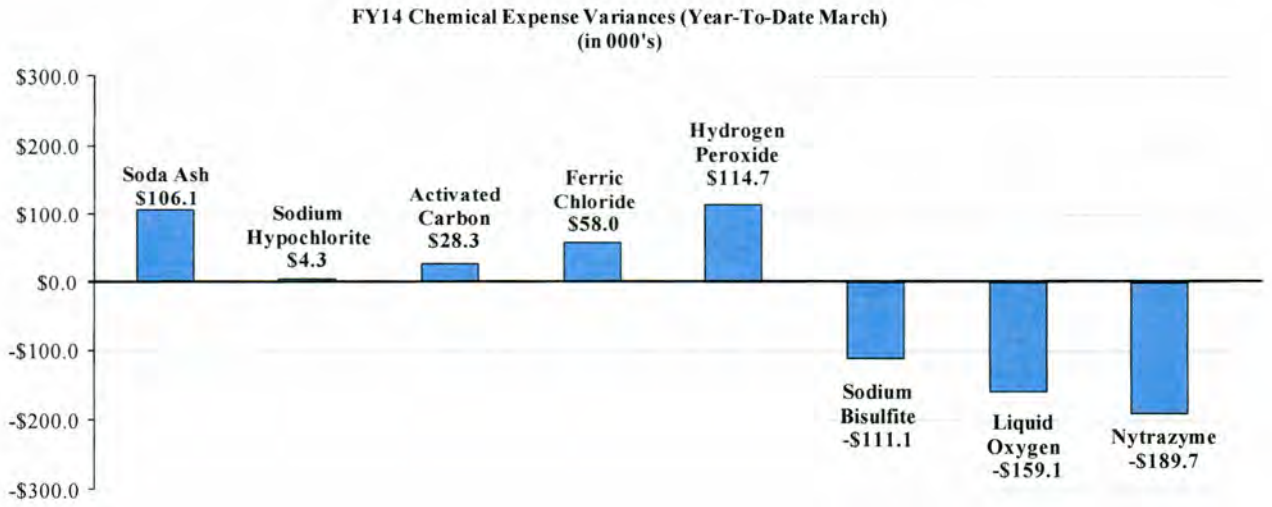
Overtime is underspent by $227,000 or 8.3% and is mainly due to lower than projected emergency wet weather events.

Utilities

Utilities are underspent by $212,000 or 1.2% primarily due to lower than budget purchases and favorable pricing of Diesel Fuel at Deer Island of $288,000 and lower Water and Natural Gas use of $55,000 and $44,000 respectively offset by higher Electricity of $130,000 mainly due to winter congestion pricing.

Chemicals

Chemicals are underspent by $195,000 or 2.4% year-to-date mainly due to lower than budget need for Nitrazyme of $190,000 due to Town of Framingham system modifications, Liquid Oxygen $159,000 due to lower pricing and volume, and Sodium Bisulfite of $111,000. Underspending is offset by overspending for Hydrogen Peroxide of $115,000 for increased need for pretreatment of hydrogen sulfide gas as well as Soda Ash of $106,000 and Ferric Chlroide of $58,000 due to increased dosing.

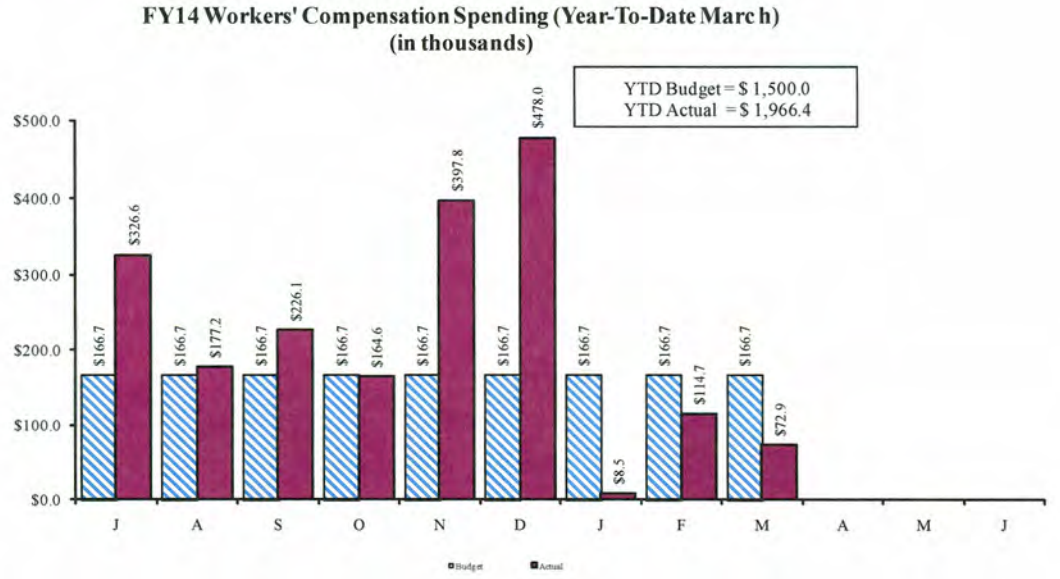


Other Materials

Other Materials are over budget by $612,000 or 22.6% mainly due to timing of vehicle purchases and purchase of unbudgeted gas detection equipment offset by lower than projecting spending for Equipment/Furniture, Computer Hardware, and Lab and Testing supplies. Some of the underspending is related to timing.

Workers' Compensation

Workers' Compensation expenses are higher than budget by $466,000 or 31.1%. To date, actual medical expenses are $372,000 higher than budget. During March, actual spending including the reserves is less than budget by $94,000.



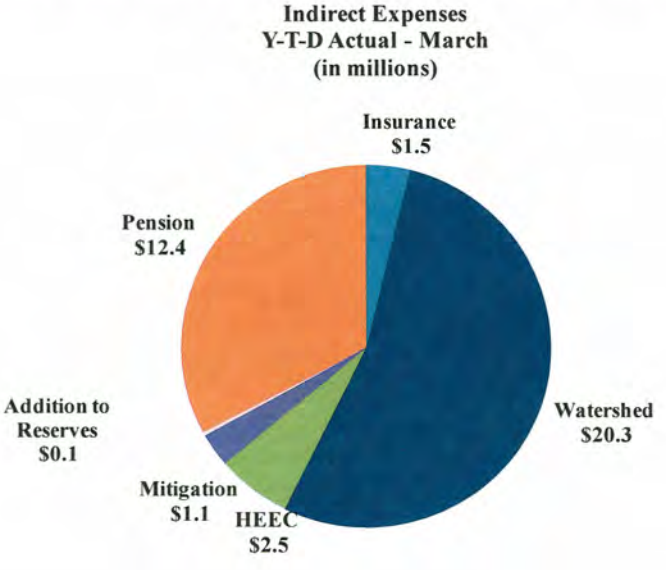
# of Open Claims-Lost Time	76	69	67	63	60	62	67	68	72			
# of Open Claims-Medical Only	25	27	22	27	24	28	23	30	26			

Maintenance

Maintenance is overspent by $459,000 or 2.3% year-to-date. Material purchases are greater than budget by $1.4 million and services are underspent by $904,000. Some of the variance is timing related.

Indirect Expenses

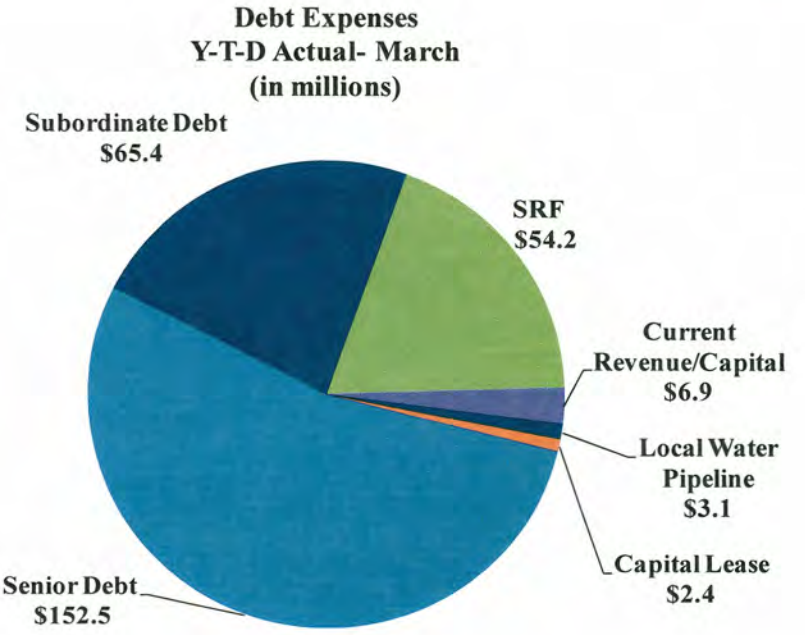
Indirect expenses total $38.0 million, $271,000 or 0.7% lower than budget.



The majority of the year-to-date underspending on Indirect Expenses is for Watershed Reimbursement expenses of $130,000 mainly for lower Payment in Lieu of Taxes (PILOT) expense and lower insurance expenses of $108,000, mostly related to claims.

Debt Service Expenses

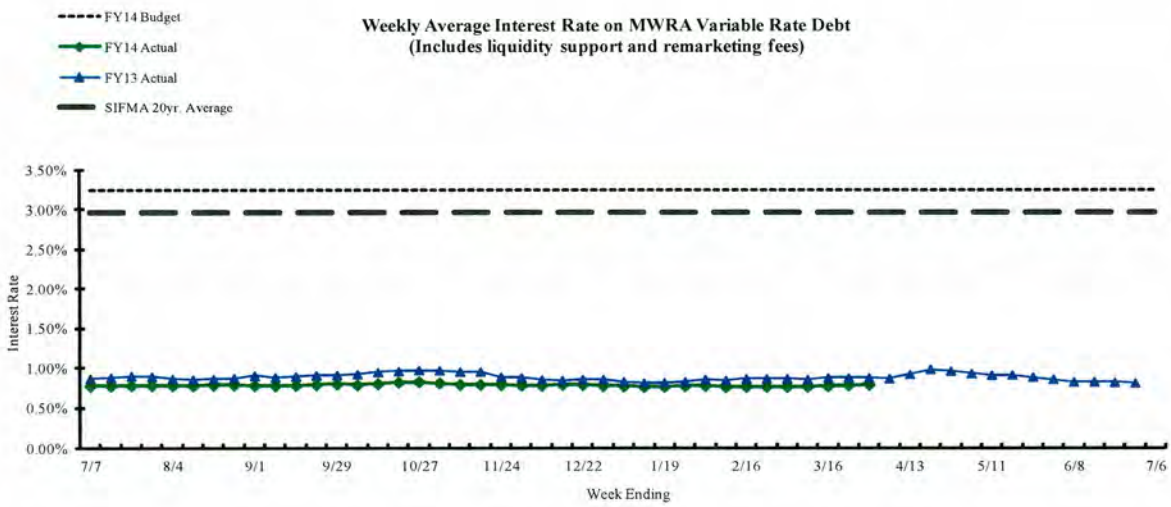
Debt Service expenses include the principal and interest payment for fixed debt, the variable subordinate debt, and the State Revolving Fund (SRF) obligation, the commercial paper program for the local water pipeline projects, current revenue for capital, and the Chelsea facility lease payment.



Debt Service expenses through March totaled $293.2 million, $854,000 below budget level after the transfer of $9.5 million of a favorable year-to-date variance to the Defeasance Account.

The variance of $854,000 is due to the receipt of Debt Service Assistance from the Commonwealth of Massachusetts which will be used in FY15 to lower community assessments per the Advisory Board's recommendation.

The graph below reflects the variable rate trend by month over the past year in comparison with FY13 Actuals and the FY14 Budget for the same period.



Revenue

Year-to-date revenue for FY14 totals $495.9 million which is $1.6 million or 0.3% higher than budget due to higher non-rate revenue of $1.3 million and higher Investment Income of $205,000.

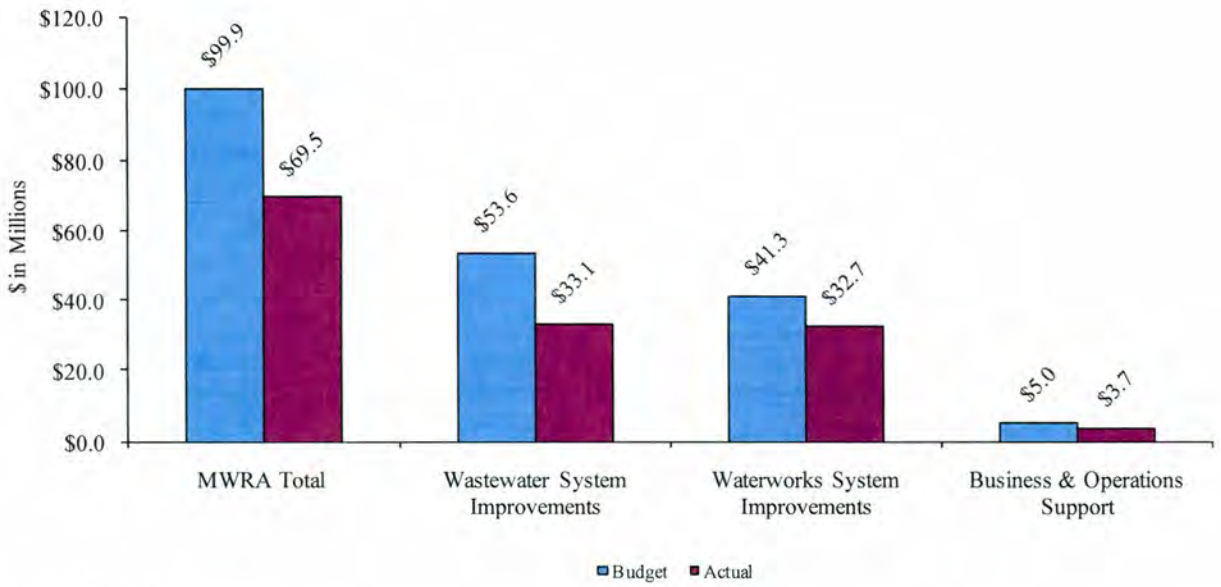
The higher non-rate Revenue of $1.3 million is mainly due to $427,000 for the sale of unbudgeted emergency water for the Town of Hudson, $233,000 receipt of a Homeland Security grant for the Carroll Plant security gate, $186,000 for the sale of surplus equipment, $152,000 for higher energy revenue due to higher Demand Response and Renewable Portfolio Standard (RPS) sales, and approximately $349,000 for a variety of vendor rebates and other smaller items.

FY14 Capital Improvement Program

Spending year-to-date in FY14 totals $69.5 million, $30.4 million or 30.5% lower than budget. After accounting for programs which are not directly under MWRA's control, most notably the Inflow and Infiltration (I/I) program, the Local Water Pipeline program, and the community managed Combined Sewer Overflow (CSOs) projects, the underspending is $23.3 million or 34.5%.

Underspending was reported in all programs: Wastewater of $20.5 million, Waterworks of $8.6 million, and Business and Operations Support of $1.3 million.

FY14 CIP Spending
(Year-To-Date March)



Spending By Program:

$ in Millions	Budget	Actuals	$ Var.	% Var.
Wastewater System Improvements				
Interception & Pumping	5.7	4.2	-1.5	-25.9%
Treatment	17.2	10.1	-7.1	-41.2%
Residuals	0.3	0.2	-0.1	-27.0%
CSO	31.0	14.0	-16.9	-54.7%
Other	-0.5	4.5	5.0	-1063.0%
Total Wastewater System Improvements	**$53.6**	**$33.1**	**-$20.5**	**-38.3%**
Waterworks System Improvements				
Drinking Water Quality Improvements	26.3	19.7	-6.6	-25.1%
Transmission	5.5	3.7	-1.7	-31.6%
Distribution & Pumping	7.5	3.1	-4.3	-58.1%
Other	2.0	6.1	4.1	200.8%
Total Waterworks System Improvements	**$41.3**	**$32.7**	**-$8.6**	**-20.9%**
Business & Operations Support	**$5.0**	**$3.7**	**-$1.3**	**-25.4%**
Total MWRA	**$99.9**	**$69.5**	**-$30.4**	**-30.5%**

The main reasons for underspending were:

1. **Combined Sewer Overflow (CSOs)** of $16.9 million – primarily due to the Cambridge Sewer Separation payment of $13.9 million which is lower than originally estimated, Reserved Channel of $1.3 million due to timing of expenditures, $1.1 million South Dorchester Bay Sewer Separation – Commercial Point as Inflow/Infiltration work is now scheduled for FY15 vs. FY14, and North Dorchester Bay of $500,000 mainly due to reduced scope for outfall design and resident inspection work.

2. **Treatment** of $7.1 million – mainly for lower spending on North Main Pump Station (NMPS) VFD Replacement Construction of $2.3 million, Scum Skimmer Replacement of $1.5 million, NMPS Butterfly Valve Replacement of $763,000, Centrifuge Backdrive Replacement of $690,000, Electrical Equipment Upgrade Construction of $655,000, HVAC Equipment Replacement Design of $515,000, Clinton Digester Cleaning of $438,000, Fire Alarm System Replacement Design of $350,000, Thermal Plant Boiler Controls of $333,000, Power System Improvement of $300,000 and additional net project underspending of $377,000. Offset by overspending for Digester Modules 1 and 2 of $810,000 and Expansion Joint Repair Construction 2 of $342,000.

3. **Drinking Water Quality Improvements** of $6.6 million – mainly for lower than budget spending for the Spot Pond Covered Storage Tank of $4.9 million mainly for site issues and timing of equipment purchases, Carroll Water Treatment Plant of $1.1 million mainly due to delays for modifications to existing maintenance facilities, and Quabbin Water Treatment Plant of $618,000 due to delay in tie-in of new facility to existing Chicopee Valley Aqueduct. Offset by overspending on Blue Hills Covered Storage of $26,000 for FY13 work invoiced in FY14.

4. **Water Distribution and Pumping** of $4.3 million – for lower spending on Weston Aqueduct Supply Mains of $2.4 million for lower than budget award for WASM 3 Design and work anticipated in FY14 but completed in FY13 for Watertown Section Rehabilitation, Northern Intermediate High of $1.0 million primarily due to timing of electrical equipment delivery and lower award for Gillis Pump Station Improvements and lower than anticipated design services for Section 89 & 29 Redundancy, Valve Replacement of $375,000 due to timing of equipment purchases, Southern Spine Distribution Mains of $289,000 due to the completion of Section 21, 43, & 22 Design Project below budget, and Lynnfield Pipeline of $224,000 due to timing.

5. **Water Transmission** of $1.7 million – mainly for lower than budget spending for Watershed Land of $960,000, Hultman Rehabilitation of $613,000, and Dam Projects of $243,000.

6. **Wastewater Interception and Pumping** of $1.5 million – primarily due to Nut Island Headworks Electric and Gas Conveyance construction project of $1.3 million due to award being less than budget and North System Hydraulic Study of $184,000 due to time extension.

The underspending was offset by overspending for the Community Financial Assistance Programs:

1. **Wastewater Other** of $5.0 million – primarily due to Inflow and Infiltration (I/I) community requests for grants and loans being greater than budget.

2. **Waterworks Other** of $4.1 million – primarily due to Local Water Pipeline Assistance Program community requests for grants being greater than budget.

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Construction Fund Balance

The construction fund balance was at $58 million as of March 2014. Commercial Paper availability was at $206 million to fund construction projects.

Attachment 1 – Variance Summary March 2014
Attachment 2 – Current Expense Variance Explanations
Attachment 3 – Capital Improvement Program Variance Explanations
Attachment 4 – FY14 Projection versus FY14 Approved Budget

ATTACHMENT 1

	March 2014 Year-to-Date					
	Period 9 YTD Budget	Period 9 YTD Actual	Period 9 YTD Variance	%	FY14 Approved	% Expended
EXPENSES						
WAGES AND SALARIES	$ 69,515,077	$ 67,259,242	$ (2,255,835)	-3.2%	$ 94,874,284	70.9%
OVERTIME	2,735,435	2,508,787	(226,648)	-8.3%	3,580,025	70.1%
FRINGE BENEFITS	13,502,040	13,508,742	6,702	0.0%	18,063,825	74.8%
WORKERS' COMPENSATION	1,500,000	1,966,409	466,409	31.1%	2,000,000	98.3%
CHEMICALS	7,982,986	7,787,552	(195,434)	-2.4%	10,671,225	73.0%
ENERGY AND UTILITIES	17,156,661	16,945,150	(211,511)	-1.2%	22,760,588	74.4%
MAINTENANCE	19,641,708	20,100,543	458,835	2.3%	27,761,580	72.4%
TRAINING AND MEETINGS	214,342	211,184	(3,158)	-1.5%	330,917	63.8%
PROFESSIONAL SERVICES	3,896,737	3,537,559	(359,178)	-9.2%	6,083,402	58.2%
OTHER MATERIALS	2,709,963	3,321,577	611,614	22.6%	5,969,470	55.6%
OTHER SERVICES	16,480,639	16,032,454	(448,185)	-2.7%	22,278,700	72.0%
TOTAL DIRECT EXPENSES	**$ 155,335,588**	**$ 153,179,199**	**$ (2,156,390)**	**-1.4%**	**$ 214,374,016**	**71.5%**
INSURANCE	$ 1,570,214	$ 1,462,148	$ (108,066)	-6.9%	$ 2,093,618	69.8%
WATERSHED/PILOT	20,411,125	20,281,095	(130,030)	-0.6%	27,214,833	74.5%
BECo PAYMENT	2,513,442	2,506,490	(6,952)	-0.3%	3,346,854	74.9%
MITIGATION	1,175,098	1,133,778	(41,320)	-3.5%	1,566,797	72.4%
ADDITIONS TO RESERVES	126,978	126,978	-	0.0%	169,304	75.0%
RETIREMENT FUND	12,431,515	12,447,338	15,823	0.1%	12,431,515	100.1%
TOTAL INDIRECT EXPENSES	**$ 38,228,372**	**$ 37,957,827**	**$ (270,544)**	**-0.7%**	**$ 46,822,921**	**81.1%**
STATE REVOLVING FUND	$ 54,191,787	$ 54,191,787	$ -	0.0%	$ 75,960,616	71.3%
SENIOR DEBT	152,503,477	152,503,477	-	0.0%	204,471,302	74.6%
CORD FUND	-	-	-	---	132,238	0.0%
DEBT SERVICE ASSISTANCE	-	(853,660)	(853,660)	---	-	0.0%
CURRENT REVENUE/CAPITAL	6,900,000	6,900,000	-	0.0%	9,200,000	75.0%
SUBORDINATE MWRA DEBT	74,938,611	74,938,611	-	0.0%	100,117,241	74.9%
LOCAL WATER PIPELINE CP	3,095,858	3,095,858	-	0.0%	4,127,810	75.0%
CAPITAL LEASE	2,412,795	2,412,795	-	0.0%	3,217,060	75.0%
VARIABLE DEBT	-	(9,543,536)	(9,543,536)	---	-	0.0%
DEFEASANCE ACCOUNT	-	9,543,536	9,543,536	---	-	0.0%
TOTAL DEBT SERVICE	**$ 294,042,528**	**$ 293,188,868**	**$ (853,660)**	**-0.3%**	**$ 397,226,267**	**73.8%**
TOTAL EXPENSES	**$ 487,606,488**	**$ 484,325,894**	**$ (3,280,594)**	**-0.7%**	**$ 658,423,204**	**73.6%**
REVENUE & INCOME						
RATE REVENUE	$ 471,540,750	$ 471,540,750	$ -	0.0%	$ 628,721,000	75.0%
OTHER USER CHARGES	5,893,869	5,846,783	(47,086)	-0.8%	8,127,379	71.9%
OTHER REVENUE	5,260,816	6,655,215	1,394,399	26.5%	6,444,291	103.3%
RATE STABILIZATION	2,625,000	2,625,000	-	0.0%	3,500,000	75.0%
INVESTMENT INCOME	9,064,318	9,269,717	205,399	2.3%	11,630,534	79.7%
TOTAL REVENUE & INCOME	**$ 494,384,753**	**$ 495,937,465**	**$ 1,552,712**	**0.3%**	**$ 658,423,204**	**75.3%**

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY14 Budget YTD March	FY14 Actuals YTD March	FY14 YTD Actual vs. FY14 Budget		Explanations
			$	%	
Direct Expenses					
Wages & Salaries	69,515,077	67,259,242	(2,255,835)	-3.2%	Underspending is due to lower headcount, the salary mix differential between staff retiring at higher rates and new hires coming on board at lower rates, and higher than budgeted use of accrued leave time. At the end of March, the average filled positions year-to-date were 1,165, 10 positions less than the 1,175 funded positions.
Overtime	2,735,435	2,508,787	(226,648)	-8.3%	Lower than projected emergency wet weather events.
Fringe Benefits	13,502,040	13,508,742	6,702	0.0%	Primarily at budgeted levels.
Worker's Compensation	1,500,000	1,966,409	466,409	31.1%	Overspending primarily due to medical expenses being $372k higher than budget. In March, actual spending including the reserves is less than budget by $94k.
Chemicals	7,982,986	7,787,552	(195,434)	-2.4%	Underspending for Nitrazyme of $190k due to Town of Framingham system modifications, Liquid Oxygen of $159k due to lower pricing and volume, and Sodium Bisulfite of $111k, offset by overspending for Hydrogen Peroxide of $115k for increased need for pretreatment of hydrogen sulfide gas as well as Soda Ash of $106k and Ferric Chloride of $58k due to increased dosing.
Utilities	17,156,661	16,945,150	(211,511)	-1.2%	Underspending for Diesel Fuel mainly at Deer Island of $288k due to lower than budgeted purchase and favorable pricing, Water of $55k, and Natural Gas of $44k offset by higher Electricity of $130k mainly for winter congestion pricing.
Maintenance	19,641,708	20,100,543	458,835	2.3%	Material purchases are greater than budgeted by $1.4 million and services are underspent by $904k. Some of the variance is timing related.

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY14 Budget YTD March	FY14 Actuals YTD March	FY14 YTD Actual vs. FY14 Budget		Explanations
			$	%	
Training & Meetings	214,342	211,184	(3,158)	-1.5%	
Professional Services	3,896,737	3,537,559	(359,178)	-9.2%	Underspending of $244k mainly for lower than budgeted need for as-needed engineering support and timing of Wastewater Leak Detection survey work as well as lower than budgeted report preparation and as-needed services for the Harbor Monitoring program of $80k some of which is timing related.
Other Materials	2,709,963	3,321,577	611,614	22.6%	Higher spending for Vehicle Purchases of $713k due to timing and unbudgeted gas detection equipment of $120k, offset by underspending for Equipment/Furniture of $204k and Computer Hardware of $71k. Some of the underspending is related to timing.
Other Services	16,480,639	16,032,454	(448,185)	-2.7%	Underspending for Sludge Pelletization of $501k due to lower than budgeted sludge quantities (y-t-d 95.9 tpd vs. 102.1 tpd budgeted), Other Services of $69k, and Grit & Screenings Removal of $60k, offset by higher spending for Space Lease/Rentals of $91k, Police Details of $55k, and Membership/dues of $49k.
Total Direct Expenses	**155,335,588**	**153,179,199**	**(2,156,390)**	**-1.4%**	
Indirect Expenses					
Insurance	1,570,214	1,462,148	(108,066)	-6.9%	Lower spending for Claims of $104k and Premiums of $4k.
Watershed/PILOT	20,411,125	20,281,095	(130,030)	-0.6%	Lower PILOT (Payment in Lieu of Taxes) expense of $134k.
HEEC Payment	2,513,442	2,506,490	(6,952)	-0.3%	
Mitigation	1,175,098	1,133,778	(41,320)	-3.5%	Lower Mitigation for Quincy of $25k and Winthrop of $16k.
Addition to Reserves	126,978	126,978	-	0.0%	
Pension Expense	12,431,515	12,447,338	15,823	0.1%	
Post Employee Benefits	-	-	-		
Total Indirect Expenses	**38,228,372**	**37,957,827**	**(270,545)**	**-0.7%**	

ATTACHMENT 2
Current Expense Variance Explanations

Total MWRA	FY14 Budget YTD March	FY14 Actuals YTD March	FY14 YTD Actual vs. FY14 Budget		Explanations
			$	%	
Debt Service					
Debt Service	294,042,528	294,042,528	-	0.0%	Debt Service expenses are at the budgeted level after the transfer of $9.5 million of a favorable year-to-date variance to the Defeasance Account.
Debt Service Assistance	-	(853,660)	(853,660)		The variance of $854k is due to the receipt of Debt Service Assistance from the Commonwealth of Massachusetts which will be used in FY15 to lower community assessments.
Total Debt Service Expenses	**294,042,528**	**293,188,868**	**(853,660)**	**-0.3%**	
Total Expenses	**487,606,488**	**484,325,894**	**(3,280,594)**	**-0.7%**	
Revenue & Income					
Rate Revenue	471,540,750	471,540,750	-	0.0%	
Other User Charges	5,893,869	5,846,783	(47,086)	-0.8%	
Other Revenue	5,260,816	6,655,215	1,394,399	26.5%	Higher non-rate Revenue is mainly due to $427k for the sale of unbudgeted emergency water for the Town of Hudson, $233k receipt of a Homeland Security grant for the Carroll Plant security gate, $186k for the sale of surplus equipment, $152k for higher energy revenue due to higher Demand Response and Renewable Portfolio Standard (RPS) sales, and approximately $349k for a variety of vendor rebates and other smaller items.
Rate Stabilization	2,625,000	2,625,000	-	0.0%	
Investment Income	9,064,318	9,269,717	205,399	2.3%	
Total Revenue	**494,384,753**	**495,937,465**	**1,552,712**	**0.3%**	
Net Revenue in Excess of Expenses	**6,778,265**	**11,611,571**	**4,833,306**		

ATTACHMENT 3
Capital Improvement Program Variance Explanations

	FY14 Budget YTD March	FY14 Actuals YTD March	YTD Actuals vs. Budget		Explanations
			$	%	
Interception & Pumping (I&P)	$5,702	$4,227	($1,476)	-25.9%	Underspending mainly due to lower than budgeted award for Nut Island Electrical & Grit/Screens Conveyance - Construction contract of $1.3M, and North System Hydraulic Study of $184,000.
Treatment	$17,166	$10,097	($7,069)	-41.2%	Underspending on North Main Pump Station VFD Replacement Construction of $2.3M and Centrifuge Backdrive Replacement of $690,000 due to timing of equipment delivery, Scum Skimmer Replacement of $1.5M due to contractor delays caused by equipment submittals, NMPS & WTF Butterfly Valve Replacements of $763,000 and Clinton Digester Cleaning & Rehabilitation of $438,000 due to schedule shifts, and Electrical Equipment Upgrades - Construction 4 of $655,000 due to timing. Offset by overspending on Digester Modules 1 and 2 Pipe Replacement of $810,000 and Expansion Joint Repair Construction 2 of $342,000 due to work scheduled for FY13 performed in FY14.
Residuals	$257	$188	($69)	-27.0%	
CSO	$30,952	$14,025	($16,926)	-54.7%	Underspending on Cambridge Sewer Separation of $13.9M primarily due to timing of anticipated expenditures for contracts 8B and 9, Reserved Channel Sewer Separation of $1.3M due to timing of expenditures, South Dorchester Sewer Separation (Commercial Point) of $1.1M due to schedule change for inflow removal work, and North Dorchester Bay Outfall of $401,000 due to reduced scope resulting in less than anticipated design services.
Other Wastewater	($471)	$4,534	$5,005	-	Overspending on Infiltration and Inflow (I/I) due to community requests for grants and loans being greater than budgeted.
Total Wastewater	**$53,607**	**$33,071**	**($20,535)**	**-38.3%**	
Drinking Water Quality Improvements	$26,314	$19,716	($6,598)	-25.1%	Underspending for Spot Pond Storage Facility of $4.9M mainly for site issues and timing of equipment purchases, Carroll Water Treatment Plant of $1.1M mainly for Existing Facility Modifications, CP7 - Design due to schedule shift, and Quabbin Water Treatment Plant of $618,000 mainly for Ultraviolet Disinfection Construction due to delay in tie-in of new facility to existing Chicopee Valley Aqueduct.

ATTACHMENT 3
Capital Improvement Program Variance Explanations

	FY14 Budget YTD March	FY14 Actuals YTD March	YTD Actuals vs. Budget		Explanations
			$	%	
Transmission	$5,477	$3,745	($1,733)	-31.6%	Underspending for Watershed Land of $960,000 due to the timing of land acquisitions, Hultman Aqueduct Rehabilitation of $613,000 mainly due to updated costs and timing of final work, and Dam Projects of $243,000 due to less than anticipated design services.
Distribution & Pumping	$7,491	$3,141	($4,350)	-58.1%	Underspending on Weston Aqueduct Supply Mains of $2.4M mainly due to the award being lower than budget for WASM3 Design/Construction Administration/Resident Inspection of $1.6M and work anticipated in FY14 but completed in FY13 for Watertown Section Rehabilitation of $641,000, Northern Intermediate High Redundancy & Storage of $1.0M mainly due to lower award for Gillis Pump Station Improvements and less than anticipated design services. Also, underspending on Valve Replacement of $375,000 due to timing of equipment purchases, Southern Spine Distribution Mains $289,000 due to the completion of Sections 21, 43 & 22 Design below budget, and Lynnfield Pipeline of $224,000 due to timing of final construction work.
Other Waterworks	$2,017	$6,068	$4,051	200.8%	Overspending on Local Water Pipeline Assistance Program due to community requests for loans being greater than budgeted by $4.1M.
Total Waterworks	**$41,299**	**$32,670**	**($8,629)**	**-20.9%**	
Business & Operations Support	$4,994	$3,726	($1,268)	-25.4%	Underspending on Alternative Energy Initiatives of $987,000 mainly due to the Deer Island Wind Turbine repairs being funded via warranty and lower than projected as-needed technical assistance for energy initiatives, Centralized Equipment Purchase of $379,000 due to timing of security equipment purchases, and Capital Maintenance Planning & Development. Offset by overspending of MIS-related projects of $790,000 due to progress of IT Strategic Plan implementation.
Total MWRA	**$99,899**	**$69,467**	**($30,433)**	**-30.5%**	

ATTACHMENT 4

FY14 Projection vs FY14 Approved Budget

TOTAL MWRA	FY14 Approved Budget	FY14 Projection	Change FY14 Projection vs FY14 Approved Budget	
			$	%
EXPENSES				
WAGES AND SALARIES	$ 94,874,284	$ 91,964,696	$ (2,909,588)	-3.1%
OVERTIME	3,580,025	3,427,072	(152,953)	-4.3%
FRINGE BENEFITS	18,063,825	18,072,137	8,312	0.0%
WORKERS' COMPENSATION	2,000,000	2,600,358	600,358	30.0%
CHEMICALS	10,671,225	10,527,640	(143,585)	-1.3%
ENERGY AND UTILITIES	22,760,588	22,507,652	(252,936)	-1.1%
MAINTENANCE	27,761,580	28,290,162	528,582	1.9%
TRAINING AND MEETINGS	330,917	314,190	(16,727)	-5.1%
PROFESSIONAL SERVICES	6,083,402	5,458,377	(625,025)	-10.3%
OTHER MATERIALS	5,969,470	5,834,079	(135,391)	-2.3%
OTHER SERVICES	22,278,700	21,838,437	(440,263)	-2.0%
TOTAL DIRECT EXPENSES	**$ 214,374,017**	**$ 210,834,800**	**$ (3,539,215)**	**-1.7%**
INSURANCE	$ 2,093,618	$ 2,000,101	$ (93,517)	-4.5%
WATERSHED/PILOT	27,214,833	26,636,833	(578,000)	-2.1%
HEEC PAYMENT	3,346,854	3,379,550	32,696	1.0%
MITIGATION	1,566,797	1,525,477	(41,320)	-2.6%
ADDITIONS TO RESERVES	169,304	169,304	-	0.0%
RETIREMENT FUND	7,455,103	7,470,926	15,823	0.2%
POSTEMPLOYMENT BENEFITS/ ADDITIONAL PENSION DEPOSIT	4,976,411	4,976,411	-	0.0%
TOTAL INDIRECT EXPENSES	**$ 46,822,920**	**$ 46,158,603**	**$ (664,317)**	**-1.4%**
STATE REVOLVING FUND	$ 75,960,617	$ 73,548,811	$ (2,411,805)	-3.2%
SENIOR DEBT	204,471,302	203,337,968	(1,133,333)	-0.6%
DEBT SERVICE ASSISTANCE	-	(853,660)	(853,660)	
CURRENT REVENUE/CAPITAL	9,200,000	9,200,000	-	0.0%
SUBORDINATE MWRA DEBT	100,117,241	100,117,241	-	0.0%
LOCAL WATER PIPELINE CP	4,127,811	341,921	(3,785,890)	-91.7%
CAPITAL LEASE	3,217,060	3,217,060	-	0.0%
VARIABLE DEBT	-	(12,441,396)	(12,441,396)	
CORE FUND DEPOSIT	132,238	132,238	-	0.0%
DEFEASANCE ACCOUNT	-	19,772,424	19,772,424	
BOND REDEMPTION	-	-	-	
TOTAL DEBT SERVICE	**$ 397,226,267**	**$ 396,372,607**	**$ (853,660)**	-0.2%
TOTAL EXPENSES	**$ 658,423,205**	**$ 653,366,010**	**$ (5,057,192)**	**-0.8%**
REVENUE & INCOME				
RATE REVENUE	$ 628,721,002	$ 628,721,002	$ -	0.0%
OTHER USER CHARGES	8,127,379	8,127,379	-	0.0%
OTHER REVENUE	6,444,291	7,540,291	1,096,000	17.0%
RATE STABILIZATION	3,500,000	3,500,000	-	0.0%
INVESTMENT INCOME	11,630,534	11,630,534	-	0.0%
TOTAL REVENUE & INCOME	**$ 658,423,205**	**$ 659,519,204**	**$ 1,096,000**	**0.2%**
VARIANCE		$ (6,153,194)	$ 6,153,194	

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 16, 2014
SUBJECT: Approval of Standby Bond Purchase and Direct Purchase Agreements

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COMMITTEE: Administration, Finance & Audit

Thomas J. Durkin, Treasurer
Matthew R. Horan, Deputy Treasurer MH
Preparer/Title

X VOTE
___INFORMATION

Rachel C. Madden
Director, Administration & Finance

RECOMMENDATION:

To approve the recommendation of the Selection Committee to award a Direct Purchase Agreement in the principal amount not-to-exceed $114,755,000 to Bank of America and a Standby Bond Purchase Agreement in the principal amount not-to-exceed $50,000,000 to Bank of New York Mellon;

To adopt the Sixty-Seventh Supplemental Resolution authorizing the issuance of up to $114,755,000 of Massachusetts Water Resources Authority Multimodal Subordinated General Revenue Refunding Bonds and the supporting Issuance Resolution; and

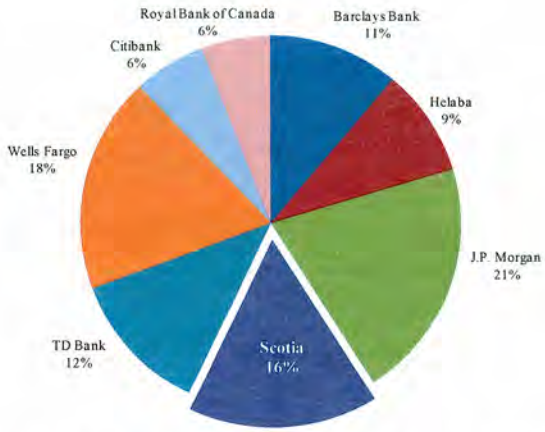
To adopt the Resolution Authorizing Replacement Liquidity Facility for Massachusetts Water Resources Authority Multimodal Subordinated General Revenue Refunding Bonds 2008 Series F.

DISCUSSION:

The Bank of Nova Scotia (Scotia) currently provides a Standby Bond Purchase Agreement (SBPA) on $164.8 million of the $1.0 billion in MWRA variable rate debt currently outstanding. A SBPA provides a line of credit that can be used in the event that bondholders no longer wish to hold bonds and the remarketing agent is unable to place them in the market or hold the bonds themselves. Bonds issued with a SBPA trade on MWRA's subordinate long-term and the bank's short-term credit ratings. Scotia informed MWRA that they made the business decision to no longer provide SBPAs and as a result would not be willing to extend the existing agreement. At the time of issuance, the SBPA becomes an integral component of the bond structure and the Supplemental and Issuance Resolutions allow for the facility to be extended for the life of the bonds. At the end of each extension period, the Bank can opt out of providing the facility with prior notice to MWRA. Typically extending the existing facility at the current market rates is more cost effective because it avoids all legal, rating agency, and bond placement fees associated with a new facility.

Over the last several years, MWRA has actively diversified its variable rate portfolio to limit both exposure to any one provider, as well as the renewal risk caused by having a large par amount of

SBPA or Direct Purchase Agreement bonds reaching the end of their term in any one given period. This diversity is to ensure that potential disruptions caused by any one provider or changes in market conditions at the time of renewal are isolated to a smaller portion of the total portfolio. MWRA has approximately $164.8 million or 16% of its variable rate portfolio backed by Scotia. The following graph shows a breakdown of the variable rate debt portfolio by provider.



In response to the news that Scotia was not going to renew their facility, staff issued a Request for Qualifications Statements/Proposals (RFQ/P) from firms interested in providing a new SBPA, purchasing the bonds through a Direct Purchase Agreement, or providing an "other variable rate product." The other variable rate product category was included in this procurement so MWRA could compare other products used in the market to those that are currently being utilized in its portfolio. One RFQ/P was used to evaluate pricing and other terms for all three categories since many of the providers would likely be able to offer more than one of the products.

Under the replacement SBPA option, the existing bonds would be tendered back to the remarketing agent by the current bondholders and then resold with the new SBPA. As it does now, the interest rate on the bonds would be reset weekly and each week the bondholders would have the opportunity to give up the bonds. The remarketing agent would then either resell them or, if that was not possible, the SBPA bank would have to buy them at higher interest rates. MWRA received competitive proposals for SBPAs with terms ranging from three to five years. The pricing for the SBPAs ranged from a low of 40 basis points for three years to a high of 52 basis points for five years. At the end of that period, MWRA would either extend the existing SBPA or procure a new firm to provide those services.

With the Direct Purchase of the bonds, the existing bonds would be tendered back but instead of being offered in the market, they would all be purchased by the successful proposer (most likely a bank). Under the terms of agreement with the purchaser, MWRA would pay the institution a market floating rate tied to either the Securities Industry and Financial Markets Association (SIFMA) rate, which is a tax exempt rate set weekly, or to a percentage of the London Interbank Offered Rate (LIBOR) which is a taxable rate. Since banks often borrow their own funds based on the LIBOR index, many prefer to have Direct Purchase Agreements based on LIBOR with an adjustment for the tax-exemption. The purchaser of the bonds would hold them for the entire term of the agreement and would not have the ability to put them back on a weekly basis. Under this option, any credit changes to the purchaser would not impact the interest rate MWRA paid on the bonds. MWRA received competitive proposals for Direct Purchase Agreements with terms ranging

from one to seven years. The pricing for the fixed fee component of the Direct Purchase Agreements ranged from a low of 34 basis points for three years to a high of 72 basis points for seven years. At the end of that period, MWRA would either extend the agreement with the existing provider or procure a new firm.

The proposals for Other Variable Rate Products provided a variety of new options on how to structure variable rate debt. These options included Floating Rate Notes which are functionally similar to Direct Purchase Agreements in that they are sold for a fixed time and rate, but are sold to numerous entities. MWRA also received two proposals for products that would allow for variable rate bonds with either daily or weekly interest rate resets without the benefit of a SBPA or other liquidity facility. In the case of these other products, the bondholders would agree to keep the bonds for a fixed period of either six months or three years depending on which product was used.

On March 21, 2014, MWRA received six proposals for Direct Purchase Agreements from Bank of America, Bank of Tokyo/Union Bank N.A., Citi, J.P. Morgan, Santander Bank, and Wells Fargo Bank. Three proposals to provide SBPAs were received from Bank of New York Mellon, Helaba, and TD Bank. After a review of the credit quality of the SBPA proposals it was determined that Helaba did not meet the requirements in MWRA's General Bond Resolution. Six proposals for other variable rate products were received from Barclays, Citi (proposed two different products), Jefferies, Morgan Stanley and Wells Fargo. A proposal was also received from Siebert Brandford Shank &Co., LLC, which was judged to be non-responsive since it failed to offer a product which could be placed into one of the three categories.

The Selection Committee reviewed and ranked the proposals for all three categories described above. Below are the results of the Direct Purchase Agreements and SBPA rankings:

Direct Purchase Agreements

Rank	Firm	Total Points	Total Ranking Points
1	Bank of America	420	5
2	Wells Fargo	372	10
3	Citi	326	18
4	J.P. Morgan	321	20
5	Bank of Tokyo/Union Bank	296	25
6	Santander	281	27

Standby Bond Purchase Agreements

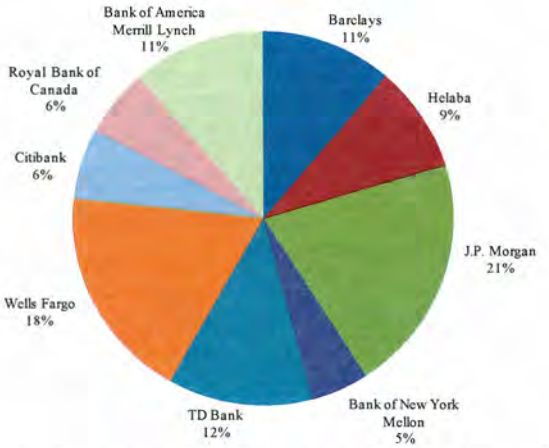
Rank	Firm	Total Points	Total Ranking Points
1	Bank of New York Mellon	404	5
2	TD Bank	316	10

Given the very favorable proposals for SBPAs and Direct Purchase Agreements received by MWRA and the uncertainty, risks and costs associated with the Other Variable Rate Products, it

was determined that staying with proven products (SBPAs and Direct Purchase Agreements) would be the best course of action. Based on the terms offered by the proposers and MWRA's continuing goal to diversify its exposure to any one provider or maturity date, staff are seeking approval to enter into agreements with the top ranked SBPA and Direct Purchase Agreement providers. The following table details the amounts of bonds to be allocated, fixed fee and the term of the agreements by entity.

Bank	Product Type	Allocated Amount	Fee and Term	Annual Fixed Fee
Bank of New York Mellon	SBPA	$ 50,000,000	40 bps for 3 years	$ 200,000
Bank of America -3 years	Direct Purchase Agreement	$ 50,000,000	34bps for 3 years	$ 170,000
Bank of America -5 years	Direct Purchase Agreement	$ 64,755,000	48 bps for 5 years	$ 310,824
Total		$ 164,755,000		$ 680,824

The terms offered by Bank of New York Mellon and Bank of America were favorable for MWRA. Neither bank is currently a provider in MWRA's variable rate portfolio which allows for increased diversity. The following graph details the revised concentration of business partners in MWRA's variable rate portfolio after the proposed transactions are completed.



MWRA is currently in the process of extending the existing SBPA facility with Barclays Bank on the 2008 Series C bonds. The Selection Committee also voted that the rankings developed under this procurement could be utilized to replace the Barclays facility if it could not be extended. In the event that the Barclays facility cannot be extended, staff will present a recommendation to award a new SBPA or Direct Purchase Agreement at the May Board meeting.

BUDGET/FISCAL IMPACT:

There are sufficient funds in the FY14 CEB to pay for the anticipated costs associated with the SBPA and Direct Purchase Agreements. The annual fixed fee of $680,824 plus the interest component will be included in future debt service budgets.

MBE/WBE PARTICIPATION:

No minimum MBE/WBE participation requirements were established due to the lack of subcontracting opportunities.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 16, 2014
SUBJECT: Integrated Financial, Procurement and Human Resources/Payroll Management System Maintenance and Support
Infor Global Solutions (formerly Lawson Associates, Inc.)

COMMITTEE: Administration, Finance, & Audit ___ INFORMATION
X VOTE

Rachel C. Madden
Director, Administration & Finance

Janice B. Watts, Buyer
Russell J. Murray, MIS Director
Joseph S. Barrett, Custom Support Manager
Preparer/Title

Michele S. Gillen
Deputy Director, Administration & Finance

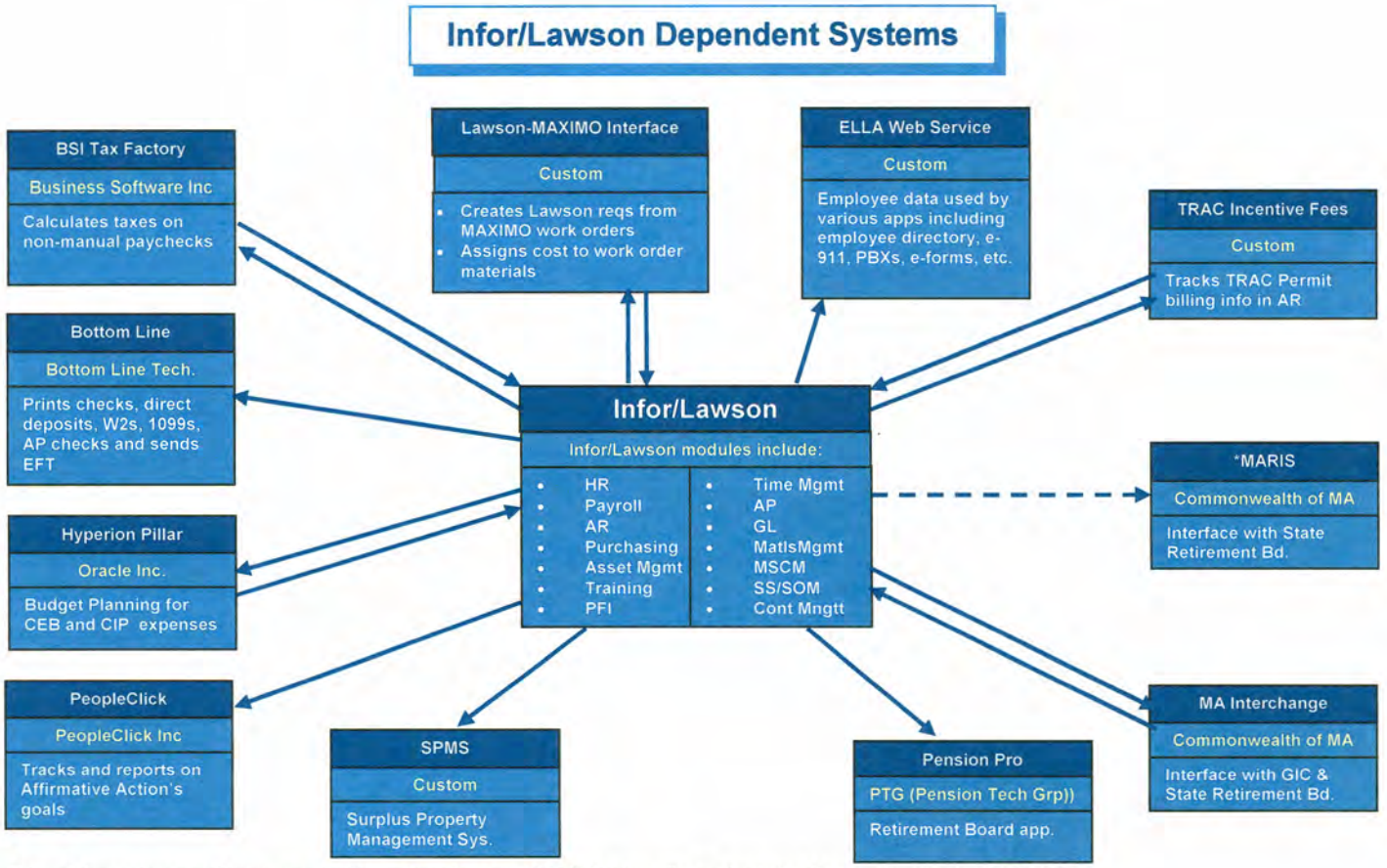
RECOMMENDATION:

To approve the award of a sole source purchase order contract for the annual maintenance and support of the integrated financial, procurement and human resources/payroll management system to Infor Global Solutions (formerly Lawson Associates, Inc.), and to authorize the Executive Director to execute said purchase order contract in an amount not to exceed $338,352.94 for a period of one year, from June 1, 2014 through May 31, 2015.

DISCUSSION:

On March 24, 1999, the Board of Directors approved Contract 6362 with Lawson Associates (now Infor Global Solutions) to implement an integrated financial and procurement management system. In May 2000, the implementation of a Human Resources/Payroll module was included as part of the Lawson System. Today this set of application modules represents the core administrative and financial management functionality for the MWRA (i.e., Human Resources, Payroll, Finance, Procurement, and Materials Management). In addition, the Commonwealth of Massachusetts Records Conservation Board has approved this system as the "system-of-record" for the associated electronic information thus reducing the need for paper records.

In October 2012, as part of an effort to reduce the use of customized applications, use more off-the-shelf products, and respond to the MIS 5-Year Strategic Plan recommendations (including enhancing e-Procurement functionality and reducing paper), the Board of Directors approved the implementation of the Strategic Sourcing, Supplier Order Management and Contracts Management modules.



*New Massachusetts Retirement Information System (MARIS) interface scheduled for production in Q1 FY15.

The illustration above shows the significant Infor/Lawson modules in use and interfaces with other applications.

This maintenance and support agreement is an essential tool to protect the MWRA's Lawson software investment. The Lawson support agreement ensures that the MWRA receives vendor support including:

- Access to product patches, version releases, software upgrades and documentation; "How To" assistance, remote diagnosis, priority case queuing, e-mail notifications, Lawson Global Support, hot topics web discussion groups and electronic self-service case logging, tracking and management.
- Access to support engineers twelve hours a day, five days a week and twenty-four hour, seven day a week support for critical issues.

Staff have thoroughly reviewed the sole source nature of this procurement. Infor Global Solutions is the manufacturer of this software and while there are third party vendors who provide support for various applications, they do not have the ability to change standard code or provide upgrades or fixes to the application. This ability is important to the MWRA to ensure that it is able to maximize its use of Lawson.

Non-renewal of the maintenance and support agreement would place the MWRA at risk since no further support will be provided on the existing applications. Therefore, staff recommends that the MWRA renew the annual maintenance agreement to provide ongoing support for the Lawson System.

BUDGET/FISCAL IMPACT:

This year's request of $338,352.94 represents a 13% reduction over last year's not-to-exceed amount of $388,690.50. There are sufficient funds available in the FY14 CEB for this renewal.

MBE/WBE PARTICIPATION:

Infor Global Solutions is not a certified Minority or Woman Owned business.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 16, 2014
SUBJECT: Purchase Order for Professional Services for Citrix Application Virtualization and Mobile Device Management Design & Implementation
IntraSystems, Inc.
State Blanket Contract ITC47
WRA3832-Q

COMMITTEE: Administration, Finance, & Audit

___ INFORMATION
X VOTE

Rachel C. Madden
Director, Administration & Finance

Michele S. Gillen
Deputy Director, Administration & Finance

Janice B. Watts, Buyer
Russell J. Murray, MIS Director
Ken Carlson, Operations Manager
Preparer/Title

RECOMMENDATION:

To approve the award of a purchase order contract for technical consulting services to assess, design and implement the Application Delivery and Mobile Device management solution for the MWRA to IntraSystems, Inc. and to authorize the Executive Director to execute said purchase order contract in an amount not to exceed $225,384.60 under State Blanket Contract ITC47.

DISCUSSION:

The MIS Five-Year Strategic Plan, under the IT Infrastructure Program contains funds to assess, design, build and implement a high availability application delivery and mobile device management environment to provide authenticated users at multiple MWRA sites with remote access to MWRA hosted applications and systems. This environment will enable authenticated users secure access to MWRA applications and data from anywhere on any appropriate device.

The types of applications and data targeted for mobilization are work order processing within the Computerized Maintenance Management System (CMMS, MAXIMO), sanitary and combined sewer overflow tracking and reporting, near real-time operational alarms, access to critical data including the Contaminate Warning System information, and engineering drawings and detailed records associated with water and wastewater infrastructure. With secure mobile access to these applications and associated data, it is anticipated that significant productivity enhancements will be realized and allow staff to be more effective in the operation of the water and wastewater systems.

The infrastructure will be centrally hosted in the MWRA data center and will consist of the Citrix NetScaler platform, multiple Citrix XenDesktop servers, running in a virtualized environment. The environment will be designed to support sufficient XenDesktop client access licenses and necessary concurrent sessions. The design and configuration of the Citrix environment will be able to support additional access requirements and future growth.

The selected vendor will design and configure the environment, provide documentation and training. The final design will be formally validated by Citrix prior to any software or equipment being competitively bid. Project management tasks are expected to be performed throughout the engagement to effectively manage expectations, monitor timelines, and ensure quality.

This procurement includes:

- Project management
- Detailed architecture design
- Detailed hardware and software requirements
- Onsite installation and configuration of hardware and software
- Integration with current infrastructure
- Publication and testing of infrastructure and specified applications
- Documentation & knowledge transfer
- Training

The MIS Department will request competitive bids for the necessary hardware and software as a result of the validated design. The full implementation of this project is expected to be completed within nine months of notice to proceed. In addition, this procurement includes a 20% contingency fund to provide for unforeseen project development.

Procurement Process:

In order to procure these services, staff accessed the Commonwealth of Massachusetts State Blanket Contract ITC47 which includes five Citrix Certified Vendors. Per ITC47 guidelines, the five qualified vendors were directly solicited through WRA-3832-Q. The bid response for consulting services reflected the selected staff and hourly rate. The recommendation is to choose the lowest cost solution to the MWRA. Four sealed bids were received and publicly opened on April 4, 2014; one bid was disqualified since it did not provide the full cost of the engagement. The results are listed below:

Vendor Name	**Amount**
IntraSystems, Inc	**$225,384.60**
AdvizeX Technologies LLC	$234,480.00
Hub Technical Services, LLC	$296,784.00
Presidio Networked Solutions, Inc.	$ 73,440.00 (Non-Responsive)

After review and analysis of bid proposals, staff recommends IntraSystems, Inc. as the lowest responsive bidder.

BUDGET/FISCAL IMPACT:

Sufficient funds for this procurement are included in the FY14 Capital Improvement Program under IT Infrastructure Project #7443.

MBE/WBE:

IntraSystems, Inc. is not a certified Minority- or Women-owned business.

MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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

WASTEWATER POLICY & OVERSIGHT COMMITTEE MEETING

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

to be held on

Wednesday, April 16, 2014

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

Time: Immediately following AF&A Comm.

AGENDA

A. Information

1. Progress of Cambridge-Implemented CSO Projects and Projected Financial Assistance through September 2014

2. Update on Co-Digestion Project at the Deer Island Treatment Plant (materials to follow)

B. Approvals

1. I/I Local Financial Assistance Program Annual Update

C. Contract Awards

1. Technical Assistance Consulting Services – Surveying: GEOD Consulting, Inc., Contract 597TA

2. Electrical Equipment Upgrade Construction 4 – Resident Engineering and Inspection, Deer Island Treatment Plant: AECOM Technical Services, Inc., Contract 7416

3. Electrical Testing and Technical Services – Metropolitan Boston: Infra-Red Building and Power Service Co., Inc., Contract OP-237

4. Process and Control System (PICS) Service and Maintenance Contract - Deer Island Treatment Plant: ABB Automation, Inc.

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the
Wastewater Policy and Oversight Committee

March 12, 2014

A meeting of the Wastewater Policy and Oversight Committee was held on March 12, 2014 at the Authority headquarters in Charlestown. Chairman Walsh presided. Present from the Board were Ms. Wolowicz and Messrs. Barrera, Carroll, Flanagan, Foti, Pappastergion, and Vitale. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Dave Kubiak, Rick Adams, Michele Gillen, John Vetere, Mike Hornbrook, Margery Johnson, Dan O'Brien, Dave Duest, and Bonnie Hale. The meeting was called to order at 10:30 a.m.

Approvals

*Final CSO Annual Progress Report 2013

Mr. Pappastergion complimented staff, stating that this was a very good report, and one that he looks forward to every year. The Committee recommended approval of the submittal of the report to the Federal District Court (ref. agenda item A.1).

Contract Awards

*Thermal and Hydro Power Plant Maintenance, Deer Island Treatment Plant: O'Connor Corporation, Contract S526

Staff gave a presentation on the work to be performed under this contract, and there was general discussion and question and answer. The Committee recommended approval of the contract award (ref. agenda item B.1).

*Rehabilitation of Anaerobic Digesters, Primary Clarifiers, and New Influent Gates at Clinton Wastewater Treatment Plant: R.H. White Construction Co., Inc., Contract 7277A

Staff gave a presentation on the work to be performed under this contract, and there was general discussion and question and answer. Mr. Favaloro of the MWRA Advisory Board stated that although the work on this 22 year old plant was clearly necessary, the costs of rehabilitating and maintaining it should be the responsibility of the Commonwealth and the Town of Clinton, not MWRA. The Committee recommended approval of the contract award (ref. agenda item B.2).

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* Approved as recommended at March 12, 2014 Board of Directors meeting.

*Engineering Services During Construction for Rehabilitation of Anaerobic Digesters, Primary Clarifiers and New Influent Gates at Clinton Wastewater Treatment Plant: Fay, Spofford & Thorndike, LLC, Contract 7277B

There was general discussion and question and answer. The Committee recommended approval of the contract award (ref. agenda item B.3).

Contract Amendments/Change Orders

*Remote Headworks Upgrade: Malcolm Pirnie, Inc., Contract 7206, Amendment 3

Staff described the reasons for the proposed contract amendment, and there was general discussion and question and answer. The Committee recommended approval of Amendment 3 (ref. agenda item C.1).

Information

Monthly Board Update on Co-Digestion

A hand-out and a presentation was given, reporting on the status of technical/construction, regulatory, community interaction, financial and waste management contract matters related to the co-digestion pilot program. There was general discussion and question and answer.

The meeting adjourned at 11:40 a.m.

* Approved as recommended at March 12, 2014 Board of Directors meeting.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 16, 2014
SUBJECT: Progress of Cambridge-Implemented CSO Projects and Projected Financial Assistance through September 2014

COMMITTEE: Wastewater Policy & Oversight

X INFORMATION
VOTE

Jae R. Kim, P.E., Chief Engineer
David A. Kubiak, P.E., Sr. Program Manager
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

For information only. This staff summary presents the status of the projects in the Long-Term CSO Control Plan that are funded, in part, by MWRA and implemented by the City of Cambridge. Staff plan to transfer $7,556,000.45 into the City of Cambridge CSO account to cover MWRA's cost share of eligible work scheduled by Cambridge in the period April 2014 through September 2014, bringing the total amount of MWRA funds transferred into the Cambridge CSO account to $64,580,729.23

DISCUSSION:

Pursuant to the terms of the CSO Memorandum of Understanding and Financial Assistance Agreement ("MOU" and "FAA"), Cambridge is responsible for implementing four of the six projects that comprise the MWRA's long-term control plan for Alewife Brook (see map, Attachments 1 and 2), as well as a project Cambridge completed in 2007 that eliminated CSO discharges or provided floatables control for remaining discharges at Cambridge CSO outfalls along the Charles River. Table 1, on the next page, includes a description and implementation status for each of the Alewife CSO projects implemented by Cambridge or MWRA. CAM004 Sewer Separation is the only Cambridge-implemented CSO project that is not yet complete.

CAM004 Sewer Separation Progress

Remaining work on the CAM004 Sewer Separation project comprises three major construction contracts by the City of Cambridge, all presently underway. The contracts primarily involve the construction of new storm drain systems in a 211-acre area of neighborhoods along and near Huron and Concord avenues, east of Fresh Pond Parkway (Attachment 1). While construction progress in the past few months was slower than expected due to harsh winter conditions, Cambridge expects to complete all CSO-related construction by December 2015, in compliance with Schedule Seven.

Table 1: Alewife Brook CSO Control Plan Projects and Status

Project	Cambridge Contract No.	Benefit	Project Status
CAM004 Stormwater Outfall and Wetland Basin	12	Convey stormwater flows to wetland system for attenuation and treatment.	Completed Apr 2013
CAM004 Sewer Separation	8A, 8B, 9	Remove large quantities of stormwater from the sewer system; Close Outfall CAM004.	8A: 75% complete 8B: 15% complete 9: NTP Feb 2014
CAM400 Manhole Separation	4/13	Remove stormwater from the sewer system; eliminate CSO at Outfall CAM400.	Completed Mar 2011
Interceptor Connection Relief and Floatables Control at CAM002 and CAM401B and Floatables Control at CAM001		Upgrade connections between Cambridge and MWRA systems to provide relief; add floatables control.	Completed Oct 2010
MWR003 Control Gate and Rindge Ave. Siphon Relief	MWRA Contracts	Optimize hydraulic conveyance; minimize overflows while controlling system flooding in large storms.	100% design Construction NTP Aug 2014
Interconnection Relief and Floatables Control at Outfall SOM01A		Upgrade connection and provide floatables control	Substantial completion Dec 2013

Cambridge's Contract 8A (Huron West) commenced in September 2012 and is approximately 75% complete. The contractor has nearly completed all subsurface work for this contract. The contractor has installed base pavement on Lexington Avenue, Lakeview Avenue and Grozier Road following completion of subsurface work on these streets. Throughout Contract 8A, extensive utility coordination and relocations have gone well and have not been a factor in completing the contract work on schedule. The sewer separation work of Contract 8A is substantially complete. Surface restoration work will continue through December 2014.

Drain Vault #1 at Vassal Lane and Standish Street, Contract 8A

Removal of old rails on Huron Avenue, Contract 8B

Cambridge issued the Notice to Proceed for Contract 8B (Huron East) in September 2013, and the contract is approximately 15% complete. The contractor has removed old rail tracks in Huron Avenue and has pruned and protected trees in advance of storm drain and sewer installation. NStar has completed relocations of its gas lines along Huron Avenue and Vassal Lane ahead of the sewer and storm drain work, which is presently underway on Fayerweather, Reservoir and Appleton streets. Coordination with utility companies is underway, and the extensive work to relocate utilities could have an effect on the contract schedule, particularly for gas relocations needed in advance of sewer and drain installations. Cambridge and its contractor have adjusted and will continue to adjust, if necessary, the schedule of sewer and drain work to avoid conflicts with the gas main(s) to the extent possible. Contract 8B is scheduled to be substantially complete in September 2015.

Cambridge issued the Notice to Proceed for the $24.2 million ($5.8 MWRA share) Contract 9 (Concord) on February 11, 2014. Contract 9 includes the installation 19,640 linear feet of new sanitary sewers and storm drains from 6-inch to 48-inch diameter, 4,070 linear feet of trenchless pipe rehabilitation, approximately 10,360 linear feet of ductile iron water main pipe from 4-inch to 20-inch diameter, and 800 linear feet of 20-inch water pipe trenchless rehabilitation in Concord Avenue and several intersecting streets to separate combined sewers in a 60-acre area north of Contracts 8A and 8B and extending from Fresh Pond Parkway in the west to the intersection of Concord Avenue and Huron Avenue in the east. Contract 9 is scheduled to be substantially complete in December 2015.

A small portion of the originally planned Contract 9 work, on Concord Lane, a short private way serving commercial properties, was not included in the contract. Cambridge commenced survey and building inspections early this month under a limited right-of-entry agreement with the property owner. Cambridge continues to negotiate with the property owner for further entry rights to perform soil and water testing and eventual construction. Cambridge may bid the Concord Lane work as a separate (fourth) construction contract, which it expects can be completed within the court schedule.

MWRA Oversight and Financial Assistance

The FAA establishes eligible and ineligible costs. Generally, all reasonable force account and contract costs incurred by Cambridge as a direct result of implementing the CSO projects are funded by MWRA. The FAA calls for MWRA to disburse grant funds to Cambridge semiannually, based on a detailed, documented estimate of work progress and eligible costs for each projected six-month period. MWRA's review and acceptance of the spending estimate is required prior to disbursement of funds to the Cambridge CSO account.

Staff continue to review the scope and costs of engineering and construction contracts that are issued by Cambridge, including amendments and change orders. Staff also maintain regular contact with Cambridge staff and routinely review the progress of the Cambridge projects and expenditures. Cambridge submits semi-annual reports that describe actual work progress and expenditures (force account and contract-related) for each project.

MWRA's Internal Audit Department reviews Cambridge's compliance with the terms and conditions of the FAA. The latest audit, completed in April 2013, reviewed whether force account costs claimed by the City for years 2010 through 2011 were supported by the records of

the City and were eligible for MWRA funding under the terms of the FAA. The audit determined a net amount of $1,657.95 being owed to the City from the CSO account. The Internal Audit Department is presently reviewing Cambridge's consultant and contractor invoices for years 2009 through 2013.

Funding and Eligible Expenditures through March 2014

Cambridge pays the eligible costs of the project from a general City account and periodically reimburses its general account from the CSO account. Since execution of the MOU and FAA in 1996, MWRA has transferred a total of $57,024,729 to Cambridge's CSO account to cover eligible design and construction costs through March 2014. In addition, the FAA allows Cambridge to use accumulated interest in the account to fund eligible costs.

The estimated eligible cost incurred by Cambridge from MOU/FAA inception through March 2014 is $54,691,740, and the estimated available balance in the CSO account as of the end of March 2014 is $2,332,989. The balance is primarily associated with slower spending on the CAM004 Sewer Separation project, specifically Contract 8B construction, ESDC and Police Details, and lower than anticipated close-out cost for Contract 12 (CAM004 Stormwater Outfall and Wetland Basin). The sewer separation work was slower over the winter due to the weather and the need for work crews to focus on the drain installations under an old water transmission main on Huron Avenue. Cambridge had difficulties shutting down the water main which also caused some work delay. The lower spending is not expected to compromise Cambridge's ability to meet the December 2015 completion milestone in Schedule Seven.

Funding through September 2014

Cambridge recently submitted a projected work progress report, along with an estimate of eligible contract and force account spending in the period April 2014 through September 2014, totaling $9,736,005.00. Over this period, Cambridge will continue with construction and construction supervision services for Contracts 8A, 8B and 9.

Staff have reviewed Cambridge's request and have approved a transfer of $7,556,000.45 to cover the anticipated eligible cost in this period. The difference between the Cambridge estimate and the MWRA approved transfer amount primarily is the remaining balance in the CSO account due to the lower spending last quarter and the lower cost noted above. Table 2 on the next page shows a breakdown of previously transferred funds and the pending transfer.

BUDGET/FISCAL IMPACT:

The FY14 CIP budget includes $86,920,907 for design and construction of the Cambridge CSO projects, and was based on the award amount and contingency for Contract 8A and estimated amounts for Contract 8B (at 60% design) and Contract 9 (at 30% design). Amendment 11, executed on September 9, 2013, increased the total award amount of the MOU and FAA to $93,403,787 based on the higher award amount for Contract 8B and a higher estimate for Contract 9 at 90% design. The Proposed FY15 CIP includes these higher costs.

Table 2: Breakdown of MWRA Fund Transfer by Contract and Activity

Engineering Services and Construction Contracts	Funds Previously Provided	Pending Transfer for Apr-14 thru Sep-14	Funding through Sep-14
Preliminary/Final Design for Contracts 1, 2A, 2B and 3	$ 1,650,270.00	$ -	$ 1,650,270.00
Construction Phase Services for Contracts 1, 2A, 2B and 3	$ 1,787,068.00	$ -	$ 1,787,068.00
CAM002-004 Sewer Separation (Contracts 1, 2A, 2B and 3)	$ 10,411,903.00	$ 0.37	$ 10,411,903.37
Final Design/Field Investigations for Contracts 8, 9, and 12 (including Notice of Project Change and Supplemental Design Reports)	$ 1,498,117.00	$ 49,827.03	$ 1,547,944.03
Design/ESDC Floatables & CAM400 Manhole Separation Contract 4/13	$ 2,073,679.61	$ 39,783.04	$ 2,113,462.65
Design 8A, 8B, & 9	$ 4,609,351.05	$ 56,027.25	$ 4,665,378.30
ESDC 8A, 8B, & 9	$ 2,553,614.37	$ 1,484,375.85	$ 4,037,990.22
Final Design 12	$ 3,875,059.00		$ 3,875,059.00
ESDC Contract 12	$ 3,832,687.56	$ 39,807.20	$ 3,872,494.76
Construction of Floatables Controls (Charles and partial Alewife)	$ 658,639.00		$ 658,639.00
Construction/Police Contract 4/13	$ 4,996,118.39		$ 4,996,118.39
Construction/Police Contract 12	$ 6,072,377.64	$ (419,071.44)	$ 5,653,306.20
Easements Contract 12	$ 289,000.00		$ 289,000.00
Construction 8A	$ 7,810,560.66	$ 2,496,225.34	$ 10,306,786.00
Construction 8B	$ 3,495,376.00	$ 3,531,582.00	$ 7,026,958.00
Construction 9	$ 103,490.00	$ (36,353.00)	$ 67,137.00
Police 8A, 8B, & 9	$ 538,612.00	$ 364,424.00	$ 903,036.00
City of Cambridge Force Account/Expenses	$ 812,184.05	$ 68,772.77	$ 880,956.82
Interest	$ (43,378.56)		$ (43,378.56)
Total	$ 57,024,728.77	$ 7,675,400.41	$ 64,700,129.18

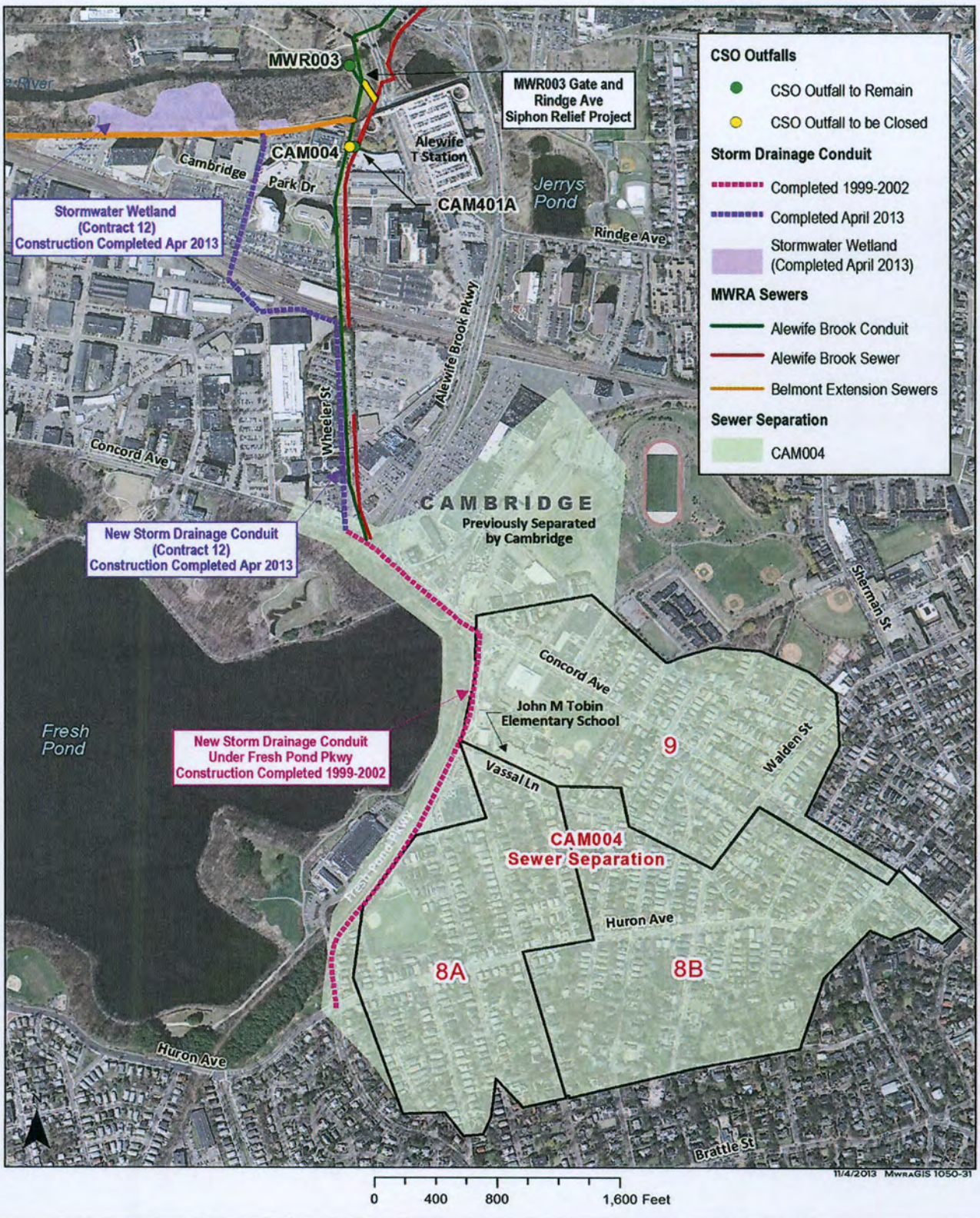
MBE/WBE PARTICIPATION:

In accordance with the MOU, MBE and WBE participation in the Cambridge Sewer Separation and Floatable Controls projects will comply with DEP requirements and City of Cambridge policy.

ATTACHMENTS:

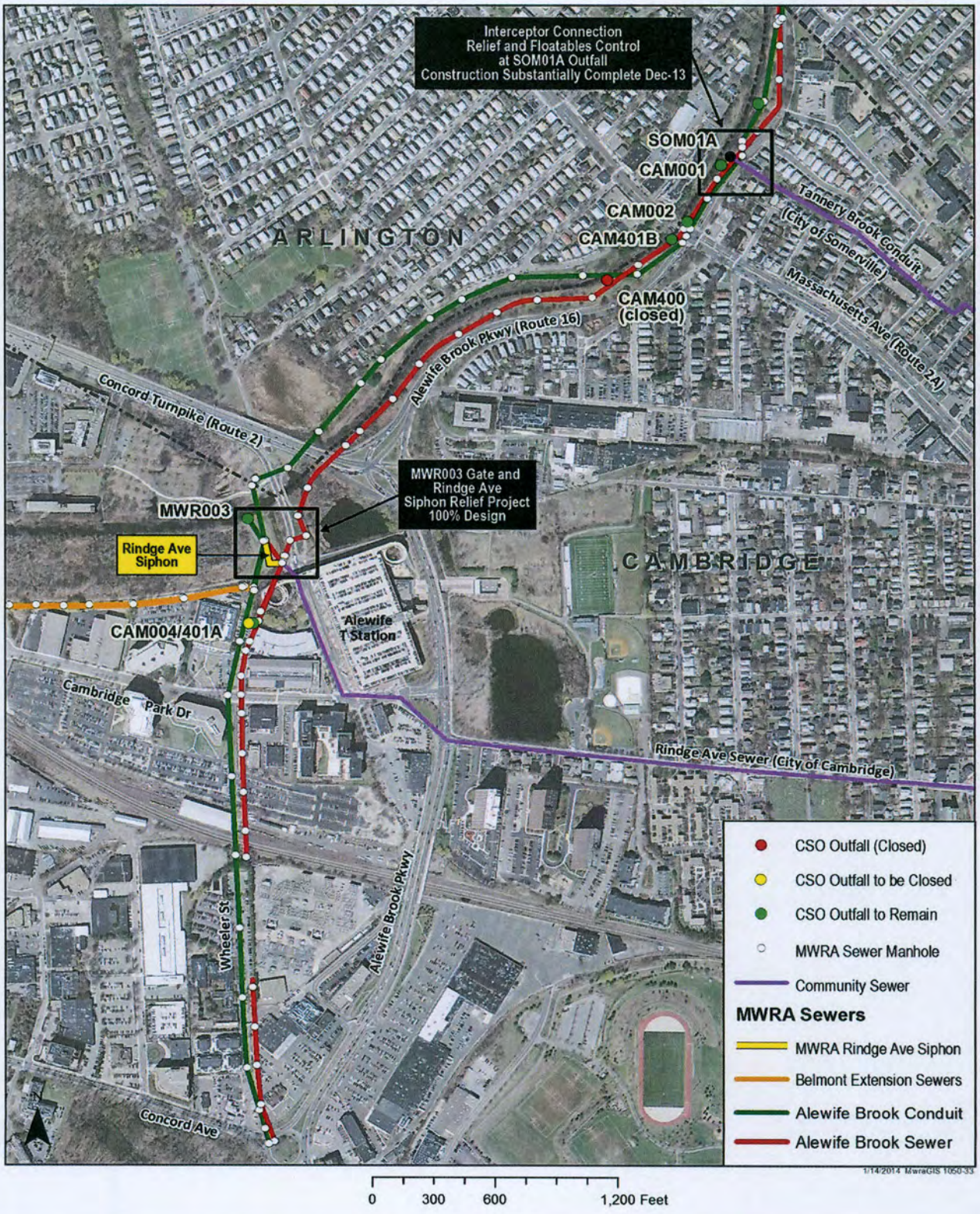
Attachment 1 – Map of Alewife Brook CSO Control Plan (1 of 2)
Attachment 2 – Map of Alewife Brook CSO Control Plan (2 of 2)

Attachment 1



Alewife Brook CSO Control Plan (1 of 2)

Attachment 2



Alewife Brook CSO Control Plan (2 of 2)

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 16, 2014
SUBJECT: Update on Co-Digestion

COMMITTEE: Wastewater Policy & Oversight

X INFORMATION
____ VOTE

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

Michael J. Hornbrook
Chief Operating Officer

Since the last update to the Board, two major issues have arisen that have required MWRA to place the project on hold for the time being. First, MWRA's Advisory Board has raised concerns relative to the short- and long-term cost impacts of the program. Second, residents and elected officials of Winthrop have raised concerns about additional trucking through their neighborhoods. This staff summary provides an update to the Board on the project and additional cost benefit information.

Wastewater sludge is increasingly being looked at as a resource rather than a waste product. While MWRA has been taking advantage of this technology for many years with its anaerobic digester operation, many other utilities are only now considering digestion to help offset their energy needs.

MWRA has continued to develop a co-digestion pilot program for the Deer Island Treatment Facility that was approved by the Board in October 2013. The pilot program will consist of adding pre-processed, source-separated organic materials (food waste) along with MWRA wastewater sludge to MWRA's existing anaerobic digestion system to produce more methane gas and to reduce MWRA's purchase of electricity. Massachusetts is banning disposal of commercial and industrial food wastes from state landfills beginning in October 2014 creating a source of organic products for existing digesters such as those on Deer Island. Co-digestion was considered after completion of a feasibility study and bench scale test showed favorable financial benefits to MWRA.

Staff still believe that the co-digestion pilot is worthwhile and could lead to a significant source of cost avoidance and revenue for MWRA. Conservatively, the projected annual value of the full scale program would be $5.4 million from additional heat and electricity. Today, Deer Island produces 25% of its electricity on-site from all sources. With full-scale co-digestion, that could rise to 45%. In addition, Deer Island's total energy production could go from 64% to 75% produced on-site.

RECOMMENDATION:

For information only.

BACKGROUND:

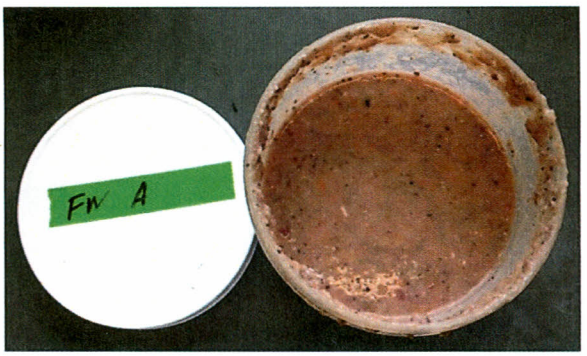
At MWRA, digestion of wastewater sludge reduces the volume of sludge that is required to be converted to fertilizer pellets, and it also reclaims a useable green energy end-product in the form of digester gas. Digester gas is composed of approximately 60% methane and 40% carbon dioxide. The digester gas produced in Deer Island's egg-shaped digesters is then compressed and sent to boilers within Deer Island's On-Site Thermal/Power Plant ('Power Plant') where the energy produced is used primarily for plant heating (meeting >98% of DITP's heating needs) but also to generate electricity to offset approximately 18% of DITP's electrical demand. Without digester gas, DITP would be required to heat the plant with fuel oil, roughly equivalent to five million gallons annually. Electricity generation would also be greatly reduced. Deer Island estimates $15-18 million in avoided fuel oil purchases are attributed to digester gas for heating needs. Electricity offsets in the order of 28 to 30 million kWh annually also are avoided with digester gas, which has a value to MWRA in the order of $2.8 to $3.5 million annually in savings (including green energy credits). In total, digester gas accounts for 62% of DITP's total energy profile, has a value of $18 to $22 million annually to MWRA and is considered a valuable commodity.

DISCUSSION:

Co-Digestion Feasibility Study

As part of MWRA Contract 7147A, Residuals Processing Facilities Technology Options Assessment, MWRA worked with CDM Smith to evaluate currently available options for treating and managing the wastewater sludge from DITP and to enhance MWRA's operation to minimize sludge production and/or increase green energy production. One subtask within this study was to evaluate the potential for enhancing MWRA's current wastewater digestion operation through the addition of organic food waste material directly to MWRA's digesters – a process known as co-digestion.

The feasibility study found that several plants within the United States have used co-digestion to enhance their operation to the point where their treatment plants have gone nearly off-the-grid, while one plant, in particular, has become a net zero energy user - East Bay Municipal Utilities District.



CDM Smith evaluated the waste characteristics and co-digestion impacts on the wastewater treatment process based on a survey of previous research completed in the industry. CDM Smith also used its own hands-on research data from several studies it conducted for clients. Armed with this research data, CDM Smith prepared a food waste operational model that predicted the benefits MWRA might expect to receive from a pilot plant program consisting of 150 wet tons per day (wtpd) and a potential full-scale program consisting of 500 wtpd. CDM Smith estimated what equipment would be needed to accept the material on-island, process that material, and deliver it to the digesters. CDM Smith also evaluated what equipment would be needed to beneficially utilize the digester gas in a cost-effective manner that would extract the highest value of energy from the gas.

The evaluation led CDM Smith to recommend that MWRA change its method of Combined Heat and Power (CHP) generation on-island to maximize electricity production, regardless of whether or not co-digestion is pursued. CDM proposed changes to CHP generation that could be accomplished with a seven- to eight-year payback given the efficiency gains. Staff will return to the Board for a separate discussion on CHP in the near future.

Table 1: Initial Estimation of Biogas Value and Additional Downstream Costs

Levels of Food Waste	**Units**	**Proposed Pilot Program 150 wtpd**	**Proposed Long-Term Program 500 wtpd**
Organic Food Waste	Wet tons per day (wtpd)	150	500
	Dry tons per day (dtpd)	21	70
	Gal/day	36,000	120,000
Biogas Produced	Cubic feet/hour	14,900	49,900
	MMBTU/hr	9	30
Electricity Produced	kW	236	3,333*
Electricity Savings	$/yr	$190K	$2.63M*
Pellet Impact	Dtpd	5.9	19.7
Pellet Cost	$/yr	($600K)	($2.01M)

*new CHP method assumed active for this level of operation.

From these data, equipment estimates were prepared:

Table 2: Initial Co-Digestion Cost Analysis

Category	150 wtpd case	500 wtpd case
Capital Costs		
On-Island Receiving, Storage	$720K	$2.4M
Digester Modification		$2.0M
Combined Heat & Power		$16.7M
Total Capital	$720K	$21.1M
Annualized capital (20-yr)	$50K	$1.37M
Total O&M (including pellets)	$650K	$2.83M
Total Annual Cost	$700K	$4.2M
Value of Additional Biogas*	-$190K	-$2.63M
Net costs:	$510K	$1.57M
Break Even Tipping Fee		$0.04/gal
$1M profit		$0.062/gal
Industry Standard Tipping Fee		$0.09-0.12/gal

*did not include green credits from Renewable Portfolio Standard.

The initial CDM Smith model appears now to have been conservative in its predictions. Further bench testing utilizing organic food wastes and actual MWRA wastewater sludge indicated higher solids destruction and thus higher methane gas and less solids to the Pellet Plant than assumed in Tables 1 and 2 above. The cost model also did not include the heat value benefit (fuel oil offsets), which can be substantial, and the value of RPS green credits for electricity generated with digester gas. CDM Smith concluded that with a modest tipping fee, an annual million dollar profit margin could be achievable while still keeping a tipping fee that remains competitive in the industry.

Updated inputs to the cost model after the bench scale testing (described in more detail below) indicated:

- Increase solids destruction:
  More di-gas production and more green energy; and
  Reduced sludge to FRSA
- Revised cost inputs:
  Takes into account Heat Value benefit; and
  RPS credits (green energy benefit for digester gas)
- Old model for pilot – showed an operating loss
  New model for pilot – year 1: $417K/year profit
  Years 2 and 3: $835K/year profit per year
  Without a tipping fee and no changes to CHP

Bench Scale Study

In a parallel study with the CDM Smith feasibility study, Fay, Spofford & Thorndike together with UMass Amherst conducted a bench scale analysis on varying levels of food waste added into MWRA sludge and digesters. The study was conducted over a 180-day period and utilized 4-liter digesters operated in similar fashion to the 3-Mgal egg-shaped digesters on DITP.

UMass Amherst found food waste to be very digestible, enhancing digester gas production beyond predicted levels. Solids destruction assumed by CDM Smith was found to be extremely conservative at only 82% volatile solids destruction while UMass found destruction rates on the order of 88%. CDM Smith assumed in its model lower digester gas production relative to normal wastewater sludge (normal DITP sludge generate di-gas at the rate of 17.4 cuft/lb VS destroyed, CDM Smith assumed food waste di-gas production would be at a more modest 13.6 cu.ft./lb VS destroyed). UMass Amherst found food waste produced the same if not more digester gas production compared to normal wastewater sludge. Bottom line: the bench scale results were great news for MWRA. Food waste performed much better than predicted, generating more digester gas per unit material with less solids going to the pellet plant (increasing green revenue while decreasing operating expenses in the CDM Smith model). It also determined recycle stream contributions should NOT negatively impact DITP operations.

Pilot Program

Given the favorable economics shown by the CDM cost model and the better than expected performance of the UMass Amherst bench scale, MWRA staff proposed to verify the co-digestion model once more by scaling the study to a one- to two-digester scale pilot. In this program, MWRA would feed varying quantities of food waste to one or two digesters over one to three years under controlled conditions but at Deer Island operational scales. Eight digesters are normally in operation on any particular day. The "test" digesters would be evaluated versus the performance of the other "control" digesters being fed solely wastewater sludge.

The goal of the study was to minimize pilot costs while maximizing the value of the data generated, and to further refine the operational and cost models to better predict any future facility designs. The following operational parameters are especially critical to future plant sizing: digester gas production, sludge destruction and recycle stream impacts. Some equipment costs were expected during the pilot given that DITP does not have facilities to receive or feed non-wastewater derived material into the anaerobic digesters. The latest cost estimate to construct the on-island pilot facilities is $650-$700,000 ($470,000 currently spent) with $360,000 in funding from MaDEP and Massachusetts Clean Energy Center, to defray some of the costs of the pilot. To keep the pilot costs down it was expected the operation would be truck-based.

The pilot project planned for the following addition rates:

Phase	Quantity	Trucks/Day*	Di-gas	Sludge Impacts
Baseline	246 dtpd	-	186 kscfh	106 dtpd, Average now is 102 dtpd
1	7 dtpd	3	+4.2%	+1.4% to +1.5 tons
2	14 dtpd	6	+8.5%	+2.9% to +3.0 tons
3	21 dtpd	9	+12.7%	+4.3% to +4.5 tons

*truck delivery schedule limited to 5 days/week, M-F, less holidays during day shift only.

The revised cost model based on the above test plan predicted DITP in its first year of operation of the co-digestion pilot would see a net profit over $400K in operating expenses (not including capital):

Heat Value benefit	+$496K
Electricity value including RPS value	+$256K*
Cost to Pellet Operation	-$335K
Total benefit	+$417K

*assumes no change in CHP at DITP during the pilot.

Staff have been aggressively pursuing additional grant opportunities should the program progress to a permanent operation.

On December 23, 2013, MWRA entered into a no-cost contract with Waste Management of Massachusetts (Waste Management) to deliver pre-processed, source-separated organic material (PSSO) into the anaerobic digesters at DITP for one year, with two consecutive one-year options. The contract specifies performance standards regarding operations, PSSO quality and insurance, and includes indemnification language to hold MWRA harmless under specified circumstances. It also requires Waste Management to comply with MWRA's Sewer Use Regulations, including obtaining a Sewer Use Discharge Permit issued by MWRA's Toxic Reduction and Control Department in compliance with the U.S. EPA Pretreatment Program requirements.

Transitional Program if Year 1 of Pilot was Successful

Assuming the pilot project was successful, MWRA would enter into a design and construction phase to scale up its operation. The permanent full-scale program was intended to be a barge-based operation. All PSSO would arrive at DITP via barge then be offloaded to receiving and pumping facilities. These facilities would have to be designed to match the optimal quantities determined in the pilot operation. In its feasibility study, CDM Smith anticipated a permanent program would be in the order of 500 wtpd (70 dtpd or 120,000 gal/day) while the pilot would be operated at a peak of 150 wtpd (21 dtpd).

MWRA expected to enter into the design phase soon after year one of the pilot with years two and three of the pilot being a continuation of pilot level activity (at 150 wtpd or 21 dtpd). All pilot level activities would operate within current operational limitations and would NOT require any changes in CHP. Digester gas generated during the pilot should remain within operating

ranges of the existing digester gas transmissions lines and utilization capacities. Digester gas may be flared, as it is periodically today, but the levels of flaring should not be substantially different from today's operation (typically <5% of normal digester gas generation).

The revised cost model based on years two and three of the pilot with no substantial changes in operation (no change in CHP method) is projected as follows:

Heat Value benefit	+$955K
Electricity value including RPS value	+$385K*
Cost to Pellet Operation	-$504K
Total benefit	+$835K

*assumes no change in CHP at DITP during the pilot.

Full-Scale Program if Year 1 of Pilot was Successful

The full-scale program, as predicted by CDM Smith, would have DITP receiving and feeding 500 wtpd or 120,000 gpd of PSSO into DITP's digesters. Refer to Table 2 above for the early projections of what costs would be incurred to get to full-scale operation. These costs do not include other recommended capital costs that MWRA staff feel is appropriate to spend, regardless of whether co-digestion is implemented or not, such as a redundant gas line between the digester complex and the Power Plant to ensure reliable operation. CDM Smith proposed designing and installing new receiving and pumping facilities for approximately $4.4 million (including digester modifications) and $21.1 million in expenses related to a new CHP installation. CHP options were revisited in a later study. Based on this new information, improved efficiencies were expected to provide a payback of seven to eight years, which improved the overall cost analysis model first proposed by CDM Smith.

The revised cost model based on full-scale operation as proposed with a change in CHP is projected as follows but could be higher given the improved changes in assumptions and CHP payback:

Heat Value benefit	+$3M
Electricity value including RPS value	+$5M
Cost to Pellet Operation	-$1.8M
Total Annual Benefit	+$5.4M

At this point, digester gas is projected to be capable of being responsible for 100% of DITP's heating needs (from 98%), 46% of DITP's electrical needs (from 18%), and overall 75% of DITP's total energy profile (heat plus electricity, from 62%). Based upon the bench scale study and the cost model results, staff believe that co-digestion of organic food waste with MWRA wastewater sludge can be a significant source of cost avoidance and revenue for MWRA.

Town of Winthrop Concerns

At a Winthrop Town Council meeting on Tuesday, February 4, 2014, MWRA's co-digestion program was on the agenda, but it was not the only topic for discussion that night. MWRA presented the goals of its energy programs and by extension the co-digestion program plans. Residents, especially those from the Point Shirley neighborhood that abuts DITP, presented concerns regarding the current truck traffic volume and voiced opposition to any proposed additional trucking programs that would increase these numbers. Some residents supported MWRA's effort in co-digestion, but also were concerned with increased truck traffic levels.

Another Winthrop public meeting was held on Wednesday, March 26, 2014 to discuss MWRA's co-digestion program. More than 200 people were in attendance. Speaker of the House Robert DeLeo, State Senator Anthony Petruccelli, MWRA Board Member Fire Chief Paul Flanagan, and Police Chief Terence Delehanty were present. Also attending was Greg Cooper, Deputy Director of Consumer Programs, MaDEP, and representatives of Waste Management, the firm holding the contract with MWRA to provide PSSO for the co-digestion program. MWRA Executive Director Frederick Laskey presented a description of the pilot project and long-term potential project, followed by Mr. Greg Cooper, MaDEP, to discuss DEP's food waste landfill ban program objectives and benefits. Speaker DeLeo expressed support for the Winthrop residents and asked Mr. Laskey and MWRA to go back and revisit the co-digestion program plan and eliminate all new trucking through the Town of Winthrop. Mr. Laskey agreed to place the project on-hold and to revisit the trucking issues. After the Speaker's presentation, Mr. Laskey then led a lengthy session with Winthrop residents regarding their concerns with the pilot co-digestion program and MWRA's existing trucking in Winthrop.

Next Steps

MWRA and Waste Management staff have begun evaluating alternate non-trucking options for transporting PSSO to Deer Island to conduct the pilot program. A number of different barging options are being discussed and preliminary costs are being developed. Waste Management stated that utilizing a Roll-On/Roll-Off marine transportation option (where trucks drive onto a barge and the barge is pushed by tug boats to Deer Island) was not cost effective and Waste Management would not site a Roll-On/Roll-Off facility in Charlestown. MWRA staff concur with Waste Management's assessment that a Roll-On/Roll-Off marine transport operation would not be cost effective for the pilot phase.

Waste Management is investigating the possibility and cost of leasing an 80,000-gallon barge and piping/pumping modification at its pre-processing facility in Charlestown. A barge of this size could be utilized for a pilot program, but for a long-term program, a larger barge (approx. 150,000 gallons) would be necessary. Waste Management believes it could have a pilot program barge operation ready at its site, not including any Deer Island modifications that would be MWRA's responsibility, in the September or October 2014 timeframe, and remains committed to the project. Waste Management has not indicated, at this time, if there will be any potential financial impact of barging versus trucking for the pilot program but have stated its desire to extend the duration of the pilot agreement if barging became necessary. Waste Management also asked if any state or federal financial assistance was available to address any additional cost it may occur as a result of barging.

MWRA staff are evaluating alternatives on Deer Island to transport the material from the Deer Island pier, where a barge would berth, and how material would get to the wet wells at the receiving tank. Staff are looking at temporary surface piping, rehabilitation of existing unused buried piping, the potential of trucking the material on-island from the pier to the receiving tank and any other physical improvements such as pier rehabilitation or dredging, that would be necessary. Staff are developing an estimate of the cost of these potential modifications.

In the meantime, MWRA staff have been in discussions with MaDEP and MaCEC to see if there are other funding opportunities given the change in the project scope. MaDEP is very interested in the success of the program and MWRA expects to receive $100,000 in grant funding from MaDEP. MWRA anticipates receiving another $260,000 from MaCEC ($60,000 has already been received for the bench scale testing), thereby providing MWRA with $360,000 in grants to date.

Addressing Additional Advisory Board Comments

In addition to questions concerning the cost benefit of the co-digestion program addressed above, MWRA's Advisory Board raised several other questions concerning the state's ban on organic food wastes at Massachusetts landfills. The following responses deal directly with specific Advisory Board questions.

MWRA staff asked MaDEP what level of regulatory oversight MaDEP was putting in place for the October 1, 2014 food waste landfill ban implementation. MaDEP currently does not have any additional staff dedicated to enforcement of this program but will audit landfill operations periodically. For the past several years, MaDEP has been promoting the program and ban with available local conferences, webinars, literature distribution, and mailings. Facilities expected to be impacted by the ban have been notified directly by MaDEP.

MWRA asked if MaDEP was concerned about the possibility these impacted commercial and industrial facilities might solve their food waste disposal dilemma by installing food waste grinders that would send all of their material down the drain, potentially impacting MWRA's sewers and facilities. MaDEP is generally not concerned about sewer disposal of organic food waste as long as it gets to the plant without issue (clogging, sewer regulation violations, etc.). MaDEP is of the opinion that MWRA and each Publically Owned Treatment Works operator will handle enforcement in that area. To address that issue, MWRA drafted and presented to the Board in September 2013 a draft Food Waste Disposal Guidance document describing MWRA's position on this topic, which encourages the use of garbage disposals in the home, but discourages the use of commercial-scale garbage grinders, which might result in an increase in local sewer blockages and additional impacts to DITP. MWRA has the capacity to feed organic food wastes directly to its digesters and the greatest benefit in producing additional methane without other potential operational impacts is direct feed to the digesters. MWRA should encourage both source separation and adding commercial and industrial pre-processed organic food wastes directly to its digesters while continuing to allow for residential use of grinders.

BUDGET/FISCAL IMPACT:

The current estimated cost to MWRA of the pilot program is $650,000 to $700,000, of which $470,000 is committed year-to-date. The FY14 budget includes $250,000 for this project. The receipt of $360,000 in grants makes the current project more than 50% State funded. The preliminary capital and operating cost estimates versus the estimated benefits derived from additional electricity production and Renewable Portfolio Credits (RPS), coupled with a modest tipping fee, would make this project profitable in the long run. Staff are developing cost estimates for barging organic food waste to Deer Island, and continue to seek additional state funding for costs to implement the pilot program.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 16, 2014
SUBJECT: I/I Local Financial Assistance Program Annual Update

COMMITTEE: Wastewater Policy & Oversight

___ INFORMATION
_X_ VOTE

Jon F. Szarek, Project Manager
Carl H. Leone, Senior Program Manager
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

This staff summary presents the annual update on results for the Infiltration/Inflow Local Financial Assistance Program and the Advisory Board's proposal for additional funding and guideline amendments as detailed in the January 27, 2014 letter to MWRA (see Attachment 1).

Staff concur with the Advisory Board's proposal to add Phase 9 and Phase 10 funding for the Infiltration/Inflow Local Financial Assistance Program in the amount of $80 million per phase in the FY15 Capital Improvement Program (CIP). As part of its CIP review and comment process, the Advisory Board has indicated it may make additional recommendations to revise the program's grant/loan split (currently 45% grant and 55% loan) and the loan repayment period (currently 5 years). MWRA staff will continue to coordinate closely with the Advisory Board and, as needed, additional information will be presented to the Board. Approval for the additional program funds will be recommended as part of the FY15 Final CIP that will be presented to the Board on June 25, 2014.

Staff additionally concur with the Advisory Board's proposal and recommend Board approval to amend the Infiltration/Inflow Local Financial Assistance Program guidelines to add sunset dates for the grant portion of remaining community financial assistance allocations under Phase 6 (sunset at end of FY18) and Phase 7 (sunset at end of FY21).

RECOMMENDATION:

To approve revisions to Section 1.3 of the I/I Local Financial Assistance Program guidelines to establish sunset dates for the grant portion of remaining community financial assistance allocations under Phase 6 and 7 as proposed by the Advisory Board, substantially as shown in the box below with new wording in bold and deleted wording with strikethrough.

1.3 Term of the Program

Funding distributions under Phases 1 through 5 of the I/I Local Financial Assistance Program are complete through fiscal year 2012. Funding distributions under **all subsequent phases are approved through FY25 except as amended by the grant portion sunset dates noted in subsections (a) and (b) below.** ~~Phases 6 and 7 of the Program have been approved through fiscal year 2018 (June 30, 2018). Funding distributions under Phase 8 of the Program have been approved through fiscal year 2021 (June 30, 2021).~~

(a) If an eligible community fails to take advantage of its total Phase 6 allocation by June 30, 2018, the community will relinquish the undistributed funds associated with the 45 percent grant portion as allocated within Phase 6.

(b) If an eligible community fails to take advantage of its total Phase 7 allocation by June 30, 2021, the community will relinquish the undistributed funds associated with the 45 percent grant portion as allocated within Phase 7.

The MWRA Board of Directors will review the relative merits of the overall program annually. In the event that the Program is concluded prior to the current term, all financial assistance commitments made prior to the conclusion of the Program shall be fulfilled under the conditions established in each Financial Assistance and Loan Agreement.

BACKGROUND:

All 43 member sewer communities have participated in MWRA's Infiltration/Inflow (I/I) Local Financial Assistance Program. A total of $300.75 million in grant and loan funds have been allocated among member sewer communities based on respective shares of sewer charges for the first eight program phases. The program began in FY93 and through February 2014, a total of $259 million has been distributed to member communities to fund 454 local sewer rehabilitation projects over 21 years. Financial assistance is distributed for approved projects as a 45 percent grant and a 55 percent interest-free loan. The loan portion is repaid to MWRA over a five-year period. All scheduled community loan repayments have been made, a total of $126 million to date. Attachment 2 provides a summary of funds allocated, distributed, and remaining for each member community. Eleven communities have received their entire funding allocation.

Wastewater discharged by member sewer communities to MWRA is strongly influenced by seasonal and wet- weather conditions related to I/I. I/I is extraneous water that enters all wastewater collection systems through a variety of sources. Infiltration is groundwater that enters the collection system through physical defects such as cracked pipes/manholes or deteriorated joints. Typically, many sewer pipes are below the surrounding groundwater table. Therefore, leakage into the

Infiltration in a Sanitary Sewer

sewer (infiltration) is a broad problem that is difficult and expensive to identify and reduce.

Inflow into a Manhole

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

Private Inflow from a Sump Pump

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

DISCUSSION:

The addition of proposed Phases 9 and 10, each at $80 million for combined grants and loans, will increase the total program budget to $460.75 million and extend the distribution of grants and loans through FY25. As discussed with the Advisory Board, Phase 9 funds will be scheduled for distribution beginning in FY15. Phase 10 funds will be added to the CIP in the fiscal year following the distribution of half of the Phase 9 funds. For budgeting purposes, Phase 10 funds will be tentatively scheduled for distribution beginning in FY19 based on historical trends in funding usage. Attachment 3 presents a graph showing the timing and budget commitment for the prior eight I/I grant/loan phases and the proposal for adding Phases 9 and 10.

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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 the Board in May 2001 and approved by MassDEP in November 2002. MWRA is required to report on the Regional I/I Reduction Plan and present estimates of I/I each year.

Based on a recommendation from the Advisory Board in CY04, the I/I Local Financial Assistance Program was modified by the addition of sunset provisions for the grant portion of funding Phases 1 through 5. The sunset provisions have proven successful in motivating communities to continue to invest in local sewer rehabilitation projects. All funds budgeted by MWRA for community I/I reduction grants and loans for Phases 1 through 5 were distributed to fund local projects. The table below provides a status update on community funding:

Funding Phases	Year Initiated	Total Funding ($ millions)	Funds Distributed ($ millions)	Funds Remaining ($ millions)	Number of Communities with Funds Remaining
1-5	FY93-FY05	$ 180.75	$ 180.75	$ 0.00	0 of 43
6	FY07	$ 40.00	$ 33.50	$ 6.50	12 of 43
7	FY10	$ 40.00	$ 27.97	$ 12.03	18 of 43
8	FY13	$ 40.00	$ 16.81	$ 23.19	32 of 43
TOTAL		$ 300.75	$ 259.03	$ 41.72	

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

PROJECT PHASE	COMPLETED PROJECTS ($ millions)	ONGOING PROJECTS ($ millions)	TOTAL ($ millions)
Planning/Study:	$ 34.7	$ 2.4	$ 37.1 (14%)
Design:	9.9	2.2	12.1 (5%)
Construction:	149.9	46.9	196.8 (76%)
Eng. Services During Const.:	10.7	2.3	13.0 (5%)
TOTAL	$ 205.2 (79%)	$ 53.8 (21%)	$ 259.0 (100%)

Program Results

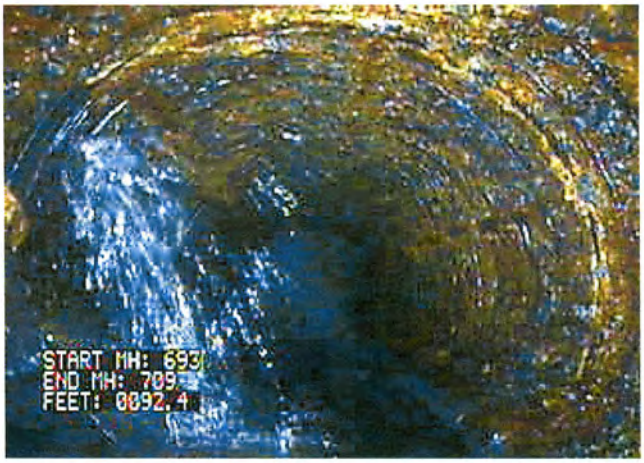
Through February 2014, a total of 454 local I/I reduction and sewer system rehabilitation projects have been funded through the MWRA's grant/loan program. Cumulative results for the program are summarized below.

Results for planning/inspection projects:

- 1,380 miles of sewer TV inspected
- 962 miles of sewer flow isolated
- 1,110 miles of sewer smoke tested
- 37,800 sewer manholes inspected
- 60,980 buildings inspected

Smoke Testing of Sewer Confirms Catch Basin and Open Clean-Out are Inflow Sources

Sewer TV Inspection



Infiltration Source Identified by Sewer TV Inspection

Results for projects targeting infiltration reduction:

- 52 miles sewer replaced
- 90 miles cured-in-place pipe (CIPP) liner
- 135 miles sewer tested/chemically sealed
- 2,250 sewer spot repairs
- 8,600 service connection repairs
- 4.7 miles underdrains sealed

CIPP Pipe Liner

Installation of CIPP Pipe Liner

Results for projects targeting inflow reduction:

- 950 catch basins disconnected
- 39 miles of new or replaced storm drains
- 11,400 manholes rehabilitated/sealed
- 1,800 manhole covers replaced or inflow seals installed
- 417 sump pumps redirected
- 5,200 downspouts/area drains disconnected

Sewer Manhole in Wetland - Raised and Sealed

Estimated I/I Reduction

The system annual average daily flow is approximately 360 mgd (last 25 years); minimum dry weather flows drop to 230 mgd; peak wet weather flow during significant rainfall exceeds the 1270 mgd capacity at the Deer Island Treatment Plant (more than 3.5 times the average flow), and significant additional system capacity is available at combined sewer overflow (CSO) outfalls and storage facilities. Few problems exist within local and regional sewer systems during dry weather or as a result of small and medium storm events. However, high levels of I/I (as well as stormwater from combined sewers) reduce pipeline capacity in the collection system that would otherwise be available to transport sanitary flow. The result, during extreme storm events, may be sewer system surcharging and sanitary sewer overflows (SSOs). I/I also results in the transport of groundwater and surface water out of the natural watershed.

The estimated average daily flow reduction associated with completed local I/I reduction projects that have received MWRA financial assistance is about 84 million gallons per day (mgd). This flow reduction "ballpark" figure is based on the communities' (or their consultants') peak I/I reduction estimates, which have been prorated by MWRA staff to estimate an annual average I/I reduction. The estimated I/I reduction represents groundwater and stormwater that no longer enter the collection system at the point of repair. Regional wastewater flow reductions resulting from specific local I/I reduction projects are difficult to substantiate through end-of-the-collection-system meter data, due to factors noted below:

- Wastewater flows within the collection system vary dramatically due to changes in precipitation. For example, annual average daily flow for MWRA's system varies up to 100 mgd from year to year (from a low of less than 300 mgd to a high of more than 400 mgd). Small flow reductions for individual projects (typically less than one mgd) are dwarfed by regional flow fluctuations;

- Sewer capacity gained by elimination of I/I in one subsystem may, in some cases, allow for other I/I to enter the collection system at a different location, resulting in less net flow reduction at the end of the collection system;

- MWRA's numerous pumping and interceptor upgrades, as well as combined sewer overflow and system optimization projects result in an increase in the capture and treatment of wastewater flow and the reduction of raw sewage discharges. When reviewing end-of-the-collection system meter data, these increased flows to the Deer Island Treatment Plant offset upstream I/I reductions; and,

- Over the last 20 years sewered population in the service area has increased by about 150,000 leading to an increase in sanitary sewage. Conversely, during the same 20 year period, per capita water use returned to the sewer system has decreased due to installation of low-flow plumbing fixtures and appliances leading to a decrease in sanitary sewage.

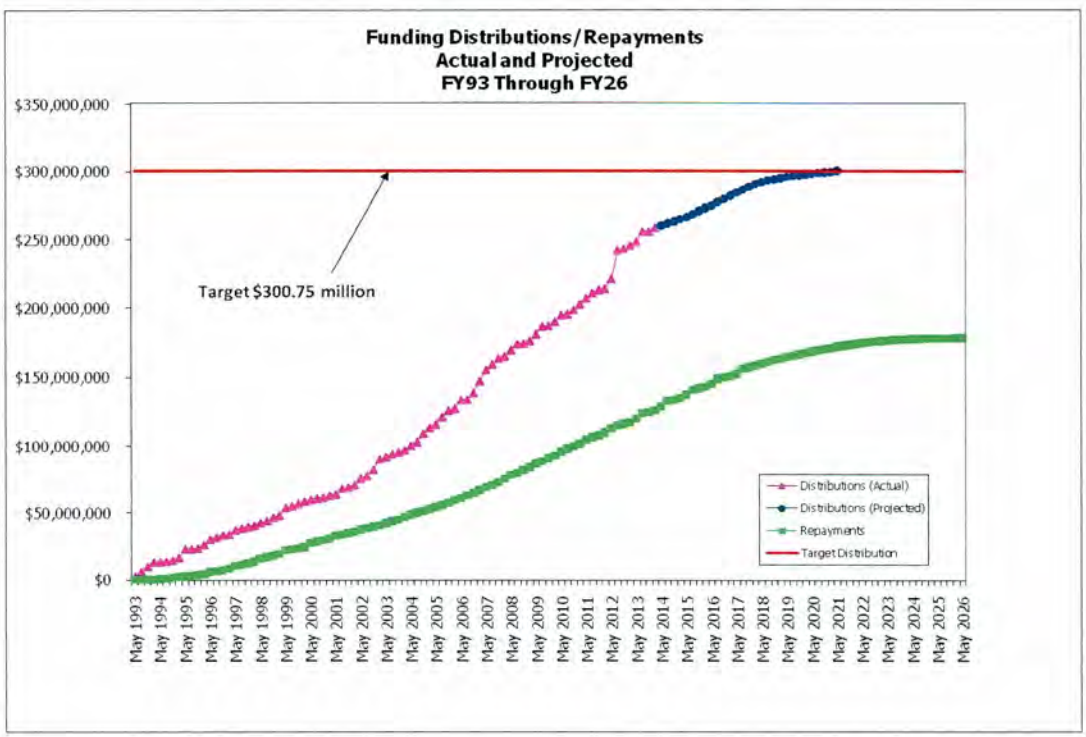
Taking these factors into account, long-term metering records will continue to be analyzed to monitor regional wastewater flow trends. Attachment 4 provides a graph of long-term (25 years from 1989 through 2013) regional flow data for the Deer Island Treatment Plant collection system and annual rainfall. The 25-year average daily flow for the total system was 360 mgd and the average annual rainfall over those 25 years was 44 inches (local NOAA site at Boston

Logan Airport). Over the last three years (2011/2012/2013), MWRA's average daily wastewater flow has been well below average at 322 mgd; while the three-year rainfall has been just below average at 43 inches. Both calendar year 2012 and 2013 were relatively dry (37 and 39-inches of rainfall, respectively) and produced low average daily wastewater flows of about 290 mgd and 310 mgd, respectively.

During the 25-year period of record, the regional wastewater flow trend is modestly declining while the annual rainfall trend is modestly increasing. The declining wastewater flow and increased rainfall trends are more easily visible in Attachment 5, which displays the five-year running averages (flow and rainfall) as a means of smoothing the annual variability in the data.

BUDGET/FISCAL IMPACT:

The FY14 CIP includes an overall budget of $122.6 million for the grant portion of the I/I Local Financial Assistance Program. An additional $178.2 million is budgeted for the loan portion of the program; however, this amount is offset by an equal amount of loan repayments over time. Depending on the timing and level of community loan requests, annual loan distributions can fluctuate, sometimes causing over-spending or under-spending (versus budget) for any particular year. The graph below presents grant and loan distributions and loan repayments (actual and projected) for the first eight phases of the program – FY93 through FY26.



For the first eight phases of the program, the budget target is $300.75 million for grant and loan distributions. To date, $259 million in grants and loans have been distributed and the program has a remaining balance of $41.75 million in future community grants and loans through FY21. Community loan repayments to date are $126 million, leaving a remaining balance of $52.2 million in future repayments through FY26. As community loans are repaid, the funds are deposited into MWRA's construction fund. Community grants and loans are financed via MWRA 30 year bonds. The cost to MWRA to distribute each $10 million in 45% grants and

55% interest-free 5-year loans is approximately $8.3 million. This cost is based on three components: $4.5 million in principal cost for the grant, $3.2 million in bond interest expense for the grant portion, and $0.6 million in bond interest expense for the loan portion.

MBE/WBE PARTICIPATION:

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

ATTACHMENTS:

Attachment 1 – Advisory Board Letter
Attachment 2 – Community Funding Summary
Attachment 3 – Timing of Funding Phases
Attachment 4 – Long-Term Regional Flow Data
Attachment 5 – Long-Term Regional Flow Data - 5 Year Running Average

ATTACHMENT 1

January 27, 2014

Fred Laskey, Executive Director
Massachusetts Water Resources Authority
100 First Avenue, Building 39-3
Boston, MA 02129

Dear Mr. Laskey:

At the regular meeting of the MWRA Advisory Board, held on January 16, 2014 in Lexington, the members unanimously approved the following motion:

TO CREATE PHASES 9 AND 10 OF THE INFLOW/INFILTRATION (I/I) GRANT/LOAN PROGRAM IN THE AMOUNT OF $80 MILLION PER PHASE. IN ADDITION, TO CREATE SUNSET PROVISIONS ON THE GRANT PORTIONS OF PHASE 6 (FY18) AND PHASE 7 (FY21).

Since 1993, through this program, over $256 million have been spent within our communities to fund over 450 local I/I reduction and sewer system rehabilitation projects. These additional two phases, at $80 million each, will help our communities tighten their sewer systems at a time when DEP and EPA regulatory requirements place more stringent demands on them.

The Advisory Board strongly endorses the inclusion of these funds for the FY15 CIP and subsequent CIPs to follow.

Sincerely,

Joseph E. Favaloro, Jr.
Executive Director

cc: Board of Directors
Bonnie Hale, Assistant to the Board
Carl Leone, Senior Program Manager

Joseph E. Favaloro, Executive Director
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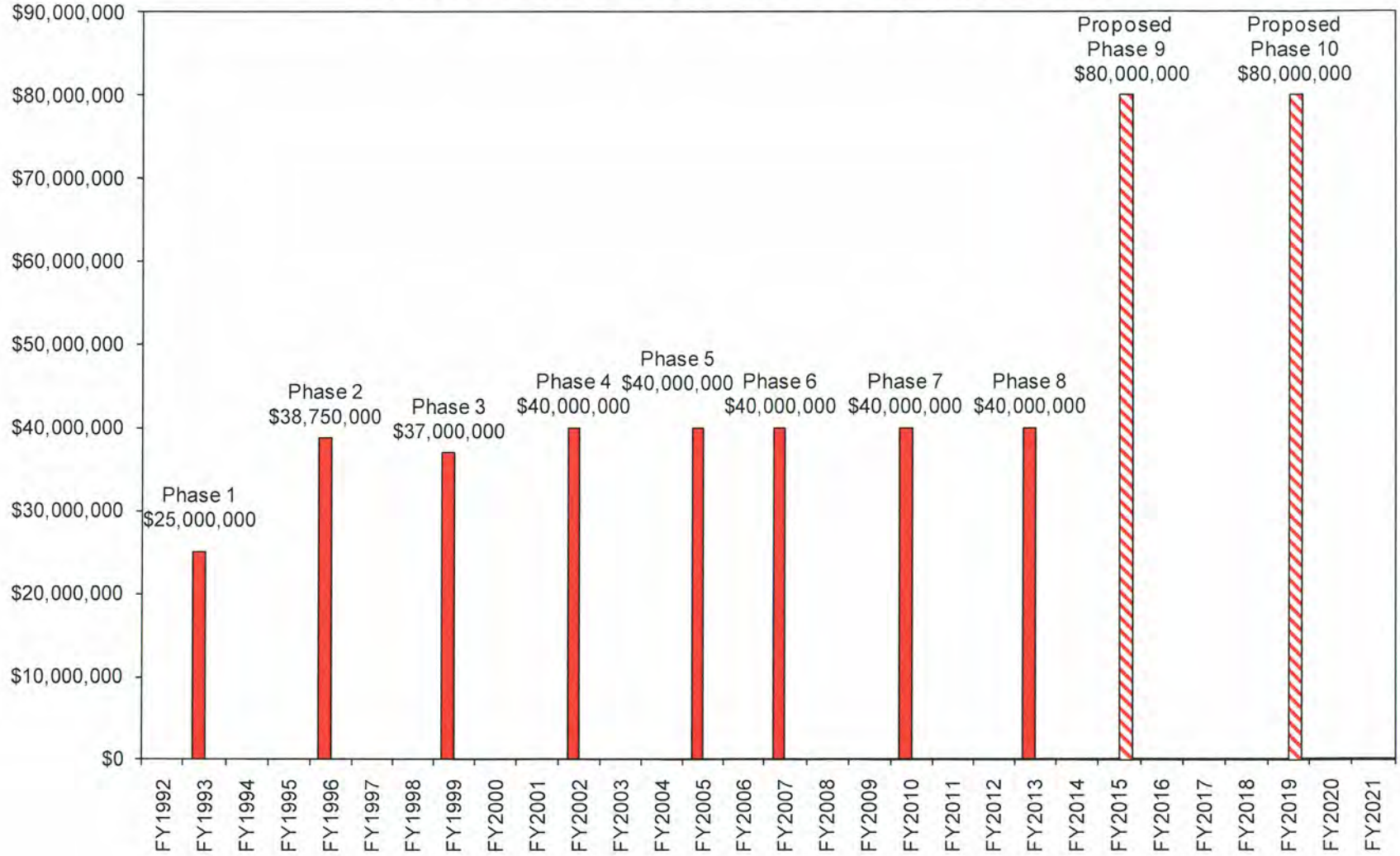
Website: www.mwraadvisoryboard.com • Email: mwra.ab@mwra.state.ma.us

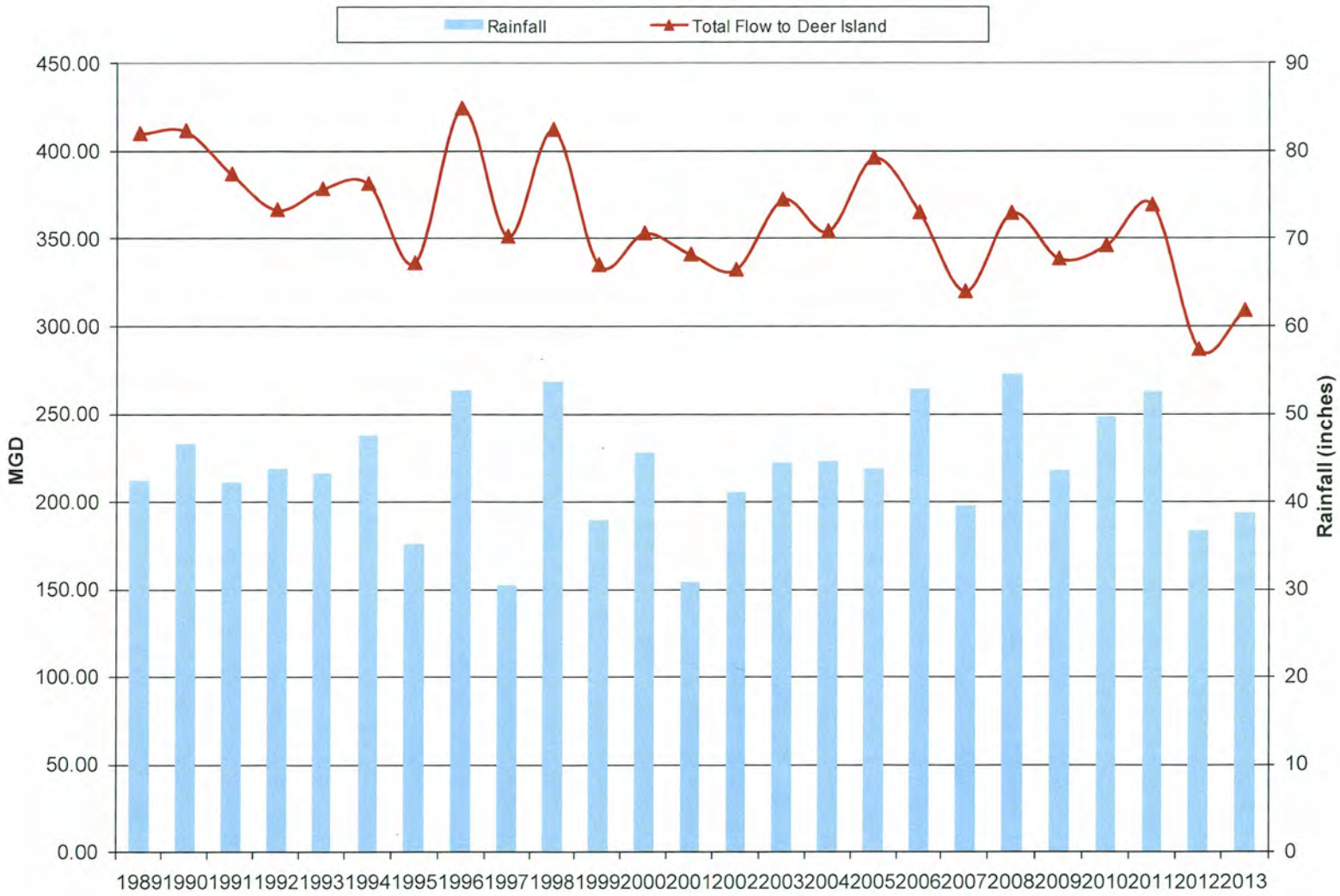
ATTACHMENT 2
MWRA I/I LOCAL FINANCIAL ASSISTANCE PROGRAM
FUNDING SUMMARY AS OF FEBRUARY 2014

Community	Total Allocations (Phases 1 - 8)	Total Distributions (Phases 1 - 8)	Percent Distributed	Funds Remaining
Arlington	$5,613,000	$5,613,000	100%	$0
Ashland	$1,328,500	$1,035,000	78%	$293,500
Bedford	$2,282,600	$1,691,600	74%	$591,000
Belmont	$3,439,100	$2,992,100	87%	$447,000
Boston	$85,585,200	$83,711,976	98%	$1,873,224
Braintree	$5,319,000	$3,425,800	64%	$1,893,200
Brookline	$8,605,200	$5,526,400	64%	$3,078,800
Burlington	$3,304,800	$3,285,800	99%	$19,000
Cambridge	$15,566,100	$11,077,055	71%	$4,489,045
Canton	$2,675,900	$2,675,900	100%	$0
Chelsea	$4,232,100	$4,232,100	100%	$0
Dedham	$3,914,000	$3,914,000	100%	$0
Everett	$5,229,500	$3,141,500	60%	$2,088,000
Framingham	$8,025,000	$5,003,000	62%	$3,022,000
Hingham	$1,032,500	$589,500	57%	$443,000
Holbrook	$1,059,600	$896,562	85%	$163,038
Lexington	$4,835,300	$4,835,300	100%	$0
Malden	$7,825,900	$4,593,900	59%	$3,232,000
Medford	$7,961,600	$4,794,600	60%	$3,167,000
Melrose	$3,914,300	$2,845,300	73%	$1,069,000
Milton	$3,736,500	$3,251,500	87%	$485,000
Natick	$3,644,600	$3,644,600	100%	$0
Needham	$4,269,600	$2,892,150	68%	$1,377,450
Newton	$13,861,400	$11,565,400	83%	$2,296,000
Norwood	$4,519,400	$3,955,399	88%	$564,001
Quincy	$12,882,000	$11,125,000	86%	$1,757,000
Randolph	$3,894,800	$3,894,800	100%	$0
Reading	$2,941,100	$2,520,100	86%	$421,000
Revere	$6,424,900	$5,502,900	86%	$922,000
Somerville	$10,117,800	$10,117,800	100%	$0
Stoneham	$3,291,900	$3,291,900	100%	$0
Stoughton	$3,126,900	$2,696,900	86%	$430,000
Wakefield	$3,932,900	$3,527,400	90%	$405,500
Walpole	$2,404,000	$1,928,300	80%	$475,700
Waltham	$9,022,400	$7,808,400	87%	$1,214,000
Watertown	$4,185,800	$2,581,800	62%	$1,604,000
Wellesley	$3,769,700	$2,748,808	73%	$1,020,892
Westwood	$1,650,300	$1,425,300	86%	$225,000
Weymouth	$7,490,900	$5,349,300	71%	$2,141,600
Wilmington	$1,606,000	$1,388,000	86%	$218,000
Winchester	$2,777,000	$2,777,000	100%	$0
Winthrop	$2,221,400	$1,926,400	87%	$295,000
Woburn	$7,229,500	$7,229,500	100%	$0
Totals	$300,750,000	$259,029,050	86%	$41,720,950

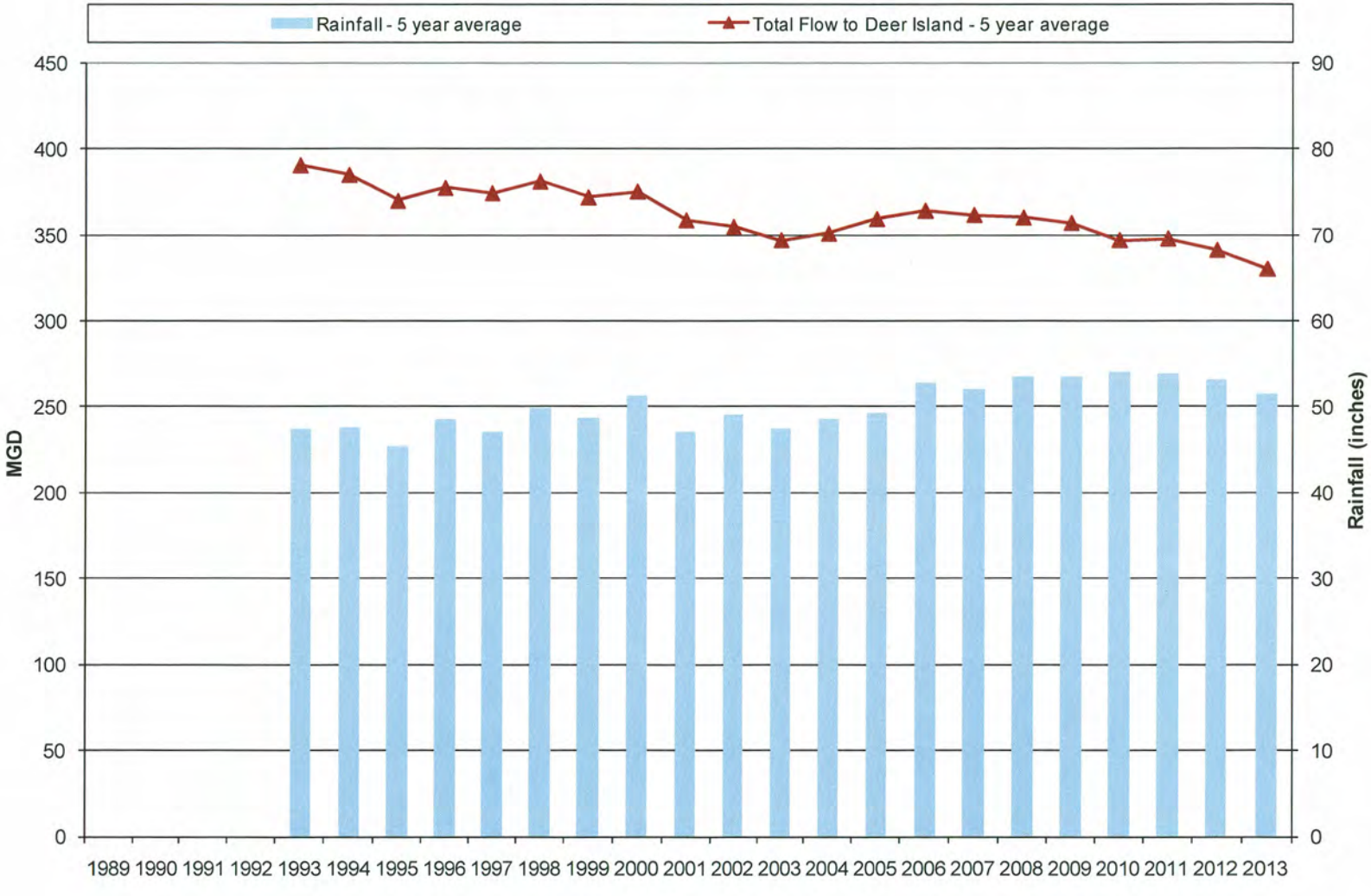
ATTACHMENT 3
I/I Local Financial Assistance Program - Timing of Phase 1 through 8 Funds and Proposed Addition of Phases 9 and 10 at $80 Million per Phase



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



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



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 16, 2014
SUBJECT: Technical Assistance Consulting Services – Surveying
GEOD Consulting, Inc.
Contract 597TA

COMMITTEE: Wastewater Policy & Oversight

___ INFORMATION
_X_ VOTE

Rachel C. Madden, Director
Administration and Finance

Jae R. Kim, P.E., Chief Engineer
Marcel R. Brady, Manager, Contract Administration
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to select GEOD Consulting, Inc., to provide surveying technical assistance consulting services, and to authorize the Executive Director, on behalf of the Authority, to execute Contract 597TA in an amount not to exceed $75,000, for a contract term of three years from the Notice to Proceed.

DISCUSSION:

The purpose of this technical assistance contract is to make available, on a continuing, as-needed basis, the services of qualified, professional surveying engineers to assist MWRA staff on small, unanticipated or urgent projects.

Examples of previous surveying task orders include:

- Development of an existing conditions survey plan, including topographic and planimetric information of roadway, guardrails, dam face, reservoir and overflow pipe for the Blue Hills Covered Storage Facility. In addition, wooded areas, including ledge out crops, edge of water, and trees greater than four inches in diameter at four feet above ground level were surveyed and noted on the plans;

- Researching, surveying, and preparing an easement plan for MWRA water system structures – above and below grade – located within and adjacent to a proposed easement; and

- Marking the area designated within the Fore River Shipyard with the dimensions of a new proposed track alignment.

Procurement Process

Staff utilized a one-step Request for Qualification/Proposals (RFQ/P) process for this procurement. Minimum threshold requirements were pre-established to ensure that the selected firm would be qualified to perform the work. Each firm was required to include on its project team a Professional Land Surveyor (PLS) registered in the Commonwealth of Massachusetts, with a minimum of five years experience preparing and recording land surveys, and experience in the development of public and/or private utility easements. Examples of three recorded land plans and three easement plans prepared by the proposed PLS within the past seven years were required.

Proposers were also required to demonstrate successful experience performing a number of different types of surveying projects, and familiarity with Computer-Aided Drafting Standards similar to those required by MWRA. Respondents meeting these threshold requirements were then evaluated on the basis of cost.

Two responsive proposals were received and staff determined that both firms met the minimum threshold requirements and evaluated each firm's cost proposal. A third proposal was deemed non-responsive to the proposal requirements and was not evaluated.

The procurement process for this technical assistance contract is different from the process for selecting a Consultant for a specific study or design. When the scope of work is clearly known and defined, a Consultant can estimate the level of effort required to produce the desired end product. With technical assistance contracts, the amount of labor hours required is unknown until the need for service arises; task order work varies depending on the size, complexity, and specific task requirements.

Because specific labor hours are unknown, MWRA staff developed a sample cost exercise designed to compare proposers' cost. Firms were required to provide current direct labor hourly rates for personnel to be assigned to the contract and a multiplier, not to exceed 3.0. Proposers were also required to submit comprehensive hourly rates for "Field Crews," described as two-person crews. These rates and multipliers were then inserted into the cost exercise based on MWRA's sample cost exercise.

The Selection Committee then ranked the proposals on the basis of the lowest sample cost exercise estimate as follows:

Firm	Sample Cost Exercise	Final Rank
GEOD Consulting, Inc.	$72,549.64	1
Bryant Associates	$81,868.16	2

GEOD Consulting, Inc. submitted the lowest sample cost exercise and was thus ranked first. The firm has qualified surveying personnel with many years of experience providing professional land surveying services in Massachusetts and throughout New England. The firm's experience and past performance includes projects for MWRA (including the previous Technical Assistance – Surveying contract) and several other government agencies, including city and town water departments, state highway departments, as well as a number of private companies.

The Selection Committee recommends the award of Contract 597TA to GEOD Consulting, Inc. as the lowest-cost qualified proposer.

BUDGET/FISCAL IMPACT:

Sufficient funds have been included in the FY14 Capital Improvement Program budget to award this contract.

MBE/WBE PARTICIPATION:

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

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 16, 2014
SUBJECT: Electrical Equipment Upgrade Construction 4 – Resident Engineering and Inspection
Deer Island Treatment Plant
AECOM Technical Services, Inc.
Contract 7416

COMMITTEE: Wastewater Policy & Oversight

___ INFORMATION
_X_ VOTE

Rachel C. Madden, Director
Administration and Finance

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

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the recommendation of the Consultant Selection Committee to award Contract 7416 Electrical Equipment Upgrade Construction 4 at the Deer Island Treatment Plant to AECOM Technical Services, Inc. to provide resident engineering and inspection services for the Deer Island Treatment Plant Electrical Equipment Upgrade Construction 4, and to authorize the Executive Director, on behalf of the Authority, to execute said contract with AECOM Technical Services in an amount not to exceed $1,039,370.75, for a contract term of 27 months from the Notice to Proceed.

BACKGROUND:

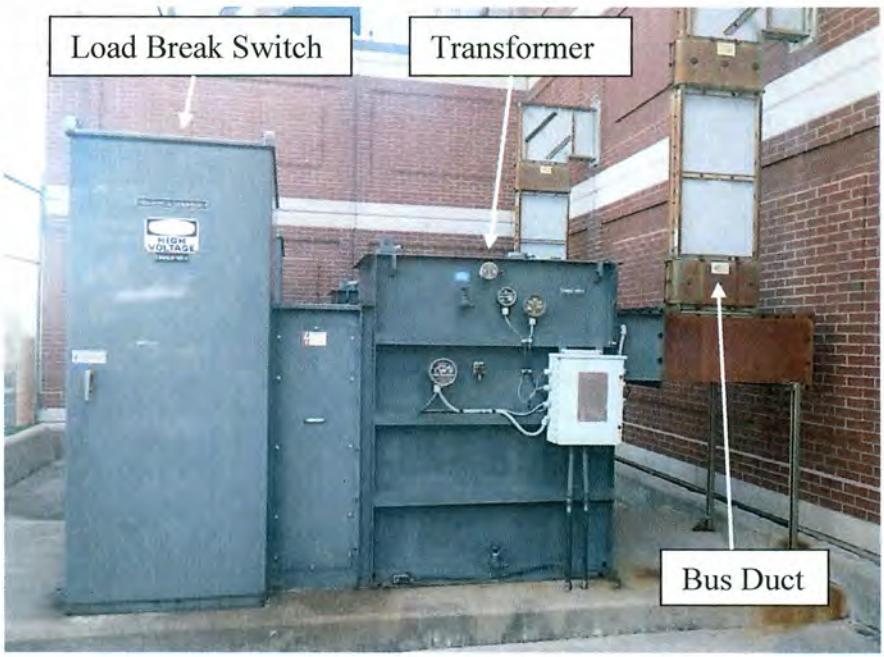
As part of MWRA's on-going Facilities Asset Management Program, staff continually assess the condition and performance of equipment on a routine basis. A critical element of the overall facility infrastructure on Deer Island is the electrical distribution equipment. Within the electrical distribution system, there are many sub-systems and individual components that distribute power throughout all of the facilities and systems on the island. These components include transformers, load-break switches, bus ducts, cables, conduit, motor control centers, and protective relaying systems.

During routine maintenance, the condition of these components is monitored for typical industry criteria, such as insulation resistance, contact resistance, and performance. Staff utilize several industry-wide standards, including the Institute of Electrical/Electronic Engineers, and the

International Electrical Testing Association, to measure the performance of the equipment, and to determine appropriate baselines so that proactive measures can be taken before the equipment fails in service. When degradation of the equipment begins to show, or the frequency or degree of required maintenance increases, staff monitor the equipment more closely and, if warranted, schedule the equipment for replacement.

Construction Contract 6901, Electrical Equipment Upgrade Construction 4, Deer Island Treatment Plant, which was approved by the Board in April 2013, is the next phase of MWRA's on-going capital project to replace various substation transformers, busducts, and load break switches, which staff have determined – using the testing protocols discussed above – have reached the end of their useful and reliable life.

The photo on the right depicts a typical substation on Deer Island, with various components that will be replaced under Contract 6901.



In addition, the contract will provide improvements to the switchgear protective relaying systems for the electrical distribution equipment and Deer Island's existing lighting control system also will be replaced. The protective relaying system performs the critical role of protecting the electrical distribution system from atypical electrical events such as transients and faults that can damage equipment. The relaying systems isolate the equipment to minimize damage and process equipment down time. The existing relays are electro-mechanical (disc and plunger type), which require calibration and testing on an annual basis. In addition, the existing relay units do not provide information other than a "red flag," which is an indication of possible failure. The relay will detect a fault and open a breaker to safely extinguish the fault before damage to the electrical equipment can occur. Staff then must determine the location and cause of the fault before the equipment can be placed back into service. Tracing back and identifying the location of the problem can sometimes take as long as several days under the present protective relaying system.

The recommended new relaying system is a digital, solid-state, self-calibrating system that contains no moving parts and offers extensive fault protection and circuit breaker operation. The new relaying system also provides detailed information about the type and location of the fault when it occurs. This information will enable staff to begin corrective action sooner and will ensure minimal down time of critical process equipment after a fault event. The new relays will

be tied into Deer Island's recently replaced central control and monitoring system, which was installed under an earlier phase of replacement work. This will allow staff to quickly identity and restore power after an outage.

The new lighting control system will replace the existing system that controls the lighting in the Maintenance/Warehouse, Administration/Laboratory and Reception Training buildings. In addition, the new lighting control system will be extended to include the Primary/Secondary clarifiers and cross-gallery lighting systems. Staff will apply for applicable rebates for the lighting control system through NSTAR's Energy Incentive Program (amounts to be determined).

The scope of work under Construction Contract 6901 includes:

- removal, disposal, and replacement of 16 existing cable bus duct systems, 17 existing load break switches, and five liquid-filled transformers;
- modifications to 43 switchgears, including replacement of existing electro-mechanical protective relays with advanced a solid state relaying systems;
- furnishing and installing of 32 Uninterruptible Power Supply (UPS) systems; and
- removal, disposal, and replacement of the existing lighting control system in the Administration/Lab Building and extending this system into the Primary/Secondary Clarifier complexes.

DISCUSSION:

Staff have determined that resident engineering and inspection services are needed for Construction Contract 6901, which is a complex medium-voltage electrical project. These services will include daily oversight of all construction-related activities, which are taking place at multiple locations across Deer Island. Because of the specialized nature of this electrical work, MWRA staff recommend that the resident engineering and inspection work be performed by a highly qualified engineering firm that has staff who regularly perform this specialty work.

Procurement Process

Staff utilized a one step/two envelope procurement process for this project. In the first step, the Selection Committee qualifies all firms capable of performing the services, followed by the second step of opening the cost envelopes of all qualified firms to determine the lowest cost proposal. A Request for Qualifications/Proposals (RFQ/P) was initially issued on December 4, 2013. Staff notified five consultant firms to inform them of the RFQ/P advertisement. Proposals were due on December 20, 2013. However, no proposals were received. Staff contacted the five firms to inquire as to the reasons for the apparent lack of interest. Firms provided a variety of reasons, although the primary reason cited was related to the qualifications requirements for the Resident Engineer. Due to the complexity and special nature of the electrical work involved, MWRA required a high standard of qualifications for key staff (the Resident Engineer and the Resident Inspector). MWRA's requirement for the Resident Engineer was fifteen years of experience in electrical construction oversight, and must be a licensed Master Electrician. It was noted that many of the engineering firms typically have only a limited number of master

electricians on staff and these individuals were already assigned to projects. In addition, the Resident Inspector was also required to be a licensed Master Electrician. One firm felt that it could not be cost competitive and chose not to submit a proposal.

In an attempt to generate additional competition and interest, staff subsequently revised the RFQ/P and determined that replacing the Master Electrician requirement for the Resident Inspector with a Bachelor's Degree in Electrical Engineering would still ensure good electrical experience. Staff initially considered lowering the threshold requirements for the Resident Engineer but because of the complex nature of the electrical work, staff ultimately felt that MWRA's needs would be better served by maintaining the original requirement. The RFQ/P was re-advertised on January 8, 2014. This time, two Qualifications Statements/Proposals, along with separate sealed cost envelopes, were submitted on January 31, 2014 from AECOM Technical Services, Inc. (AECOM) and Fay, Spofford and Thorndike, LLC (FS&T).

The Selection Committee met on February 7, 2014 to evaluate each firm's first-stage qualifications to determine if the firms met the threshold and qualifications requirements using the following criteria: Past Performance on Authority Projects and Experience/Past Performance on Similar Non-Authority Projects; Technical Approach, Organization and Management Approach; and Capacity and Qualifications/Key Personnel.

The Selection Committee felt, after a review of the Qualification Statements, that further clarification of proposed key personnel experience from both firms was required. Staff conducted separate interviews with the firms and asked the same pre-established questions to each firm's proposed Resident Engineer and Resident Inspector. Based on the proposals and interviews, the Selection Committee determined that only AECOM's proposed candidates met the qualifying requirements established by the RFQ/P. The Selection Committee agreed that AECOM's proposal demonstrated that the firm is adequately qualified to successfully perform the work under this contract.

Upon determination that only AECOM met the qualification requirements of the RFQ/P, the Selection Committee reviewed AECOM's cost proposal, which is presented as follows:

FIRM	**COST**
Engineer's Estimate	$750,000.00
AECOM Technical Services, Inc.	$1,039,370.75

AECOM's cost proposal was 39% higher than the Engineer's Estimate. In reviewing AECOM's proposal, it was clear that MWRA's estimate (developed in house) assumed lower billable labor rates for the Resident Engineer and Resident Inspector, accounting for almost 60% of the cost difference. MWRA's estimate also understated the level of effort associated with Task 1, Project Management and Administration. Given the specialized skill set and extensive experience required, and the limited pool of qualified firms (many engineering firms have only a small number of master electricians on staff) MWRA staff agree that the Engineer's Estimate was low and that AECOM's cost proposal, including the hourly rates, is reasonable.

MWRA has experienced a number of design issues with AECOM on several construction projects. On March 1, 2014, AECOM entered into a tolling agreement with MWRA to suspend the running of the statutes of limitation and repose for one year from that date. This time period will allow MWRA staff to review AECOM's performance on the projects and to make a determination whether cost recovery efforts are appropriate and, if they are, the level of such cost recovery. At this time, AECOM continues to provide engineering services on these projects, including providing additional level of effort beyond the contract-specified requirements at no additional cost to MWRA. AECOM also has implemented additional quality assurance measures to avoid similar issues through the completion of these projects. Due to these changes, AECOM's recent performance has significantly improved and is acceptable to MWRA.

It should be noted that AECOM was the Lead Design Engineer for the electrical distribution system for Deer Island under the Boston Harbor Project. Two of the three individuals that will be provide services under this contract played a key role in the oversight of the original electrical system and their experience will be a great asset due to their familiarity and expertise with the existing system. In addition, AECOM's electrical team historically has been one of the firm's strengths, and this team has performed exceeding well over the last 15 years on a number of Deer Island Capital electrical improvement projects.

The Selection Committee recommends that the Board approve the award of Contract 7416 to AECOM Technical Services, Inc. in an amount not to exceed $1,039,370.75.

BUDGET/FISCAL IMPACT:

The FY14 CIP includes a budget of $1,200,000 for Contract 7416. The contract award amount is $1,039,370.75. The construction contract award amount (Contract 6901) was for $10,861,700.

MBE/WBE PARTICIPATION:

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

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 16, 2014
SUBJECT: Electrical Testing and Technical Services – Metropolitan Boston
Infra-Red Building and Power Service Co., Inc.
Contract OP-237

COMMITTEE: Wastewater Policy & Oversight

___ INFORMATION
_X_ VOTE

Rachel C. Madden, Director
Administration and Finance

George Bacon, Project Engineer
Stephen D. Cullen, Director, Wastewater O&M
Preparer

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the award of Contract OP-237, Electrical Testing and Technical Services – Metropolitan Boston, to the lowest, responsive bidder, Infra-Red Building and Power Service Co., Inc., and authorize the Executive Director, on behalf of the Authority, to execute said contract in the bid amount of $627,394, for a contract term of 1,095 calendar days from the Notice to Proceed.

DISCUSSION:

Contract OP-237 is for periodic testing of low- and medium-voltage electrical equipment, such as switchgear, circuit breakers, motor controls, transformers, surge arrestors, batteries and uninterruptable power supplies, at 32 of MWRA's Metropolitan water and wastewater facilities (shown on the attached map). Electrical equipment at each facility will be tested and calibrated during this three-year contract. Although MWRA staff perform routine preventive and corrective maintenance of this equipment, the testing and calibration of the equipment must be performed by certified technicians.

Staff have developed the following schedule for testing based on the equipment at each facility. The schedule for all 32 facilities is shown in a table on the following page. Facilities with medium-voltage equipment will be tested every other year; the other facilities with just low-voltage equipment will be tested once every three years. This is the first of what staff expect to be a rolling, recurring cycle of three-year electrical testing contracts. There was one previous one-year contract awarded in 2012, and prior to that, testing was performed on the basis of smaller, individual spot purchase orders.

	YEAR 1	YEAR 2	YEAR 3
FACILITIES TESTED EVERY TWO YEARS	Intermediate PS Nut Island Headworks Commonwealth Ave. PS DeLauri PS Prison Point CSO	Gillis PS Chestnut Hill Underground PS Newton St. PS Braintree-Weymouth Relief PS	Intermediate PS Nut Island Headworks Commonwealth Ave. PS DeLauri PS Prison Point CSO
FACILITIES TESTED EVERY THREE YEARS	Hough's Neck PS Alewife Brook PS South Boston CSO PS South Boston Vent Bldg.	New Neponset PS Framingham PS Hayes PS Chelsea Creek Headworks Ward St. Headworks Columbus Pk. Headworks Quincy PS Squantum PS Somerville Marginal CSO	Lexington St. PS Hingham PS Caruso PS Cottage Farm CSO BOS019 Storage Conduit Loring Rd. Covered Storage Brattle Ct. PS Hyde Pk. PS Belmont PS Spring St. PS

Additionally, at all facilities, main power transformers will be tested every other year, and all non-SCADA uninterruptable power supply batteries will be tested annually.

The contract includes provisions for unscheduled, as-needed electrical testing and technical services at any of the Metropolitan water and wastewater facilities, not including Deer Island. If an emergency occurs with the electrical equipment, staff will be able to immediately notify the testing company to perform electrical testing to identify the cause of the electrical issue.

Procurement Process

Contract OP-237 was bid as a non-professional services contract. The following bids were received and opened on March 13, 2014:

Bidders	**Bid Amount**
Engineer's Estimate	*$511,000*
Infra-Red Building and Power Service Co., Inc.	$627,394
Electrical Engineering & Service Co., Inc.	$716,158

Infra-Red Building and Power Service Co.'s bid price is 22% above the Engineer's Estimate, which was prepared by MWRA staff based on historical data from prior shorter-term contracts with Infra-Red Building and Power Service Co, Inc. Staff reviewed the bid and contacted a representative from Infra-Red to discuss the bid. Based upon a detailed bid review, staff have determined that the difference between the bid price and staff's estimate is attributed to three factors. The bid included a larger inflation factor than was assumed in the estimate. Staff underestimated the level of effort required for work tasks that are new to this contract and for which there was no historical price data available. In addition, the costs for report preparation and other administrative costs were developed based upon limited past contract experience. In reviewing the bid, those costs also were underestimated. Staff have determined that this bid includes a more accurate representation of those costs.

Staff are confident that Infra-Red Building and Power Service Co. understands the full nature and scope of work under this contract. Staff have determined that the bid price is reasonable and complete.

References were checked and found to be favorable. Staff have been very satisfied with Infra-Red's past performance on prior MWRA electrical testing work.

Staff are of the opinion that Infra-Red Building and Power Service Co. possesses the skill, ability and integrity necessary for the successful performance of this work. Therefore, staff recommend the award of this contract to Infra-Red Building and Power Service Co., Inc., as the lowest responsive bidder.

BUDGET/FISCAL IMPACT:

There are sufficient funds in the FY14 Current Expense Budget (CEB) to cover the costs of the first portion of this contract. Subsequent Proposed CEB requests will include appropriate funding for the remaining term of the contract.

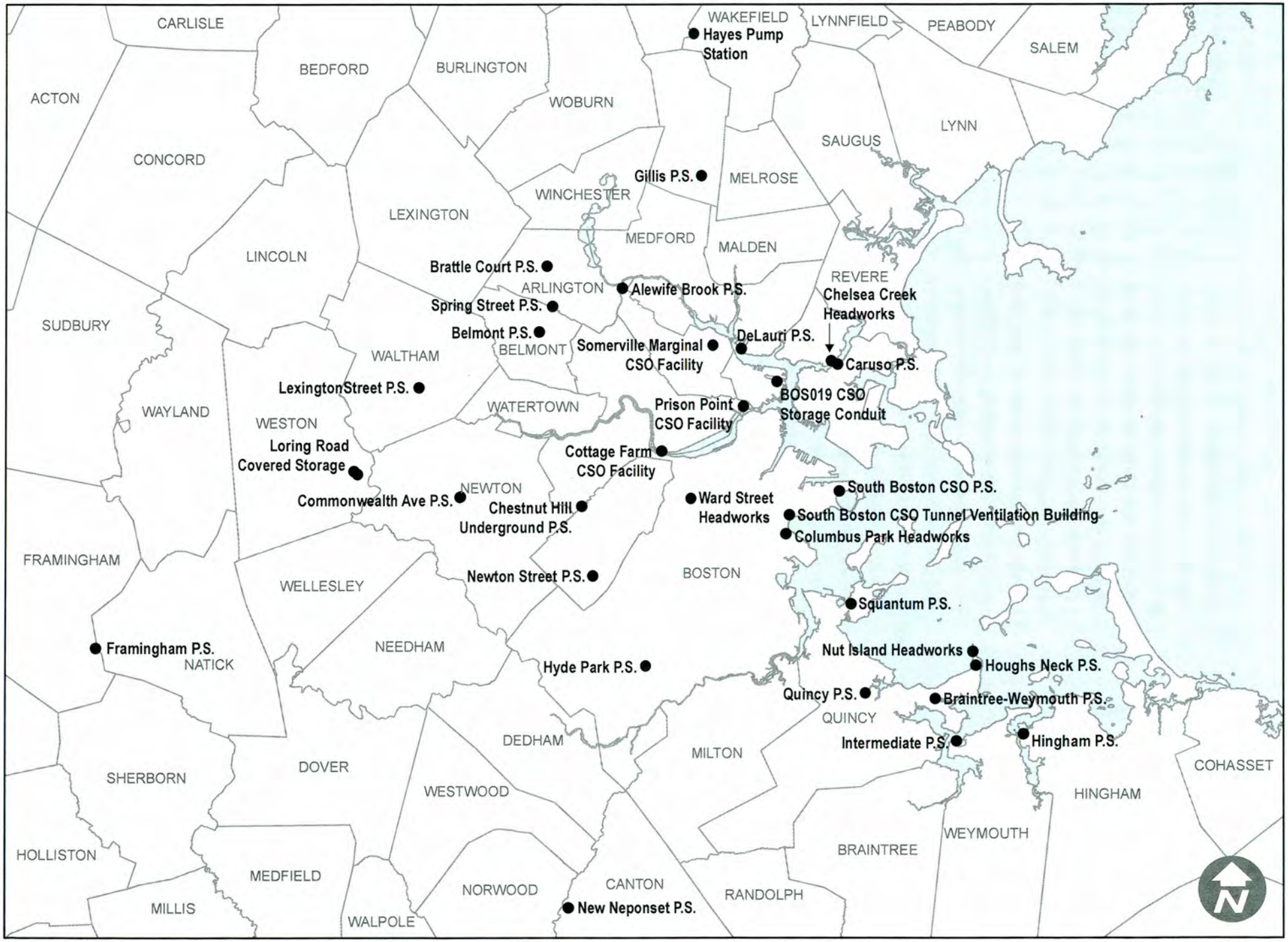
MBE/WBE PARTICIPATION:

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

ATTACHMENT:

Map of MWRA Contract OP-237 Locations

MWRA Contract OP-237 Locations



Date: 3/19/2014

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 16, 2014
SUBJECT: Three-Year, Sole-Source Extended Warranty, Service and Maintenance Agreement for the Process Instrumentation and Control System at the Deer Island Treatment Plant
ABB Automation, Inc.

COMMITTEE: Wastewater Policy & Oversight

____ INFORMATION
__X__ VOTE

Rachel C. Madden, Director
Administration and Finance

David F. Duest, Director, Deer Island WWTP
Michele S. Gillen, Deputy Director, Administration and Finance
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the renewal of a sole-source extended warranty, service and maintenance agreement for the Process Instrumentation and Control System at the Deer Island Treatment Plant, with ABB Automation, Inc., and authorize the Executive Director, on behalf of the Authority, to execute said contract in the amount of $1,186,776.00, for a contract term of three years, from July 1, 2014 through June 30, 2017.

BACKGROUND:

The Deer Island Treatment Plant is controlled by a $24 million process instrumentation and control system (PICS), which was originally procured competitively and installed under the Boston Harbor Project between 1995 and 2000. Staff estimate the current replacement value of PICS to be approximately $40 million. That original contract was awarded to Bailey Controls Company, now known as ABB Automation, Inc. PICS provides a means for Deer Island staff to execute overall plant-wide process control, as well as centralized monitoring, enabling the operation of the facility with minimum staffing. Process data from PICS is also available throughout MWRA via the MIS network and is essential for compliance reporting, plant optimization efforts, budgeting, and "event" evaluations (e.g., unanticipated power loses, etc.).

MWRA's PICS system is among the most expansive of any wastewater plant in the United States. Thousands of field instrumentation devices are used to gather process information, such as: temperatures, pressures, flows, and on/off statuses of remote equipment. These devices are

wired back to 64 control cabinets, commonly referred to as DPUs, located at various locations around the 150-acre site. There are more than one thousand control modules of various types used in these DPUs to gather inputs from process sensors and to send control signals back to Operations, resulting in more than 30,000 input/output points in the PICS system.

All of the information gathered from the process equipment is sent to primary and back-up control rooms and is displayed through a human-machine interface (HMI) supplied by Emerson Process Management Power & Water Solutions, Inc. The plant operators use this HMI as the main tool for monitoring and controlling processes at both the treatment plant and the Thermal/Power Plant. The HMI sits on top of the control system and is the direct interface between Operations staff and the process equipment. The HMI gathers information from all the processes and presents that information to staff through control graphics. The HMI includes hardware (computer servers, operator workstations, and security appliances), software, and control graphics.

The HMI has an estimated value of less than 4% of the total value of the entire PICS system in today's dollars. This recommended ABB maintenance contract will provide maintenance and parts for the remaining 96% of the control system. Staff anticipate continued routine maintenance and evolution of the "control" portion of the system until the 2025 timeframe when replacement may need to be considered. Items in the proposed contract have been included specifically to keep this system up-to-date and to maximize its useful life.

Service and maintenance of PICS is critical to its reliable operation. MWRA staff perform all "first response" functions in terms of maintaining PICS in a fully functional configuration, responding to needs and requests from Operations staff, and implementing process automation changes driven by changing operational strategies.

DISCUSSION:

For the past 15 years, PICS has been serviced and maintained under recurring, three-year sole-source contracts with ABB Automation, Inc. The current contract, in the amount of $1,114,224, will expire on June 30, 2014. The total value of the recommended new contract amount is $1,186,776, which represents a 6.51% increase in price from the current three-year contract. It should be noted that the contract is structured to include a 1.5% escalator in each of the three years.

Due to the magnitude of the entire PICS system and its critical role in the overall operation of Deer Island, staff are of the opinion that it remains in MWRA's best interest to continue to contract directly with the original equipment manufacturer to maintain the extended warranty and to provide service and maintenance on the system. Staff have thoroughly researched the sole-source nature of this procurement. The ABB equipment is of proprietary design and manufacture - there are no third-party vendors of new ABB replacement parts. There are suppliers of reconditioned parts and there are vendors who can provide preventive maintenance on any electronic control equipment. These vendors, particularly in the parts area, tend to rely on recently retired or former vendor personnel to troubleshoot or provide services. Staff are of the opinion that the long-term consistency of this type of support is unreliable. Staff's experience

from the manufacturer of the specific control system. Based on all factors, the Director of Administration and Finance has approved the sole source nature of this procurement.

Staff recommend that MWRA again contract ABB to provide the extended warranty and the ongoing service and maintenance of the PICS system. Combined with the efforts of MWRA staff, this will ensure an uninterrupted supply of replacement parts and up-to-date, system-wide technical information and documentation, and will minimize down-time by ensuring the committed availability of an extensive and qualified field engineering staff, within required response-time parameters, necessary for optimum system-wide performance.

ABB Automation has provided excellent service during all past contracts. The vendor's workmanship has been excellent and ABB's technical support has been responsive in all ways to MWRA's needs. ABB's parts replacements have been timely and professional.

Contract Components

The contract scope and cost elements are broken down into five categories as follows:

Extended Warranty Service $623,294

A major element of the contract is the extended warranty program for the entire PICS system. Under the extended warranty program, ABB will replace any hardware component that fails up to a maximum total of $900,000. The previous contract also provided $900,000 in replacement parts for a cost of $621,198.00 - a 31% discount from list price. This contract will maintain replacement parts at $900,000 for a cost of $623,294 - a 30.75% discount. This warranty coverage has been an effective way to ensure that the original manufacturer's spare parts are replenished and the system remains fully functional at all times, with the added benefit of substantial cost savings.

On-site Corrective and Preventive Maintenance $454,272

The same level of vendor staffing currently allocated in the existing contract will be maintained in the new contract. The installed PICS hardware is running well and is in excellent condition because of current maintenance efforts which include: cleaning, changing filters, replacing corrosion inhibitors, and checking voltage levels and indicator lights. Staff have taken advantage of practical experience (and the generally clean environment) to hold the line on this labor-intensive function.

Emergency Support/Engineering Services $62,244

The new contract will provide the same level of service as the current contract (average of one day per month). This component of the agreement also provides vendor back-up to MWRA staff in the event that severe or complex problems are encountered anywhere on the island.

Internet Subscription Service, Telephone Consultation Service $29,521

This component of the agreement has proven to be of great value to staff. The vendor provides e-mail notices of new software and firmware updates, and notices of newly identified problems and software bugs, pre-release fixes, and workarounds for these problems between major releases. In addition, this function provides MWRA staff with both Internet and telephone access to ABB's technical support staff 24 hours per day, 365 days per year – a critically important way to get immediate technical support when problems arise.

Software Maintenance Program $17,445

The software maintenance program is necessary to keep the system engineering software up-to-date so that staff can take advantage of improvements and fixes to software implemented by the vendor.

BUDGET/FISCAL IMPACT:

Sufficient funds for this contract have been included in the Proposed FY15 Current Expense Budget. Appropriate funding for the remaining two years of the contract will be included in subsequent Proposed CEB requests.

MBE/WBE PARTICIPATION:

ABB Automation, Inc. is not a certified Minority- or Women-owned business.

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 AND OVERSIGHT COMMITTEE MEETING

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

to be held on

Wednesday, April 16, 2014

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

Time: Immediately following Wastewater Comm.

AGENDA

A. Information

1. Update on Sustainable Water Management Initiative

B. Contract Awards

1. Control of Invasive Plants at Stillwater Basin, Wachusett Reservoir: AE Commercial Diving Services, WRA-3800

C. Contract Amendments/Change Orders

1. Quabbin UV Disinfection Facilities: Daniel O'Connell's Sons, Inc., Contract 6776, Change Order 5

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the
Water Policy and Oversight Committee

March 12, 2014

A meeting of the Water Policy and Oversight Committee was held on March 12, 2014 at the Authority headquarters in Charlestown. Chairman Pappastergion presided. Present from the Board were Ms. Wolowicz and Messrs. Barrera, Carroll, Flanagan, Foti, Vitale and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Carl Leone, and Bonnie Hale. The meeting was called to order at 11:40 p.m.

Information

Local Pipeline and Water System Assistance Program Annual Update

Staff gave a presentation providing the annual update on the local pipeline and water assistance program.

The meeting adjourned at 11:50 a.m.

* Approved as recommended at March 12, 2014 Board of Directors meeting.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 16, 2014
SUBJECT: Update on Sustainable Water Management Initiative

COMMITTEE: Water Policy & Oversight

X INFORMATION
VOTE

Stephen Estes-Smargiassi, Director, Planning
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

The Massachusetts Department of Environmental Protection (DEP) had just released its draft revised Water Management Act (WMA) regulations for public comment. These draft regulations implement the substantial changes in state water withdrawal policy developed over the past 4 years under Massachusetts Executive Office of Energy and Environmental Affairs' (EEA) Sustainable Water Management Initiative (SWMI). The changes affect all WMA permits, and shift the balance between water supply needs and environmental protection toward the maintenance and improvement of streamflow characteristics. The changes do not directly affect MWRA as its withdrawals are "registered," but may create additional incentives for communities to consider regional water supply solutions such as MWRA rather than the use of local groundwater or surface water supplies.

The comment period for the draft regulations has just begun and will run until June 10, 2014. DEP will be holding information sessions and public hearings in various locations around the Commonwealth. MWRA staff were involved in the SWMI stakeholder process, and are reviewing the draft regulations.

RECOMMENDATION:

For information only.

DISCUSSION:

Background

Water withdrawals in Massachusetts are regulated by the Water Management Act. Withdrawals at the time the WMA was passed in the early 1980s are "registered" and the quantity of the withdrawal is essentially grandfathered, although a recent state Supreme Court ruling allows DEP to place some conditions on the withdrawal. Any new or increased withdrawals are "permitted" and have more substantial conditions on their approval and use. About 60 of the public water supply withdrawals are registered, including MWRA's withdrawals from the

Quabbin and Wachusett Reservoirs. About 190 other public water supply withdrawals are permitted and are potentially affected by the changes discussed below.[1]

The implementation of the WMA has been an area of controversy between environmental groups and water suppliers since its passage. In 2010, the Executive Office of Energy and Environmental Affairs began an extensive stakeholder process to review and improve how the act functioned "to develop and implement water policy that supports ecological needs while meeting the needs of economic growth." After the more than two-year stakeholder process, the state issued a Framework Summary in November of 2012, followed by a series of pilot projects to fine tune the recommendations as the regulations were being developed. Draft regulations implementing the framework were finally released for public comment early in April 2014. MWRA commented on the Framework, and a copy of our comments is attached. Staff have begun to review the draft regulations and to evaluate how they might affect existing MWRA partially-served communities and those communities on the periphery of MWRA's service area which might potentially consider joining the MWRA water system.

The brief discussion below is a very high level summary of the SWMI framework and regulation changes. The framework itself was a 39 page document, and the draft regulations are over 50 pages long. A copy of DEP's summary of the regulations and public hearing notice is attached.

What are the Changes?

Each of the almost 1400 individual sub-basins in the state are now categorized in five classes as to their " biological category" based on the relative abundance of fluvial (riverine) fish, and "groundwater withdrawal category" based on the net amount of withdrawals in that sub-basin. This much more detailed (although based on GIS data, models and assumptions) view of the sub-basins will be used in the withdrawals permitting process rather than the previous reliance on much broader data for each of the 27 major basins. The attached maps show the categories of each sub-basin. The SWMI web site has an interactive map which allows closer examination of any area of the state.

New or renewed permits in basins which have higher categories of flow depletion (Groundwater Withdrawal Categories 4 and 5, with at least 25% of flow withdrawn) will require additional conservation measures, and further reductions in outdoor watering (only 1 or 2 days per week depending on per capita water use) beyond that already required by DEP's existing standard permit conditions. About 100 public water systems may be affected by this requirement.

New or renewed permits for groundwater withdrawals which request additional withdrawals will be evaluated based on the effect those increases will have on the biological and groundwater withdrawal categories. These permits will require that the applicant demonstrate that there is "no feasible alternative that is less environmentally harmful" as well as mitigation commensurate with the additional withdrawals. The mitigation could include measures such as improving instream flow, increasing wastewater or stormwater recharge, adding fish ladders or removing

1 These numbers do not tell the whole story, because many of the water suppliers have Water Management Act Registrations and much of their authorized volumes are in their registrations (in addition to smaller amounts covered by permits).

dams, and higher levels of demand management effort. These requirements are designed to avoid or mitigate any "backsliding" in biological or groundwater withdrawal categories.

The new regulations also include changes in permit conditions for outdoor water use which generally focus on using more local streamflow triggers for restrictions rather than using statewide or regional drought triggers. This will likely result in more frequent outdoor use restrictions in many communities, or a decision to shift to those restrictions on a regular seasonal basis.

Potential Impacts on MWRA and MWRA Communities

The draft regulations do not directly affect MWRA's registered withdrawals. At this time, DEP is not suggesting the addition of any conditions or any restrictions on water use for public water suppliers with registrations. Essentially, any water supplier with only a registration is using the same amount or less water than they were in the early 1980s; these are the communities with already successful demand management efforts. While the state Supreme Court did affirm that DEP has the authority to condition the registration renewals, DEP has taken no action to issue the regulations that would be necessary to do so at this time.

Overall, the changes in the regulations will make it significantly more difficult for public water suppliers without Water Management Act registrations to permit increased use of their supplies, and create additional restrictions on consumer's use of water. That, along with DEP's requirement that alternatives that are less environmentally harmful be considered before more local withdrawals are permitted, may make regional supplies such as MWRA a more attractive option in the future. During the SWMI stakeholder process, connection to MWRA or other regional suppliers was frequently mentioned as possible way that communities could still grow while having less impact on local streams.

A preliminary review of the SWMI category maps indicates that a number of partially supplied communities and communities on the periphery of our system are in higher (more affected) categories, and would be subject to some of the additional conditions placed on renewed or increased permits. These include several that have expressed some interest in MWRA water already and a number in the Ipswich River watershed potentially able to connect to the MWRA system. Staff will be evaluating both the data from the SWMI maps and each community's potential to run afoul of the new permitting conditions.

ATTACHMENTS:

MWRA Comment Letter on SWMI Framework
DEP Hearing Notice and Regulation Summary
SWMI Maps of Biological Categories and Groundwater Withdrawal Categories

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

April 6, 2012

Kathleen Baskin, P.E.
Director of Water Policy
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, 9th floor
Boston, MA 02114

Dear Ms. Baskin:

Thank you for the opportunity to provide comments on the Executive Office of Energy and Environment's Sustainable Water Management Initiative (SWMI) Framework. The Massachusetts Water Resources Authority was pleased to be invited to participate in the SWMI Advisory Committee and appreciates the effort of the state's environmental agencies in involving a wide range of stakeholders in the process. MWRA's water sources are registered, and are thus not directly affected by the elements of the framework as developed, but as the state's largest water supplier, MWRA is a key stakeholder and our water resources play an important role in any state water policy.

The work done over the past two years by the state's environmental agencies and by USGS has clearly provided a much more robust basis for policy decisions. While not all stakeholders appear to be in full agreement with every aspect of the data and models or how they were used in the framework, it is clear that both land development (as measured by percent of impervious coverage) and water withdrawals affect the quality of the river environment. Our own experience in protecting the watersheds around the Quabbin and Wachusett reservoirs bears this out.

MWRA has been a leader both in Massachusetts and nationally in developing and implementing demand management programs to reduce water withdrawals. MWRA's demand has dropped from approximately 340 million gallons per day (mgd) in 1980 to approximately 200 mgd today. These reductions have been accomplished in concert with providing service to additional customer communities and thereby reducing their withdrawals from locally stressed basins. Providing service to Wilmington and Reading in the headwaters of the Ipswich River has already had a positive impact on that river system. Similarly, providing service to Stoughton and the Dedham-Westwood Water District has allowed those communities to continue to grow and develop economically without further stressing the Neponset River.

Our successful demand management programs mean MWRA has water available to assist more stressed basins. A regional solution to local water management issues makes sustainable

water resource policy sense and was recently endorsed by the Water Infrastructure Finance Commission in its draft report. MWRA sources are less environmentally harmful than withdrawals from many local sources in stressed basins because of MWRA's reduced reservoir withdrawals; the reservoirs' ability to retain water from average and wet years for use in dryer periods; and the regular releases MWRA makes to downstream rivers even during drought periods.

MWRA notes that the proposed approach to defining the benefits of reservoir storage within the Safe Yield definition appear to be appropriate given the statutory definition of Safe Yield.

While it is clear that use of the regional system can be an environmentally sound solution for some communities' water supply needs, it is also clear that there are financial barriers to community acceptance of regional solutions. MWRA is evaluating how to reduce these financial barriers to entering the MWRA system in ways which are equitable to our current ratepayers, but it also appears that in some cases state support for needed infrastructure may be necessary. As EEA is finalizing the SWMI framework, it is critical that the financial issues receive as much attention as the environmental issues.

In addition, in the past, the regulatory process for resolving local water resource problems with regional solutions has been costly and time consuming. Communities have been rightly concerned about entering a lengthy process with an uncertain outcome. Institutional barriers, such as the Interbasin Transfer Act and the complexity of MEPA can be overcome, but clear signals from permitting agencies about local options are necessary to facilitate environmentally appropriate decisions. If it is clear from the SWMI framework and eventual regulations, and from the guidance and direction provided by DEP and DCR staff, that continued or additional use of a particular local water resource is environmentally infeasible, communities will feel more confident in exploring other solutions.

In conclusion, it appears that the proposed Sustainable Water Resource Initiative Framework represents an important step forward in state water resource planning. MWRA and our well-protected and ample regional water supply reservoirs can be a significant part of the solution in some river basins, but to do so effectively may require financial assistance to the affected communities and additional streamlining and clarity in the regulatory process. MWRA stands ready to help move the SWMI process into implementation.

Sincerely,

Frederick A. Laskey
Executive Director

Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

One Winter Street Boston, MA 02108 • 617-292-5500

DEVAL L. PATRICK
Governor

RICHARD K. SULLIVAN JR.
Secretary

DAVID W. CASH
Commissioner

Public Notice

Pursuant to M.G.L. c. 30A, the **MA Department of Environmental Protection** (MassDEP) gives notice of its intent to amend the **Water Resources Management Program Regulations** (310 CMR 36.00) promulgated under the Massachusetts Water Management Act (M.G.L. c. 21G). The proposed regulations and draft permitting guidance are available from the MassDEP website at: www.mass.gov/eea/agencies/massdep/news/comment.

Summary

Water Resources Management Program regulations establish enforceable standards, criteria and procedures (including permit procedures) to implement the Water Management Act (WMA) in order to comprehensively manage water withdrawals through the Commonwealth to ensure an appropriate balance among competing water needs and the preservation of water resources. Water withdrawers typically requiring a WMA permit include public water suppliers, 18-hole golf courses, cranberry growers, ski areas, sand and gravel facilities, fish hatcheries, and agricultural and industrial users. WMA permitting requirements apply to approximately 190 public water supply systems and an additional 140 other users with permits.

The proposed revisions to the WMA regulations incorporate a new methodology for calculating "safe yield" and the concept of "streamflow criteria" as developed through the multiyear Executive Office of Energy and Environmental Affairs (EEA) stakeholder process known as the Sustainable Water Management Initiative (SWMI). SWMI was started in 2010 by EEA for the purpose of incorporating the best available science into the management of the Commonwealth's water resources and involved a wide range of stakeholders and support from EEA, the Department of Environmental Protection, the Department of Fish and Game, and the Department of Conservation and Recreation.

The draft regulations reflect a carefully developed balance to protect the health of our waterbodies while meeting the needs of businesses and communities for water. The regulatory package also clarifies WMA permitting requirements and processes.

The proposed amendments incorporate the following SWMI-related elements:

- Safe Yield: A new methodology for calculating the amount of water that can be withdrawn from a basin. (310 CMR 36.13)
- Baseline: The volume of water against which MassDEP will measure a permit renewal applicant's requested volume.

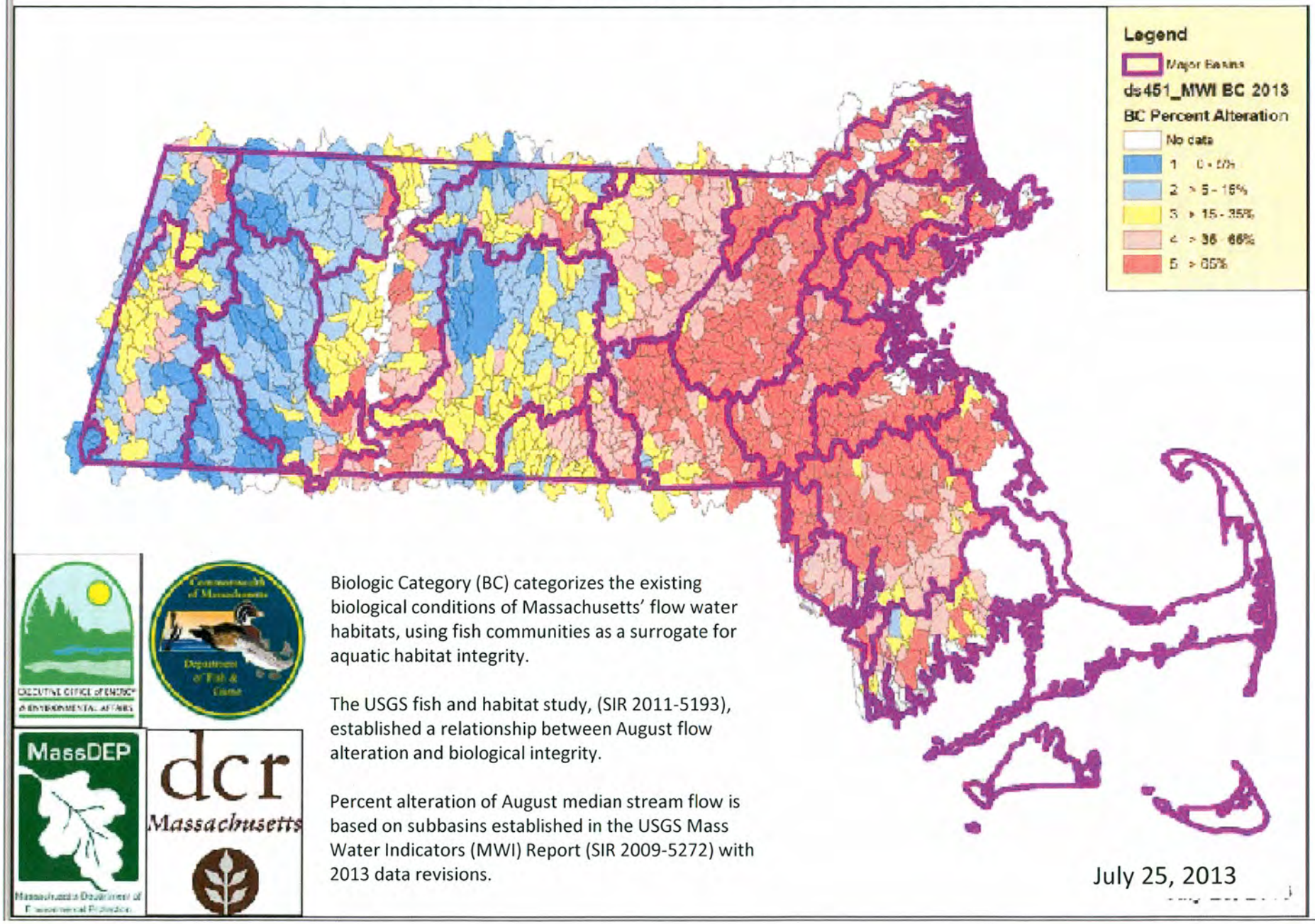
Thursday, May 8, 2014
Time: presentation 10:00 – 11:30
public hearing 12:00 – 2:00
MassDEP Western Regional Office
436 Dwight Street, 2nd Floor
Springfield, MA 01103

Monday, May 12, 2014
Time: presentation 10:00 – 11:30
public hearing 12:00 – 2:00
Barnstable County Department of Health and Environment
121 Glen Road
Old Harbor Conference Room
Barnstable, MA 02630

Wednesday, May 14,2014
Time: presentation 10:00 – 11:30
public hearing 12:00 – 2:00
Wilmington Town Hall, Room 9
3195 Main Street
Wilmington, MA 01887

For questions about the public hearings, please contact Beth McCann at elizabeth.mccann@state.ma.us or 617-292-5901.

Biological Category (BC)
for the Sustainable Water Management Initiative (SWMI)



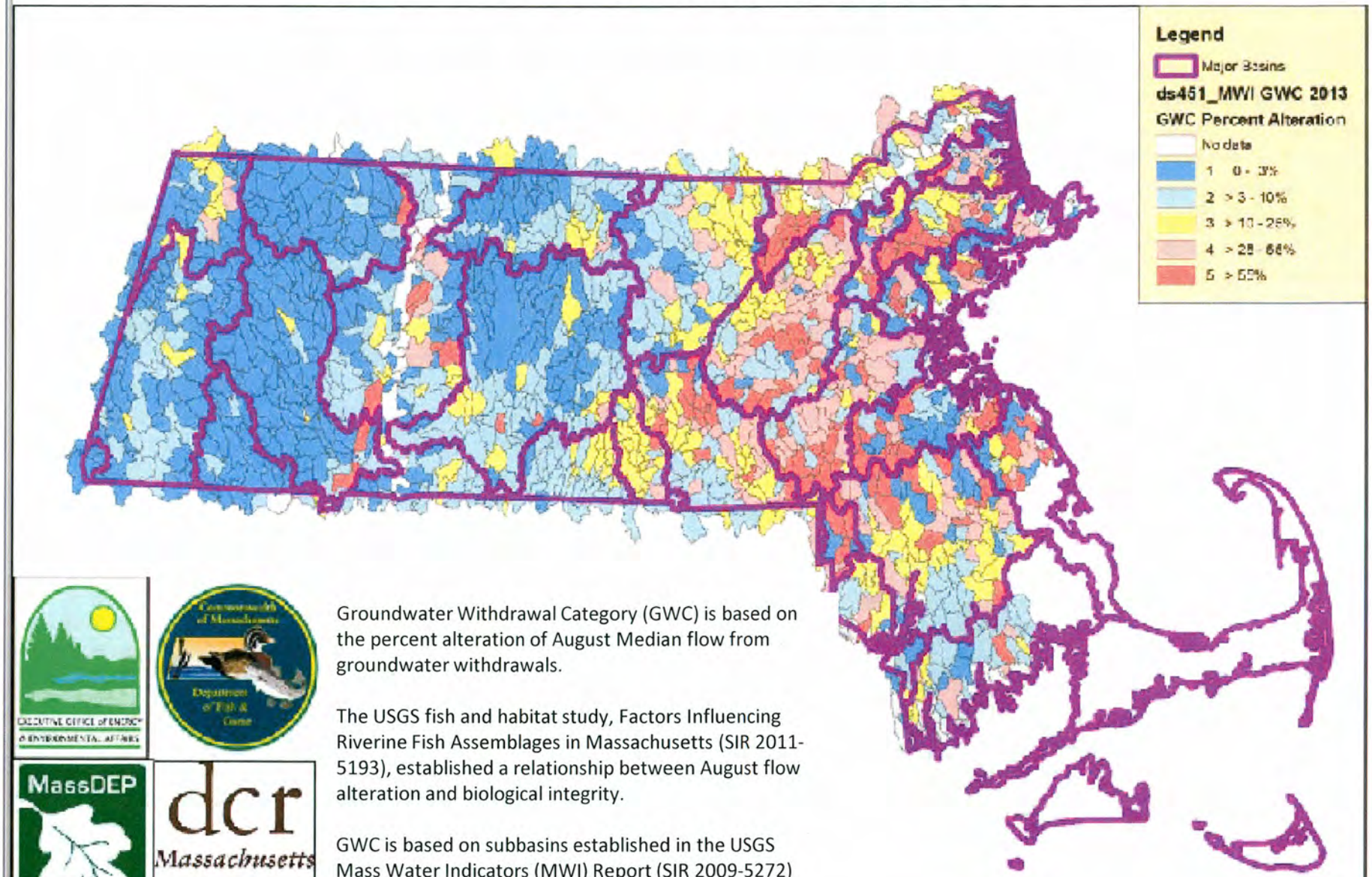
Biologic Category (BC) categorizes the existing biological conditions of Massachusetts' flow water habitats, using fish communities as a surrogate for aquatic habitat integrity.

The USGS fish and habitat study, (SIR 2011-5193), established a relationship between August flow alteration and biological integrity.

Percent alteration of August median stream flow is based on subbasins established in the USGS Mass Water Indicators (MWI) Report (SIR 2009-5272) with 2013 data revisions.

July 25, 2013

Groundwater Withdrawal Category (GWC)
for the Sustainable Water Management Initiative (SWMI)



Groundwater Withdrawal Category (GWC) is based on the percent alteration of August Median flow from groundwater withdrawals.

The USGS fish and habitat study, Factors Influencing Riverine Fish Assemblages in Massachusetts (SIR 2011-5193), established a relationship between August flow alteration and biological integrity.

GWC is based on subbasins established in the USGS Mass Water Indicators (MWI) Report (SIR 2009-5272) with 2013 data revisions.

July 25, 2013

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 16, 2014
SUBJECT: Control of Invasive Plants at Stillwater Basin, Wachusett Reservoir
AE Commercial Diving Services
WRA-3800

COMMITTEE: Water Policy & Oversight

____ INFORMATION
__X__ VOTE

Rachel C. Madden, Director
Administration and Finance

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

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the award of a purchase order contract for the control of invasive plants at Stillwater Basin in the Wachusett Reservoir to the lowest responsive bidder under Bid WRA-3800, AE Commercial Diving Services, and to authorize the Executive Director, on behalf of the Authority, to execute said purchase order contract in the bid amount of $259,600.

BACKGROUND:

The Wachusett Reservoir is a major component of MWRA's drinking water supply system for greater Boston and the MetroWest communities. In August 2001, a pioneering colony of Eurasian watermilfoil (*Myriophyllum spicatum*) was observed for the first time in the basin system at the upper reaches of the reservoir. Eurasian watermilfoil is an exotic, invasive species of macrophyte known to aggressively displace native vegetation and grow to nuisance densities with associated impairments to water quality. It propagates in three ways: maturation and seeding, by rhizomes (roots), and by late-season *auto-fragmentation* where plant fragments, shown in the picture on the right, drift downstream, sink, and then take root to become new plants.

Eurasian watermilfoil fragment

The picture below shows the most dense Eurasian watermilfoil area of Stillwater Basin before control efforts.

Additionally, in recent years another plant, Fanwort (*Cabomba caroliniana* – shown in the picture on the right) has been observed to be increasing in the basin system.

Prior to 2001, both of these plants were restricted to the uppermost component of the reservoir system, Stillwater Basin (Fig. 1 on the following page). However, since then both species have migrated to lower basins where control efforts had been in place.

MWRA had previously initiated a consultant study to evaluate a number of alternatives, including dredging, to address the invasives problem. Dredging was not a viable option, at least in the short term, because in addition to cost (estimated at $2.6 to $4.2 million), MWRA would face a multi-year permitting process, extreme challenges associated with coffer-damming a moving river, and the high risks of significant increases in turbidity.

Fanwort (*Cabomba caroliniana*)

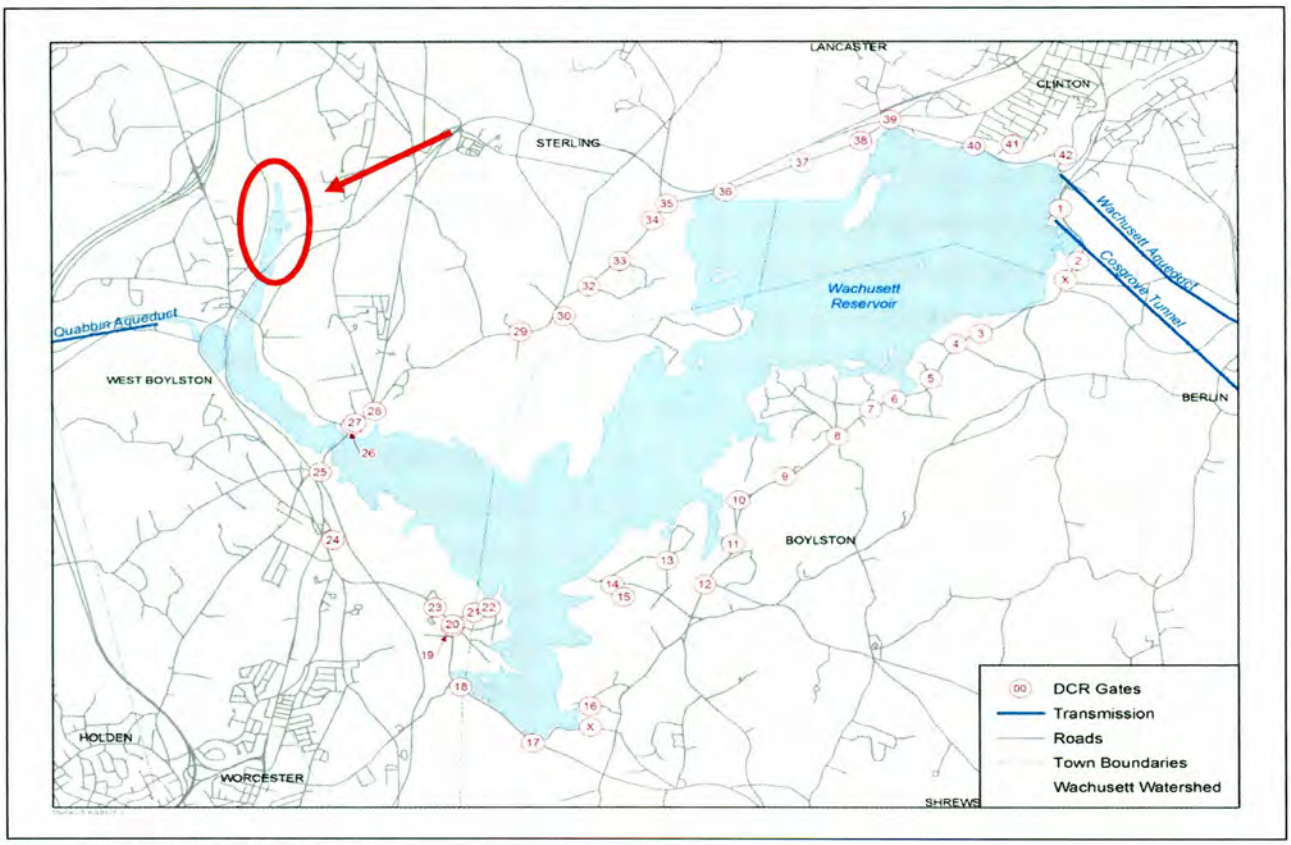


Figure 1. Stillwater Basin circled

A subsequent decision was made to maintain a "fire-break" to prohibit the plants' migration from the basins into the main body of the reservoir where large shallow areas in the north basin near the intake are highly susceptible to invasive plant infestation.

Control efforts for these invasive aquatic plants under the "firebreak" approach have been underway since 2002. These efforts have included installation of two acres of benthic barriers to smother infestation zones in upper reaches of the basin system, seasonal diver hand-pulling of plants, and seasonal installation of fragment barriers at strategic locations in the basin system.

Success of the program was measured in several ways: by volume of plant matter removed annually, by pre- and post-season surveys, and by the fact that, with the exception of an occasional plant, no infestations were found in the main body of the reservoir. However, in 2012, hundreds of invasive Eurasian watermilfoil plants were found to have taken root just outside of the Rt. 12 Causeway "firebreak" zone in the southern end of Wachusett Reservoir. While these plants were removed, it prompted staff to consider more aggressive control measures, and to recommend that greater resources be directed to the upstream source of the plant matter, at Stillwater Basin.

DISCUSSION:

In March 2013, the Board approved the award of the first large-scale, basin-wide effort to remove the dense accumulation of aquatic invasive plants from Stillwater Basin using Diver Assisted Suction Harvesting or "DASH." With DASH, the divers identify and pull the invasive

plants and roots out and guide them into the suction hoses, which then deposit them on filter screens mounted on boats. The pictures below show MWRA's contracted DASH boats in operation at Stillwater Basin in summer 2013.

DASH divers working the basin

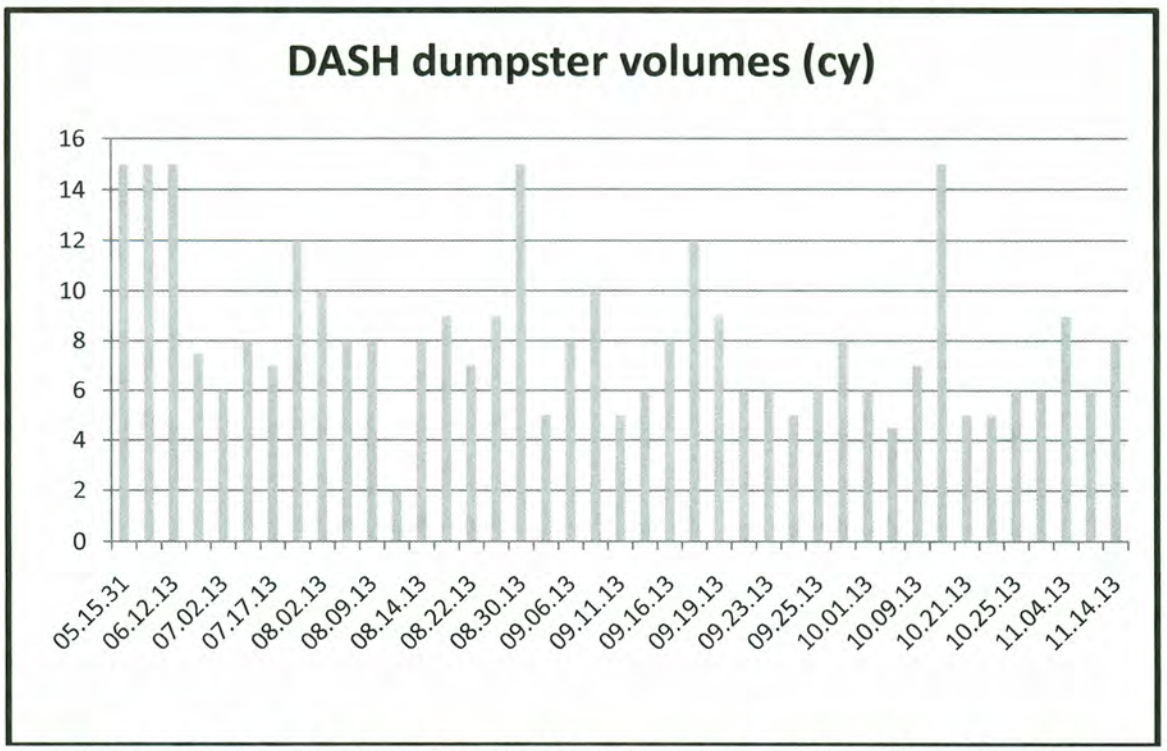
Suctioned plants deposited on screens

The 2013 DASH contract began in May and was completed in November. The contractor removed 333 cubic yards (dewatered) of invasive plants from Stillwater Basin (see photos and chart on the following page). Based on the success of the 2013 DASH contract, staff recommend that MWRA again employ the DASH approach for this summer to continue its aggressive efforts to remove and prevent the spread of these invasive species.

Since last year's contract was MWRA's first large-scale DASH application, staff were able to learn some valuable lessons and have incorporated them into this year's contract. The basin has now been segregated into three zones. The most dense area of the basin (Zone 2 - the center) will be worked first, followed by the north (Zone 1) and south (Zone 3) locations. Floating fragment booms will be repositioned to more optimal locations, and signs identifying the zones will be positioned on the shoreline for ease in assessing the contractor's work.

Harvested plants in smaller containers on the boat

Plants transferred into dumpsters for disposal



Cubic yards of plant material disposed of during contract work from May to November

Harvested plants are deposited daily into a dumpster (rented by the Department of Conservation and Recreation, Watershed Division) stationed at the Basin shore. Once filled, DCR empties the dumpster into a dump truck and transports the harvested plants to its compost facility.

The timing of DASH work is critical to ensuring maximum success. Based on the plants' growing season and documented re-growth after initial harvesting, as well as the lessons learned from the 2013 effort described above, staff have developed a two-phase approach that covers the three distinct work zones. The work will span from late April (earlier than last year) through Mid-November.

The first phase is intended to address the plants soon after they emerge for the season, and in the most dense growth area in the center of the basin, followed by the north and south segments of the basin. The second phase is intended to remove anticipated re-growth from seed stock and rhizomes remaining in the sediment from the first phase. Progress on the phases will be monitored by daily accounting of work completed in 25-square-meter grids.

Looking ahead, staff plan to continue to attack the invasive plants in Stillwater Basin utilizing the DASH approach for at least two more seasons followed by maintenance-level harvesting. Ideally, each season will substantially reduce the remaining root fragments and their ability to regenerate new plants. In the longer term, staff believe that the basin can slowly become repopulated with native plants.

As in 2013, staff will procure a separate quality assurance dive contractor to inspect the DASH work zones weekly after MWRA's contractor has completed work in these areas. These areas will be videotaped for documentary purposes, as well as to ensure that specific target areas are easily identified if contractor re-work is necessary. The before and after photos from 2013 below clearly demonstrate the value of this separate inspection/videotaping contract.

Before DASH

After DASH

Procurement Process

Bid WRA-3800 was advertised in the following publications: Boston Herald, Goods and Services Bulletin, El Mundo, and Bay State Publications. Bids were also made available for public downloading on MWRA's new e-procurement system. In addition, staff notified vendors known to provide these services of the opportunity to bid.

On March 18, 2014, two bids were received with the following results:

BIDDER	**BID AMOUNT**
AE Commercial Diving Services	**$259,600**
Staff's Estimate	*$300,000*
Aqualogics, Inc.	$373,200

Staff have reviewed AE Commercial Diving Services' bid and also conducted a follow-up interview with the firm. References were checked and found to be favorable. AE Commercial Services has successfully completed similar DASH work in Lake Willoughby, in Westmore, Vermont, and in Woodridge Lake, in Litchfield Connecticut. MWRA staff are familiar with AE Commercial Diving Services from its past work 2012 and 2013 as a subcontractor to Aquatic Control Technologies, Inc. during invasives control work in the Wachusett Reservoir.

AE Commercial Diving has committed to deploying up to three DASH boats and six divers simultaneously to methodically remove the plants across the basin according to MWRA's scope of work. Staff are confident that AE Commercial Diving Services can perform the work under the contract schedule, for the bid price. Therefore, staff recommend the award of this contract to AE Commercial Diving Services as the lowest responsive bidder.

BUDGET/FISCAL IMPACT:

Funding for this contract is included in the FY14 and Proposed FY15 Current Expense Budgets.

MBE/WBE PARTICIPATION:

AE Commercial Diving Services is not a Certified Minority- or Women-owned business.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 16, 2014
SUBJECT: Quabbin UV Disinfection Facilities
Daniel O'Connell's Sons, Inc.
Contract 6776, Change Order 5

COMMITTEE: Water Policy & Oversight

____ INFORMATION
_X_ VOTE

Kenneth Chin, Sr. Construction Manager
A. Navanandan, P.E., Director, Construction
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To authorize the Executive Director, on behalf of the Authority, to approve Change Order 5 to Contract 6776, Quabbin UV Disinfection Facilities, with Daniel O'Connell's Sons, Inc., for a not-to-exceed amount of $630,000, increasing the contract amount from $5,722,433.83 to $6,352,433.83, with no increase in contract term.

Further, to authorize the Executive Director to approve additional change orders as may be needed to Contract 6776, 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 Quabbin Disinfection Facility (previously the Ware Disinfection Facility), serves the three Chicopee Valley Aqueduct (CVA) communities of Wilbraham, Chicopee, and South Hadley Fire District No. 1, which are supplied directly from the Quabbin Reservoir. The existing facility was constructed in 2000 and currently utilizes sodium hypochlorite (free chlorine) for primary and residual disinfection.

EPA's Long-Term 2 Enhanced Surface Water Treatment Rule requires MWRA to add an additional disinfectant at this facility by October 1, 2014. Under the new rule, all unfiltered water systems must have two primary means of disinfection. Based on the findings of pilot testing and other research, staff have concluded that the addition of ultraviolet (UV) light disinfection is the strongest and most cost-effective solution.

Under Contract 6776, the Contractor is furnishing and installing UV disinfection equipment, instrumentation and controls equipment, HVAC equipment, and related items. Construction

includes selective demolition, yard piping, in-ground vault construction, chemical feed, plumbing, and electrical systems. Work on this contract is now approximately 78% complete.

This Change Order

Change Order 5 consists of the following additional work:

Furnish, Install, and Remove a Bypass Piping System on the CVA and Remove and Replace a 48-inch Butterfly Valve in Valve Chamber 1	$630,000

The contract requires that the Contractor connect new 48-inch raw and finish water piping to the CVA. It is MWRA's responsibility to close an existing 48-inch butterfly valve between the connection point and the CVA to stop the flow of water so the Contractor can finish connecting the new piping. However, MWRA staff were unable to get a full shutdown due to a malfunction of the valve. The Contractor will be unable to install the new piping without stopping flow from the CVA.

Any shutdown of the CVA would have a great impact on providing water to Chicopee, South Hadley, and Wilbraham. Several options were considered and discussed with these communities. The recommended option is a full by-pass system so that water supply is not interrupted (see attached locus map). While the by-pass system is in place, the Contractor will be required to replace the existing malfunctioning valve with a new 48-inch valve to avoid another shutdown of the CVA.

Currently, the Design Engineer, AECOM, and MWRA staff are still reviewing the Contractor's schedule in light of this additional work. If any additional time or costs are incurred by the Contractor resulting from this additional work, it will be addressed by a future change order.

The approved Proposed Change Order for this work has been identified by MWRA staff as an unforeseen condition. AECOM, MWRA staff, and the Contractor have agreed to a not-to-exceed amount of $630,000 for this additional work with no increase in contract term. The Contractor has proceeded with this work at its own risk in order to proceed with the remainder of the contract work.

CONTRACT SUMMARY:

	AMOUNT	TIME	DATED
Original Contract:	$5,476,000.00	580 Days	01/03/13
CHANGE ORDERS			
Change Order 1*:	$11,392.80	0 Days	09/11/13
Change Order 2*:	$96,388.80	0 Days	02/12/14
Change Order 3*:	$13,145.47	0 Days	04/02/14
Change Order 4*:	$125,506.76	0 Days	Pending
Change Order 5:	$630,000.00	0 Days	Pending
Total Change Orders:	$876,433.83	0 Days	
Adjusted Contract:	$6,352,433.83	580 Days	

*Approved under delegated authority

If Change Order 5 is approved, the cumulative total value of all change orders to this contract will be $876,433.83 or 16% of the original contract amount. Work on this contract is approximately 78% complete.

BUDGET/FISCAL IMPACT:

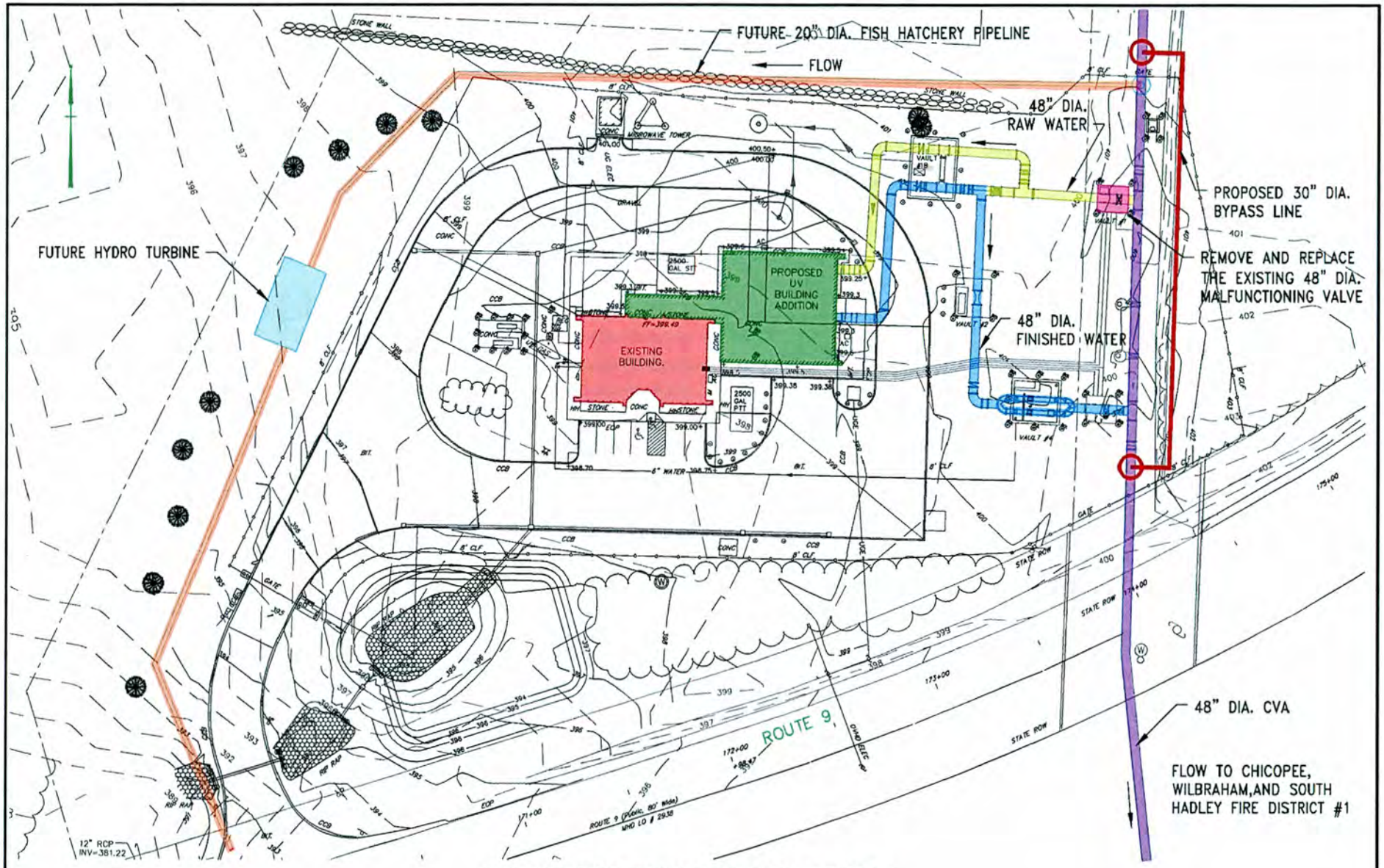
The FY14 CIP includes a budget of $5,476,000 for Contract 6776. Including this change order for a not-to-exceed of $630,000, the adjusted subphase total will be $6,352,433.83 or $876,433.83 over budget. The Final FY15 CIP will include adequate funding based on this change order.

MBE/WBE PARTICIPATION:

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

ATTACHMENT:

Locus Map of Recommended Change Order Work



MASSACHUSETTS WATER RESOURCES AUTHORITY
WARE DISINFECTION FACILITY
SUBSURFACE POWERHOUSE VAULT

MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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Fax: (617) 788-4899
TTY: (617) 788-4971

PERSONNEL & COMPENSATION COMMITTEE MEETING

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

to be held on

Wednesday, April 16, 2014

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

Time: Immediately following Water Comm.

A. Approvals

1. PCR Amendments – April 2014
2. Appointment of Chief Engineer
3. Appointment of Director, Construction
4. Appointment of Manager, Process Control
5. Appointment of Manager, SCADA and Process Control
6. Appointment, Senior Program Manager, SCADA

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the
Personnel and Compensation Committee

March 12, 2014

A meeting of the Personnel and Compensation Committee was held on March 12, 2014 at the Authority headquarters in Charlestown. Vice-Chair Wolowicz presided. Present from the Board were Messrs. Barrera, Carroll, Flanagan, Foti, Pappastergion, Vitale and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Bob Donnelly, Karen Gay-Valente, and Bonnie Hale. The meeting was called to order at 11:50 a.m.

Approvals

*PCR Amendments – March 2014

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

*Appointment of Laboratory Manager

The Committee recommended approval of the appointment of Mr. Mark T. Lambert (ref. agenda item A.2).

*Appointment of Director, Western Operations and Maintenance

The Committee recommended approval of the appointment of Mr. Guy M. Foss (ref. agenda item A.3).

*Appointment of Manager, Maintenance, Operations

The Committee recommended approval of the appointment of Mr. Edward J. Regan (ref. agenda item A.4).

The meeting adjourned at 11:55 a.m.

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* Approved as recommended at March 12, 2014 Board of Directors meeting.

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 16, 2014
SUBJECT: April PCR Amendments

COMMITTEE: Personnel and Compensation ____ INFORMATION
__X__ VOTE

Robert Donnelly, Director of Human Resources
Joan C. Carroll, Manager Compensation
Preparer/Title

Rachel C. Madden
Director, Administration & Finance

RECOMMENDATION:

To approve the amendments to the Position Control Register (PCR) included in the attached chart[1].

DISCUSSION:

The PCR amendments included in this package reflect organizational changes aimed at improving the cost-effectiveness, structural soundness and staffing patterns within the Administration and Finance (A&F) Division and Operations Division.

These amendments include:

1. Title change for a vacant position in the Operations Division (M&O Specialist to Operations Specialist) to address staffing needs.
2. Salary adjustment to a filled position (Manager, Planning and Policy) in the Planning Department, Operations Division to recognize increased planning and policy responsibilities assumed by the position.
3. Addition of a new position in the SCADA Department, Operations Division (Manager, SCADA and Process Control) to address reorganization changes resulting from recent retirements in Operations management.
4. Addition of a new position in Management Information Systems (MIS), A&F Division, (Manager, Information Technology Security, Architecture & Engineering) to realign critical functions within the MIS department (as recommended in the 5-Year Strategic Plan).

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[1] The Position Control Register lists all regular positions in this fiscal year's Current Expense Budget. Any changes to positions during the year are proposed as amendments to the PCR. The Personnel and Compensation Committee of the Board of Directors must approve all PCR amendments. In addition, any amendments resulting in an upgrade of a position by more than one grade level or increasing a position's annual cost by $10,000 or more must be approved by the Board of Directors after review by the Personnel and Compensation Committee.

Two (2) amendments require approval by the Personnel and Compensation Committee. The remaining two (2) amendments require Board approval after review by the Personnel and Compensation Committee.

BUDGET/FISCAL IMPACT:

There are sufficient funds within the A&F and Operations Divisions' wages and salaries budgets to fund these PCR amendments. It is worthy to note that while the estimated new salaries for the new positions of Manager, SCADA and Process Control and Manager, IT Security, Architecture & Engineering are reflected in the attached chart, it is likely that one or both may be filled by a qualified internal candidate resulting in a budgetary impact lower that the estimated annual impact.

ATTACHMENTS:

New/Old Job Descriptions

MASSACHUSETTS WATER RESOURCES AUTHORITY
POSITION CONTROL REGISTER AMENDMENTS
FISCAL YEAR 2014

PCR AMENDMENTS REQUIRING PERSONNEL & COMPENSATION COMMITTEE APPROVAL - April 16, 2014

Number	Current PCR #	V/F	Type	Current Title	UN	GR	Amended Title	UN	GR	Current/Budget Salary	Estimated New Salary	Estimated Annual $ Impact	Reason For Amendment
P23	Operations EQ General 5470046	V	T,L	M&O Specialist	2	16	Operations Specialist	2	16	N/A	N/A - N/A	$0 - $0	To address staffing needs in Operations.
P24	Operations Planning 1510008	F	SA	Manager, Policy & Planning	NU	13	Manager, Policy & Planning	NU	13	$108,717	$112,717 - $112,717	$4,000 - $4,000	To recognize increased planning and policy responsibilities.
				PERSONNEL & COMP COMMITTEE TOTAL=	2						TOTAL	$4,000 - $4,000	

PCR AMENDMENTS REQUIRING BOARD APPROVAL-April 2014

Number	Current PCR #	V/F	Type	Current Title	UN	GR	Amended Title	UN	GR	Current/Budget Salary	Estimated New Salary	Estimated Annual $ Impact	Reason For Amendment
B15	Position to Be Added	N/A	N/A	N/A	N/A	N/A	Manager, IT Security, Architecture & Engineering	NU	14	$0	$102,778 - $123,978	$102,778 - $123,978	To realign critical functions within the MIS Department as recommended by MIS Strategic Plan.
B16	Position to Be Added	N/A	N/A	N/A	N/A	N/A	Manager SCADA & Process Control	NU	14	$0	$121,431 - $121,431	$121,431 - $121,431	To address reorganization changes resulting from recent retirements in Operations management.
				BOARD TOTAL =	2						**SUBTOTAL:**	$224,209 - $245,409	
				GRAND TOTAL =	4						**TOTAL ESTIMATED COSTS:**	$228,209 - $249,409	

Legend:
V = Vacant position, F = Filled position
T = Title change, L = Location change; transfer to another Cost Center, G = Grade Change, SA= Salary Adjustment, E = Elimination

OLD

MWRA

POSITION DESCRIPTION

POSITION: M & O Specialist

DIVISION: Operations

DEPARTMENT: Clinton, Deer Island, Field Operations

BASIC PURPOSE:

Performs inspections, overhauls, maintenance and repairs of various mechanical, electrical-mechanical, hydraulics systems & equipment at various facilities throughout the Authority. Performs assigned functions as part of a team.

SUPERVISION RECEIVED:

Works under the general supervision of a Unit Supervisor.

SUPERVISION EXERCISED:

Exercises supervision of entry-level staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Works from manufacturer's manuals and specifications, blueprints, schematics and verbal instructions to install, repair, troubleshoot, inspect, check & maintain mechanical, electrical-mechanical & hydraulic systems including HVAC mechanical components, which may include those carrying refrigerant. Performs electrically related activities specified by work order.

- Performs preventive and corrective maintenance on mechanical, electromechanical, hydraulic and pneumatic equipment according to vendor specifications.

- Performs various non-licensed maintenance, repair & installation tasks related to plant equipment and systems in the areas of instrumentation and control, plumbing, heating, ventilation and air conditioning and electrical.

- Fabricates devices and assemblies of sheet metal using powered and manual sheet metal forming tools.

- Welds, brazes and solders using gas and electric equipment common to trade.

- Operates equipment manually and through instrument panels and programmable logic control units as required in performance of maintenance tasks. Equipment may include, but will not be limited to, pumps, valves, gates, meters, gauges, controllers, motor control centers, level control devices, mixers, oxygen generation, chemical feed and odor control equipment.

- Follows established safety, operating, and emergency response procedures and policies established by MWRA.

- Operates motor vehicles, such as vans and pickup trucks, to pick up and deliver supplies and equipment to work sites.

- Installs retrofits/installation of new equipment related systems, modification and alignment of existing equipment to specifications.

- Supervises assigned Skilled Laborers, Building & Grounds Workers, and other maintenance personnel as needed.

- Performs, documents and reports results in the MAXIMO database of inspections and work performed.

- Performs work in compliance with the Operations Integrated Contingency Plan.

- Assists other trades in the performance of their work, as required or as assigned.

- Performs light maintenance independently or as part of a team. Light maintenance shall include but not limited to:

    - Operates forklift or other light equipment not requiring a special license.

    - Generates inspection lists and maintenance reporting through the Computerized Maintenance Management System

    - Inspects and troubleshoots various systems and equipment.

    - Installs and retrofits/new equipment related to plant systems.

- Modifies and/or aligns existing equipment to specifications.

- With proper safety training sets up ladders, staging and rigging and utilizes hoists, jacks, dollies, lifts, etc. for proper access to job and to remove and install equipment.

- Operates portable pumping, ventilation and other equipment necessary to support and accomplish assigned tasks.

- Greases and lubricates, replaces oil reserves, minor packing adjustments and opens hatches.

- Installs safety rails, changes light bulbs and replaces HVAC filters.

- Removes snow from immediate work area in order to perform tasks.

- Conducts routine testing, lockout/tagout, operation (startup/shutdown) and adjustment of process equipment.

- Performs necessary cleanup and housekeeping for work area and other light maintenance tasks.

SECONDARY DUTIES:

- Promotes and participates in the productivity improvement plan.

- Trains peers and subordinates as requested.

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) A high school education or GED; and

(B) Satisfactory completion of formal mechanic training program and a minimum of two (2) years related experience, and

(C) Satisfactory completion of training in accordance with the Productivity Improvement Program; or

(D) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Basic reading, writing, mathematical and oral communication skills.

(B) Thorough knowledge of the standard practices, materials, tools, occupational hazards and safety practices common to the trade.

(C) Skills in the operation of tools, instruments and equipment of the trades.

(D) Computer skills necessary to access and use the Maximo & Lawson Database.

(E) Trained in Confined Space Entry, CPR and First Aid, and must be capable of entering, setting-up, installing, disassembling confined space equipment and ability to work in a confined space.

(F) Ability to attain knowledge and work processes required to perform maintenance tasks required by Reliability Centered Maintenance or similar Maintenance Management Program.

SPECIAL REQUIREMENTS:

- Possession of a Valid Massachusetts Class D Drivers License.

- For DI and Clinton, a valid Grade II Wastewater Treatment Plant Operator's License.
  For Southboro, a valid Water Distribution II or Treatment II License.
  For Chelsea, a valid Grade II Wastewater Operator's License, Water Distribution II License, Water Treatment II License, or Collections Systems II License or the ability to obtain the correct license within one (1) year.

- Complete competency based training program related to **ESSENTIAL DUTIES AND RESPONSIBILITIES** as outlined above and successfully demonstrates required competencies.

TOOLS AND EQUIPMENT USED:

Motor vehicle, power and hand tools, hoist, mobile truck radio, 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 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 frequently is required to stoop, kneel, crouch or crawl. The employee is occasionally 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 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 regularly 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.

The job is hearing protection required and the noise level in the work environment is very loud in field settings and moderately loud at pumping stations.

November 2004

MWRA

POSITION DESCRIPTION

NEW

POSITION: Operations Specialist

PCR#:

DIVISION: Operations

DEPARTMENT:

BASIC PURPOSE:

Performs a variety of inspectional, equipment distribution and record keeping activities in support of the Operations Division. Assists the Program Coordinator.

SUPERVISION RECEIVED:

Works under the general supervision of the Safety Program Coordinator.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Conducts periodic inspection with contract vendors of life safety equipment in Authority facilities.
- Conducts periodic inspections of facility first aid stations.
- Conducts periodic inspections of facility fire extinguishers.
- Conducts inspections of facility emergency eyewash stations.
- Reports deficiencies for each fire extinguisher and emergency eye wash and station after each inspection and initiates work order or contacts vendor.

- Maintains records of inspection and maintenance on operations equipment.
- Maintains and updates materials data sheets at authority facilities.
- Assists in the distribution of procedural guidelines.
- Assist with the hand held gas monitor program.
- Assist in maintaining the equipment inventory.
- Accompany Automatic External Defibrillator (AED) Vendor on updates and preventative maintenance visits.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) A high school education or equivalent; and

(B Knowledge of equipment used in an industrial environment as normally acquired through two (2) 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.

(D) Demonstrated verbal and written communication skills.

SPECIAL REQUIREMENTS:

Valid Massachusetts Class D Drivers License

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 2014

OLD

MWRA

POSITION DESCRIPTION

POSITION: Policy and Planning Manager

PCR#:

DIVISION: Executive Office

DEPARTMENT: Office of Executive Director

BASIC PURPOSE:

Initiates and guides the efforts of the Executive Director, the Deputy Director and the Managing Director to formulate, plan and implement overall Authority policy objectives.

SUPERVISION RECEIVED:

Works under the general supervision of the Deputy Director.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Initiates and guides the efforts of the executive office to oversee strategic planning, policy development and project coordination efforts of program managers in all areas of the Authority.
- Performs research and report development related to special projects to agency-wide significance identified by the Deputy Director.
- Provides key support to the Executive Office and staff in all areas of the Authority on the development and substantive review of Board materials and presentation.
- Represents the Executive Office at internal and external meetings.
- Works with the Deputy Director and divisions to oversee staff coordination regarding inter-

agency environmental, regulatory and permitting issues of concern to the Executive Office.

- Works with the Deputy Director to coordinate and monitor the work of external advisory groups, particularly the MWRA Advisory Board. Represents the Deputy Director as needed at Water Supply Citizens Advisory Committee, and the Wastewater Citizens Advisory Committee meetings.

- Provides support and guidance on matters of Executive Office concern to program managers and line division leadership on projects of agency-wide significance because of their size, scale, sensitivity or complexity (e.g. CSOs, Water Hill Treatment Plant, Braintree/Weymouth relief facilities, outfall contingency planning).

- Facilitates communication coordination between line divisions and Executive Office on issues of cross-cutting interest/importance to multiple departments/divisions.

- Oversees the development of memoranda of understanding between the MWRA and communities impacted by major MWRA projects, including Winthrop and Quincy. Works with staff across the agency to ensure consistent understanding and application of MWRA policies and guidelines concerning project mitigation.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) A four (4) year degree in business management, organizational development, planning or related field. Masters degree in public policy or in public business administration preferred; and

(B) Understanding of strategic planning and business operations as acquired through five (5) to seven (7) years of related experience. Experience in the public sector is preferred; or

(C) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

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

(B) Ability to motivate others without direct reporting relationships is essential.

(C) Skill in the operation of the listed tools and equipment.

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.

August, 1999

NEW

MWRA

POSITION DESCRIPTION

POSITION: Manager, Policy and Planning

PCR#:

DIVISION: Operations

DEPARTMENT: Programs, Policies and Planning

BASIC PURPOSE:

Manages MWRA's system expansion policies and programs, coordinates environmental and regulatory permitting, and develops hydroelectric opportunities.

SUPERVISION RECEIVED:

Reports to the Deputy Chief Operating Officer, Programs, Policy and Planning.

SUPERVISION EXERCISED:

None.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Manages the agency's system expansion policies. Reply to requests from non-MWRA communities on water system expansion. Prepare Annual Report to the Board on System Expansion Requests and Prospective New Connections and prepared Single EIR/Donor Basin Documentation for future system expansion requests.

- Drafts New Water Supply Agreements for communities and Sewer Use Agreements for entities connection to MWRA system and manage emergency water supply requests per OP#5.

- Works with staff to oversee coordination regarding inter-agency environmental, regulatory and permitting issues including MA Wetlands Protection Act, Water Quality Certification, and Chapter 91.

- Supports Engineering in defining regulatory/permitting scopes for engineering projects and defining regulatory requirements.

- Represents the MWRA at external meetings as assigned.

- Acts as liaison with and secures DCR permits for MWRA projects.

- Identifies and develops opportunities for hydroelectric power generation. Works with Operations staff to evaluate feasibility, prepare FERC documents and RFPs, and pursue funding opportunities.

- Assists staff across the agency with documentation related to grant applications, reimbursement opportunities.

SECONDARY DUTIES:

- Attends quarterly meetings of the Water Supply Protection Trust and prepare minutes of the meetings for the Public Record.

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) A four (4) year degree in business management, organizational development, planning or related field. Masters degree in public policy or in public business administration preferred; and

(B) Understanding of strategic planning and business operations as acquired through five (5) to seven (7) years of related experience. Experience in the public sector is preferred; or

Necessary Knowledge, Skills and Abilities:

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

(B) Ability to motivate others without direct reporting relationships is essential.

(C) Skill in the operation of the listed tools and equipment.

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.

April 2014

NEW

MWRA

POSITION DESCRIPTION

POSITION: Manager, Information Technology Security, Architecture & Engineering

PCR#:

DIVISION: Administration & Finance

DEPARTMENT: Management Information Systems (MIS)

BASIC PURPOSE:

Plans, directs, and oversees the operations and budget of the Information Technology (IT) Security, Architecture & Engineering section. Plans and maintains work systems, procedures, and policies that enable and encourage the optimum performance of assigned staff and other IT resources. Oversees the development, implementation, deployment and operation of information systems and technology solutions to meet business and operational needs across the organization.

SUPERVISION RECEIVED:

Works under the general supervision of the Director of MIS

SUPERVISION EXERCISED:

Manages IT professional, technical and administrative employees assigned to the IT Security, Architecture & Engineering section.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Provides oversight and direction to the employees in the operating section in accordance with the organization's policies and procedures. Identifies needed improvements to work practices and works with Director, MIS and Labor Relations staff to bring about changes.

- Manages the preparation and maintenance of reports necessary to carry out the functions of the department. Prepares periodic reports for management, as necessary or requested, to track strategic goal accomplishment.

- Develops and implements an enterprise technical reference model. Responsible for the establishment of technical standards associated with information technology domains required to implement the Authority's systems.
- Responsible for information technology architecture and engineering activities. Ensures that technical blue prints for specific IT solutions are provided.

- Responsible for the development and maintenance of data architecture models, policies and standards that govern which data are collected, and how it is stored, arranged, integrated, and put to use in data systems and in organizations.

- Responsible for the development and maintenance of the policies, standards and procedures associated with the Information Security Program.

- Responsible for the development and maintenance of the IT Asset and Configuration Management Program including policies, standards and procedures to ensure that assets are identified, controlled, and managed.

- Oversees capacity management. Responsible to ensure that cost-justifiable system capacity is available to meet current and future business needs.

- Oversees technical problem management. Responsible for developing and managing the lifecycle of all problems from identification to removal.

- Estimates the financial impact of technical architecture alternatives as required. Manages expenses to section budget.

- Responsible for the development and management of the IT change management process to ensure that all changes are prioritized, planned, tested, implemented, documented, and reviewed in a controlled manner.

- Provides final recommendation on staffing levels. Works with Human Resources staff to recruit, interview, select, hire, and employ an appropriate number of employees.

- Mentors and develops staff, including overseeing new employee on-boarding and providing career development planning and opportunities. Encourages employees to take responsibility for their jobs and goals. Delegates responsibility as appropriate and expects accountability and regular feedback.

- Fosters a spirit of teamwork that allows for disagreement over ideas, conflict and conflict resolution, as well as the appreciation of diversity. Communicates organizational information through department meetings, one-on-one meetings, and appropriate email, and regular interpersonal communication.

- Leads employees using a performance management and development process that provides an overall context and framework to encourage employee contribution and includes goal setting, feedback, and performance development planning. Leads employees to meet the organization's expectations for productivity, quality, and goal accomplishment.

- Maintains employee work schedules including assignments, job rotation, training, vacations and approved leaves. Provides coverage for absenteeism, and overtime scheduling as needed.

- Assist in maintaining harmonious labor management relations through proper applications of collective bargaining agreement provisions and established personnel policies.

- Prepare for and hears Step-One grievances and pre-disciplinary hearings.

- Participate in collective bargaining negotiations.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) A four (4) year college degree program in a computer science, information technology or related field is required. Advance degree preferred; and

(B) Eight (8) to ten (10) years of experience in IT architecture, engineering and security of which 4 years must be in a supervisory or managerial capacity overseeing an IT multi-discipline functional section; or

(C) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

(A) Excellent analytical and technical skills.

(B) Excellent written and verbal communication skills. Exceptional interpersonal skills in areas such as teamwork, facilitation and negotiation.

(C) Excellent planning and organizational skills.

(D) Strong leadership skills.

(E) Knowledge of all components of a technical architecture; understanding of network architecture, service oriented architecture and object-oriented analysis and design.

(F) Skill with CSS, HTML, one or more JavaScript frameworks, and AJAX, Microsoft's .Net framework

SPECIAL REQUIREMENTS

ITIL Foundations Certification version 3 and at least two from the following list:

IPRC - ITIL Practitioner - Release and Control
MCSE - Microsoft Certified Solution Expert
MCSD - Microsoft Certified Solution Developer
CISM - Certified Information Security Manager
CISSP - Certified Information Systems Security Professional
VCP5-DCV: VMware Certified Professional 5 - Data Center Virtualization
Cisco CCIE - Cisco Certified Internetwork Expert
PMP - Project Management Professional
CCP - Citrix Certified Professional
Or the ability to obtain within one year.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

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

WORK ENVIRONMENT:

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

The noise level in the normal work environment is quiet.

April 2014

NEW

MWRA

POSITION DESCRIPTION

POSITION: Manager, SCADA and Process Control

PCR#:

DIVISION: Operations

DEPARTMENT: SCADA

BASIC PURPOSE:

The Manager, SCADA and Process Control oversees the development, maintenance, and implementation of SCADA and Process Control systems for assigned water and wastewater facilities. Responds to emergency situations 24 hours per day, seven days per week.

SUPERVISION RECEIVED:

Works under the general supervision of Director, Metropolitan Water Operations

SUPERVISION EXERCISED:

Exercises close supervision of assigned professional, engineering, technical, maintenance and operations staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Directs the further development, implementation, and optimization of SCADA and Process Control Standards for all water and wastewater facilities (excluding CWTP, DITP, and WDF).

- Develops and implements new SCADA and Process Control initiatives to ensure efficient, reliable and secure SCADA and Process Control operation of all assigned water and sewer facilities. Ensures that major initiatives and policy changes are properly communicated to all staff.

- Reports to senior staff on department initiatives and progress towards agency goals.
- Recommends, develops and implements policies and procedures for the SCADA and Process Control groups.
- Directs the use of MWRA databases and software to develop, improve, and produce reports to monitor and track water and wastewater facility performance.
- Develops and implements continued updates of control strategies to ensure clear documentation of automated facility controls and alarming functions.
- Directs the study and implementation of automated facility control modifications, to reduce energy consumption, maintenance requirements, and improve facility performance.
- Directs the development and implementation of cross departmental (operations, SCADA, maintenance, process control) work plans to implementation facility audits to ensure automation, alarming functions, and emergency safeguards are functioning as designed and documented.
- Directs the operation, modification and continued improvement of the communication infrastructure to support transmission of SCADA and security data throughout MWRA's system.
- Directs the documentation of all control panels and instrumentation installations with support from other departments.
- Directs in-house and contract instrumentation maintenance, modifications and upgrades.
- Oversees the review of capital project designs, and directs staff support of construction and new equipment startup with regard to group responsibilities to ensure adherence to standards and effective integration into overall SCADA system.
- Directs the maintenance and implementation of PLC an HMI programming to support operations needs.
- Oversees staff productivity monitoring and continual improvement through staff skills development, strategic planning, SOP improvements and research and implementation of technology advances.

- Identifies needed improvements to work practices and works with Operations Management and Labor Relations staff to bring about changes. Oversees personnel management.

- Manages unit budget. Assesses resources needed to effectively meet department objectives, prepares budgets requests and in depth justification, explains budget variances, and controls unit spending to ensure overall budget compliance.

- Reviews assigned employees' performance per MWRA procedures.

- Assists in maintaining harmonious labor management relations through proper applications of collective bargaining agreement provisions and established personnel policies.

- Prepares for and hears Step-One grievances and pre-disciplinary hearings.

- Participates in collective bargaining negotiations.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) A four (4) year Bachelor of Science degree in civil, electrical or mechanical engineering or related field. A masters degree preferred; and

(B) Ten (10) to twelve (12) years experience in engineering, construction management, operations and maintenance in a water or wastewater environment including at least four (4) years of experience in a supervisory position; and

(C) Five (5) to Seven (7) years experience in design, startup and managing water/wastewater SCADA and process control systems; and

(D) Knowledge of computer hardware and software such as SCADA and communications technology, routers and networking, cyber security, PLC control programming, HMI programming, databases, data presentation and analysis tools; and .

(E) Experience in working in a union environment desirable.

Necessary Knowledge, Skills and Abilities:

(A) Knowledge of engineering principles and practices.

(B) Ability to read and interpret plans and drawings.

(C) Proficient in the use of personal computers and associated MicroSoft Office software programs, including Word, Excel, and Access.

(D) Experience with the CMMS Software MAXIMO.

SPECIAL REQUIREMENTS:

A valid Massachusetts Class D Drivers License required.

Registered Professional Engineer license required.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

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

WORK ENVIRONMENT:

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

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

March 2014

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 16, 2014
SUBJECT: Appointment of Chief Engineer
Operations Division

COMMITTEE: Personnel & Compensation

____ INFORMATION
_X_ VOTE

John P. Vetere, Deputy Chief Operating Officer
Robert G. Donnelly, Director, Human Resources
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

As the Board is aware, there have been several recent retirements of key senior management positions that have resulted in a number of follow-up appointments approved by the Board at the February and March meetings. This staff summary is one of two additional appointments, resulting from the impending retirement of MWRA's Chief Engineer, Mr. Jae Kim, that will impact the Engineering and Construction Departments. With several important construction projects still underway, such as UV Disinfection at the John J. Carroll Water Treatment Plant and the Quabbin Disinfection Facility, as well as the Spot Pond Covered Storage Facility, continuity of management of the Engineering and Construction Departments warrants the immediate appointments of the Chief Engineer and the Director, Construction positions.

RECOMMENDATION:

To approve the appointment of Mr. Anandan Navanandan, Director, Construction (Non-Union, Grade 16) to the position of Chief Engineer in the Operations Division (Non-Union/Grade 16), at an annual salary of $138,000, commencing on a date to be determined by the Executive Director.

DISCUSSION:

The position of Chief Engineer will become vacant upon the retirement of the incumbent Chief Engineer, Mr. Jae Kim, in May 2014. The Chief Engineer reports directly to the Deputy Chief Operating Officer, Operations, Engineering and Construction in the Operations Division. The Chief Engineer oversees all engineering and construction functions and reports and provides support to the Deputy Chief Operating Officer, Operations, Engineering and Construction on key MWRA engineering and construction matters.

The Executive Director and the Chief Operating Officer interviewed the current Director, Construction, Mr. Anandan Navanandan, and recommend his appointment to the position of Chief Engineer.

Mr. Navanandan brings more than 35 years of broad water and wastewater engineering and construction experience with him into this key leadership position. He has held his current position as Director, Construction, since July 2008.

Mr. Navanandan began his career at MWRA in 1988 as a Project Engineer in the Water Engineering unit and since that time has been promoted into several positions of increasing responsibility (Construction Manager, Sr. Construction Manager, Construction Coordinator and Director, Construction). During his tenure at MWRA, Mr. Navanandan managed several large construction projects including the $160 million Secondary Treatment Facilities and the $580 million Residuals Treatment Facility on Deer Island as part of the Boston Harbor Project. He oversaw the successful completion of the $60 million, 20-mile Spot Pond Supply Mains Rehabilitation Project, a multi-contract project. Mr. Navanandan also has successfully overseen the completion of other major pipeline replacement/rehabilitation projects. He has assisted in the resolution of contract disputes, managing the change order process, scheduling and start-up coordination within MWRA, and has represented MWRA at public meetings on sensitive construction issues.

Mr. Navanandan also brings extensive private and public engineering experience and skills to this position. His engineering experience includes design of large water and wastewater projects (water transmission mains, pump stations, treatment facilities and reservoirs) for Camp Dresser & McKee, as well as for MWRA. Mr. Navanandan also has demonstrated extensive design skills in developing solutions to complex engineering problems that occur during construction.

Mr. Navanandan possesses a Master of Science degree in Civil Engineering from Tufts University and a Bachelor of Science degree in Civil Engineering from the National Council of Academic Awards in the United Kingdom. Mr. Navanandan is also a Registered Professional Engineer in Massachusetts.

Mr. Navanandan's current salary as Director, Construction (Non-Union/Grade 16) is $126,799. The recommended salary is $138,000. The compensation is commensurate with the increased responsibilities of the Chief Engineer position.

BUDGET/FISCAL IMPACT:

There are sufficient funds in the FY14 and Proposed FY15 Current Expense Budgets for this position.

ATTACHMENTS:

Resume of Mr. Anandan Navanandan
Position Description
Organization Chart

Ananadan Navananadan (Nava), P. E.
Reading, MA 01867

Education:

Master of Science, Environmental Engineering
Tufts University, Massachusetts, 1988

Bachelor of Science, Civil Engineering
National Council of Academic Awards, United Kingdom, 1978

Ordinary National Diploma, Electrical Engineering
Southeast London Technical College, United Kingdom, 1974

Professional Registration:

Registered Professional Engineer – Massachusetts License # 35483

Background Summary:

1988 – Present	Project Engineer to Director of Construction Massachusetts Water Resources Authority, Boston, MA
1986 - 1988	Research Assistant, National Council for Air and Stream Improvement Tufts University, Medford, MA
1982 – 1986	Design Engineer/ Resident Engineer Camp Dresser & McKee, Singapore
1979 – 1982	Scheduling/ Site Engineer M. J. Gleeson Contractors, United Kingdom
1978 – 1979	Engineer John Taylor and Sons, Iran

Professional Affiliations:

American Society of Civil Engineers
Boston Society of Civil Engineers

Summary of Experience:

Thirty-Five years experience in a wide variety of engineering projects for water and wastewater supply development, treatment, and distribution. Experience also includes managing construction of multi-story buildings, construction and rehabilitation of more than 40 miles of various diameter water mains, construction of $160 million secondary treatment facilities, $27 million in ancillary design modifications and $44 million in final landscaping as part of the $3.8 billion Boston Harbor Project. Managed the activities of Boston Harbor Project site managers, construction coordinators, resident and field engineers and inspectors. Responsible for the construction and start-up of multi-million dollar facilities, including $580 million Residual Treatment Plants. Furthermore, for the past five years managed the construction of the North Dorchester Bay, CSO Facilities, 17 miles of the Hultman Aqueduct Rehabilitation, 2.0 miles of 48-inch micro-tunneling and John J. Carroll Water Treatment Plant UV with an in-house staff of 33.

Specific Project Experience:

1992 – Present: MWRA Construction Manager/Sr. Construction Manager/Assistant Director of Construction/Director of Construction

Responsibilities include: Evaluation of alternative routing of major water main design projects, coordination with field personnel to address their operational needs during design and construction, as well as with cities and towns to avoid unnecessary disruptions, MWRA representation at public meetings, interface with technical, legal and procurement staff, union and Board of Directors. Participated in the consultant selection process, constructability reviews, evaluations of value engineering alternatives, and resolution of contract disputes and claims, management of safety audits, recommended certification of completion, release of retainage and assisted in managing the change order system, scheduling and start-up of various project components (specifically the Deer Island Secondary Treatment Facility) and Engineering Services During Construction.

1988 - 1991: MWRA Water Engineering, Project Engineer
Responsibilities included:

- Development of study options for Chicopee Valley Aqueduct improvements including construction of booster pump station, additional storage capacity and alternative supply source.
- Preparation of Requests for Qualifications and Proposals for various contracts; participation in the consultant selection process and contract negotiations.
- Rehabilitation of six water pump stations (2-70 mgd) and associated water mains. Evaluation of water supply demand data, assessment of capability of each pump station to deliver water; hydraulic analysis of different pressure zones using computer models; and preparation of environmental documents to comply with the Massachusetts Environmental Policy Act, Massachusetts Wetlands Protection Act, and the Massachusetts Historical Commission requirements.

1986 -1988 National Council of Air and Stream Improvement/Tufts University, Massachusetts Research Assistant

Developed an empirical model to predict the suspended solids concentration of the overflow of a secondary clarifier as a function of overflow, mixed liquor suspended solids, food to microorganism ratio, temperature, dissolved oxygen concentration and sludge blanket depth.

1982 -1986 Camp Dresser and McKee, Singapore
Sungei Seletar and Bedok Water Scheme for Public Utility Board of Singapore
Design Engineer/Resident Engineer

Assisted in preparation of contract documents and design. Project consisted of a 3,00- foot dam with bentonite slurry wall , 22 miles of raw water transmission line including two large pump stations, 30-mgd water treatment plant having pre- and post-ozonization facilities, granular activated filter beds and a filter press facility for sludge dewatering , seven large water collection ponds and 250 and 215 acres of reservoirs. Work included route selection, hydraulic structure design, and detail drawing and bill of quantities.

As Resident Engineer, responsible for the entire construction of a 22-mile transmission line consisting of 72-inch diameter to 20-inch diameter steel and ductile iron pipe. Laying of raw

water main was carried out using open cut and cover, tunneling, and jacking methods varying from 4 feet to 32 feet.

As Assistant Resident Engineer, supervised all concrete works, installation of mechanical and electrical equipment, and endurance and performance testing of all mechanical equipment including star-up of a 30 mgd water treatment plant.

1979 -1982 **M.J. Gleeson Contractors, United Kingdom**
Scheduling/Field Engineer

Responsible for long- and short-term programming using critical path analysis. EDM surveys, major equipment allocations, false work design, material procurement, and regular progress review meetings with design and management teams.

References Available at Request

MWRA
POSITION DESCRIPTION

POSITION: Chief Engineer

PCR#: 55250113

DIVISION: Operations

DEPARTMENT:

BASIC PURPOSE:

Directs the engineering and construction functions of the Authority.

SUPERVISION RECEIVED:

Reports directly to and acts under the supervision of the Deputy Chief Operating Officer, Operations and Engineering.

SUPERVISION EXERCISED:

Exercises direct supervision of the Engineering and Construction functions through the Director of Construction, Assistant Director - Wastewater Engineering and Assistant Director – Water Engineering.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Acts as Authority's Chief Engineer.
- Works with the Deputy Chief Operating Officer, Operations, Engineering & Construction, to oversee the engineering, construction and start-up of water supply and wastewater facilities, ensure adequate allocation of staff and financial resources for successful implementation of capital and maintenance project delivery and manage the engineering and construction transition from capital delivery to operations start-up and maintenance.
- Supervises the project support functions (budget/schedule management, environmental compliance, safety, grants management support and progress reporting) for the Operations Division's capital project delivery Program.
- Responsible for the efficient and cost-effective execution of capital investment programs and projects to maintain and improve MWRA facilities. Working with Procurement and Law, propose methods to streamline the Authority's capital delivery system.
- Manages the responsibility for stewardship of MWRA physical and plant assets.

- Assumes the responsibility for providing safe MWRA operations for the MWRA workforce, its customers and the general public and provides input into security and emergency preparedness and response regarding the system.

- Manages the impacts of MWRA construction on community water/sewer systems, through coordination with community system managers and the Advisory Board Operations Committee.

- Works collegially with and ensures coordination with other MWRA divisions and departments and advances the goals, objectives and strategies of the MWRA business plan.

- Assists in implementing the goals and commitments of MWRA in the areas of customer service, diversity and affirmative action, economy and efficiency, health and safety, emergency response and security, and integrity and public trust.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) A bachelor's degree in sanitary, civil or mechanical engineering or associated field. Advanced degree or other significant post-graduate educational experience in an engineering discipline is preferred; and

(B) Eight (8) to ten (10) years demonstrated success in progressively responsible management positions in operations, maintenance, engineering design, engineering project management and/or construction functions relating to water/wastewater service delivery and major water/wastewater facilities; water system experience is preferred;

(C) Other combinations of educational and professional credentials and senior operations-management-engineering-construction experience in the water/wastewater sector will also be considered; or

Necessary Knowledge, Skills and Abilities:

(A) Knowledge of principles and practices of engineering.

(B) Expert familiarity and management competence in the operation, maintenance and construction of water and wastewater facilities and systems.

(C) Ability to provide technical leadership to subordinate employees in the areas under supervision and inspire confidence in customers and the general public.

(D) Excellent interpersonal, oral and written communications skills required.

SPECIAL REQUIREMENTS:

Registered Professional Engineer license required.

TOOLS AND EQUIPMENT USED:

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

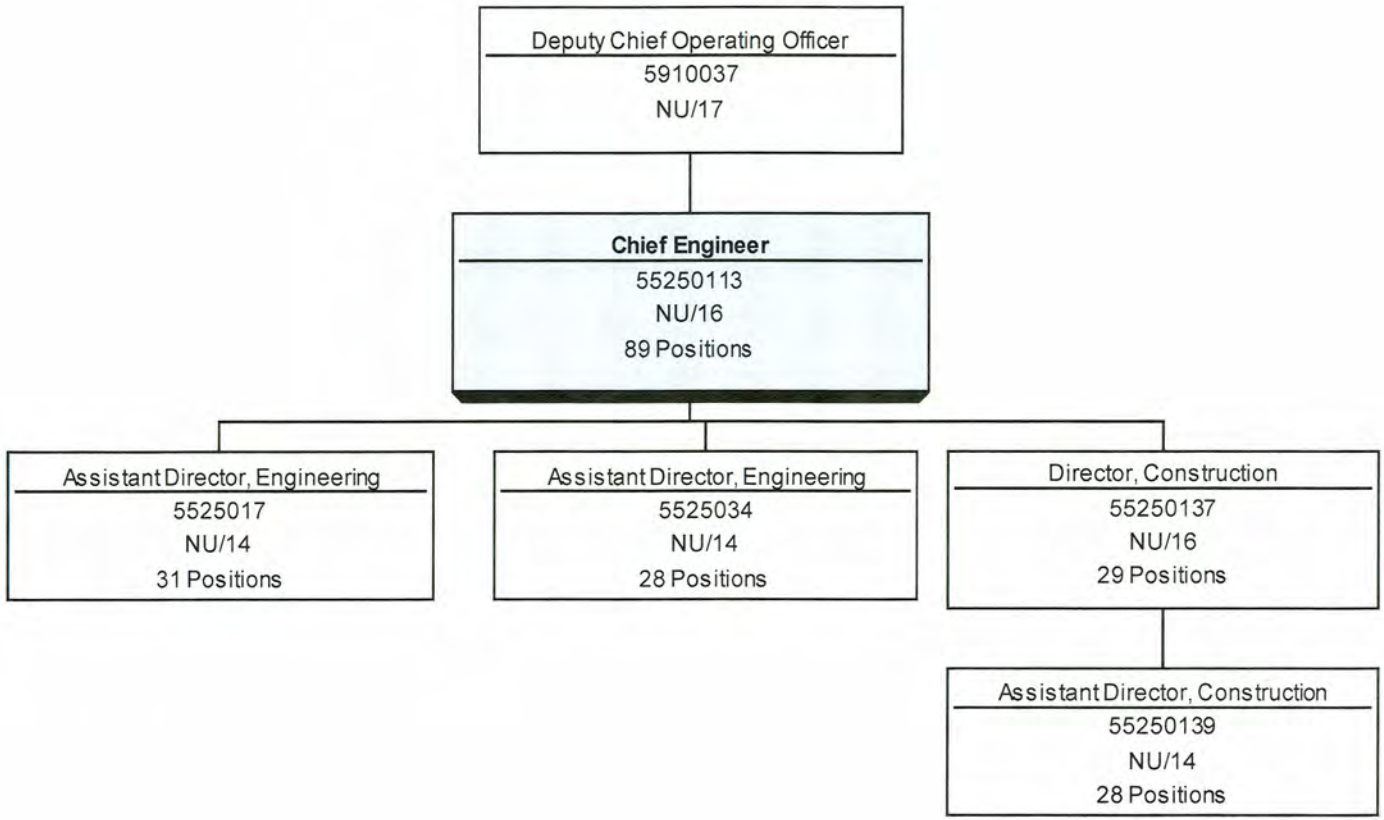
There are no requirements that weight be lifted or force be exerted in the performance of this job. Specific vision abilities required by this job include close vision, and the ability to adjust focus.

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.

Engineering & Construction
April 2014



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 16, 2014
SUBJECT: Appointment of Director, Construction Operations Division

COMMITTEE: Personnel & Compensation

____ INFORMATION
__X__ VOTE

John P. Vetere, Deputy Chief Operating Officer
Robert G. Donnelly, Director, Human Resources
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

As the Board is aware, there have been several recent retirements of key senior management positions that have resulted in a number of follow-up appointments approved by the Board at the February and March meetings. This staff summary is one of two additional appointments, resulting from the impending retirement of MWRA's Chief Engineer, Mr. Jae Kim, that will impact the Engineering and Construction Departments. With several important construction projects still underway, such as UV Disinfection at the John J. Carroll Water Treatment Plant and the Quabbin Disinfection Facility, as well as the Spot Pond Covered Storage Facility, continuity of management of the Engineering and Construction Departments warrants the immediate appointments of the Chief Engineer and the Director, Construction positions.

RECOMMENDATION:

To approve the appointment of Ms. Corinne Barrett, Assistant Director, Construction (Non-Union, Grade 14) to the position of Director, Construction, (Non-Union, Grade 16) in the Operations Division at the recommended salary of $131,145, effective on a date to be determined by the Executive Director.

DISCUSSION:

The Director, Construction position, will become vacant contingent upon the anticipated appointment of the current Director, Construction, Mr. Anandan Navanandan, to the position of Chief Engineer. The Director, Construction position reports to the Chief Engineer and manages an in-house staff of 29, as well as numerous construction and consultant contracts. The position is responsible for managing the coordination and control of all aspects of MWRA's capital construction projects, including: providing overall oversight and management of construction contracts and professional construction management services; reviewing and recommending approval of change orders; and negotiating settlement of construction claims.

The Executive Director and the Chief Operating Officer interviewed Ms. Corinne Barrett for the position of Director, Construction, and recommend her for position. Ms. Barrett currently holds the position of Assistant Director, Construction (Non-Union, grade 14) in the Construction Unit, a position she has held since July 2008. She began her career with the former MDC in 1984 as a Senior Engineering Aide and over time has been promoted to a number of progressively more responsible positions, including Jr. Civil Engineer, Sr. Civil Engineer, Project Manager, and Construction Coordinator.

In her capacity as Assistant Director, Construction, Ms. Barrett has demonstrated exemplary management skills and extensive knowledge of the construction industry, and she is highly respected by her colleagues and supervisors, as well as the construction contractors she regularly interacts with. She has overseen the successful completion of several multi-million-dollar water and wastewater construction projects, including the Cummingsville Branch Replacement Sewer project, two Southern Spine Distribution Main projects and the Blue Hills Covered Storage Design/Build project.

Ms. Barrett possesses two degrees; an Associate's Degree in Civil Engineering from Wentworth Institute of Technology and an Associate's Degree in General Science from Mount Ida College.

Ms. Barrett's current salary as Assistant Director, Construction (Non-Union/Grade 14) is $121,431. The recommended salary is $131,145. The recommended compensation is commensurate with the level and responsibilities of the Director, Construction position.

BUDGET/FISCAL IMPACT:

There are sufficient funds in the FY14 and Proposed FY15 Current Expense Budgets for this position.

ATTACHMENTS:

Resume of Corinne Barrett
Position Description
Organization Chart

CORINNE M. BARRETT

Arlington, MA 02474

EXPERIENCE

MASSACHUSETTS WATER RESOURCES AUTHORITY

2008- Present — **Assistant Director/Construction**

- Directs the development and administration of capital improvement projects within the department. Develops funding plans for projects; assists in the preparation of and oversees the department's capital improvement budget.
- Assists in the evaluation of solutions to engineering/construction problems and develops environmentally sound solutions.
- Oversees the work of staff and consulting engineers to insure adherence to budgets, schedules, quality of outputs and compliance with scope of services and contract terms.
- Oversees coordination of projects and engineering functions with appropriate MWRA Divisions and sees that projects comply with MWRA policies and procedures.
- Maintains and updates construction management standardized procedures.
- Manages all construction contracts to upgrade and rehabilitate the waterworks and wastewater systems. Ensures contractor compliance with contract documents.
- Oversees and reviews construction pay estimates, change orders and staff summaries.
- Reviews construction documents to ensure constructability.
- Participates in preparing for collective bargaining and Step One Grievances.
- Develops and oversees current expense budget for the section and develops work plan and staff assignments in the department.
- Oversees and coordinates staffing with project workload to assure consistency of project execution and quality, and adherence to Massachusetts Water Resources Authority's policy and procedures.

2003-2008 — **Construction Coordinator**

- Managed all phases of construction from award to contract closeout including processing construction pay estimates, change orders, and staff summaries including complex multimillion dollar capital improvement water and wastewater construction projects.
- Ensured contractors comply with contract documents.

- Managed staff and consulting engineers to insure adherence to budgets, schedules, quality of work, and compliance with scope of services and contract terms.
- Coordinated staffing with project workload.
- Evaluated solutions to engineering/construction problems and developed environmentally sound solutions.
- Assisted in the preparation of the department's capital improvement budget. Coordinated project and engineering functions with appropriate MWRA Divisions to ensure projects comply with MWRA policies and procedures.

2000-2003 **Program Manager**

- Managed several water and wastewater construction projects.
- Processed construction contracts including bid-ability/constructability reviews, preconstruction conferences, all phases of construction, construction pay estimates, project scheduling, contract closeouts, and supervision of staff.
- Reviewed and processed consultant contracts and amendments.

1994-2000 **Project Manager**

- Managed several water and wastewater construction projects.
- Reviewed and processed change orders, claims, and final construction acceptance documentation.
- Acted as a liaison between Construction Unit and other Authority departments. Performed quality assurance/quality control reviews on various contracts under construction.
- Supervised all levels of construction field staff.

1989-1994 **Senior Civil Engineer**

- Managed wastewater construction projects.
- Provided supervision of general contractors and their subcontractors, including maintaining daily, weekly, and monthly reports; preparing and reviewing pay requests and claims; making decisions on changed conditions encountered in the field; and planning sequence of work with contractors.

1988-1989 **Assistant Civil Engineer**

- Managed wastewater construction projects.
- Supervised general contractors and their subcontractors, and maintenance of all records associated with a construction project.

1985-1988 **Junior Civil Engineer**

- Managed wastewater construction projects.
- Provided supervision of the general contractor and their subcontractors.

METROPOLITAN DISTRICT COMMISSION

1984-1985 Senior Engineering Aide

- Managed the review of environmental notification forms related to wastewater construction projects, updating of project planning manuals and schedules, and preparing various schedules and charts for capital appropriations.

EDUCATION

1999 **Simmons Graduate School of Management**
Leadership Program for Women

1985 **Wentworth Institute of Technology**
Associates Degree in Civil Engineering Technology

1982 **Mount Ida College**
Associates Degree in General Sciences

CERTIFICATIONS

- 40 Hour Hazardous Waste Operations and Emergency Response
- Confined Space Entry
- Incident Investigation Training
- NACE Coating and Lining of Concrete
- AWWA Excavation Competent Person
- Project Management Certificate of Award
- MWRA's Safe Driving Awareness
- CPR/First Aide

MWRA
POSITION DESCRIPTION

POSITION: Director, Construction

PCR#: **55250137**

DIVISION: Operations

DEPARTMENT: Construction

BASIC PURPOSE:

Manages the Construction Unit which controls and coordinates all Water and Wastewater construction projects of the MWRA Capital Improvement Program.

SUPERVISION RECEIVED:

Works under the supervision of the Deputy Chief Operations Office.

SUPERVISION EXERCISED:

Supervises a professional staff of in house Construction Managers, Construction Coordinators, Field and Resident engineers and inspectors. Also through staff, supervises the activity of consultant staff assigned to construction projects as well as the activity of Construction management firms assigned to large Capital Programs.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Directs the management of the Construction Unit, assigning responsibilities and reviewing performance of staff.
- Evaluates, identifies and establishes appropriate construction management structures for all projects ranging in size from $1 million through $400 million and with varying complexity and inter-relationships.
- Develops and implements MWRA policies and procedures as they relate to the construction of water and wastewater.
- Directs review of designs, construction schedules and support for construct ability of assigned work.
- Provides and controls construction input into bid process.

- Provides overall oversight and management of professional construction management services. Oversees the work of all consultants and contractors to insure adherence to budgets, schedules, quality and compliance with contract terms.

- Recommends approval of construction contract awards, reviews and approves change orders, claims and contract close outs. Review recommendations for progress payments, substantial completion, and final acceptance of work.

- Provides oversight, guidance and control to consultant teams in managing the construction of assigned projects, including quality of work, schedule, cost and safety. Evaluate performance of CMs as part of contract administration duties.

- Manages contracts and Engineering Services during Construction Program reviews and participates in the preparation of annual and supplementary project budgets; provides management and oversight to actual cost and schedule performance and approves project requests.

- Develops annual operating budgets for unit and manages to insure compliance with budget.

SECONDARY DUTIES:

- Participates in collective bargaining and other grievance issues as may be required.

- Participate in meetings and negotiations for establishment of mitigation agreements with neighborhood groups, government officials, regulatory agency staff, and other outside parties.

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

(A) A four (4) year college program in engineering or related field; and

(B) Knowledge of management of major water or wastewater facilities construction such as tunnels, water treatment plants and other large concrete construction as acquired by at least twelve years of construction experience of which six (6) must be in a senior supervisory position; and

(C) Experience in construction project dispute resolution procedures such as partnering, Disputes Resolution Boards and other alternative dispute resolution procedures; or

(D) Any equivalent combination of education or experience.

Necessary Knowledge, Skills and Abilities:

(A) Excellent oral and written communication skills.

(B) Demonstrable experience of successfully working with communities to minimize the impact of construction projects.

SPECIAL REQUIREMENTS:

A valid Massachusetts Registered Professional Engineer.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

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

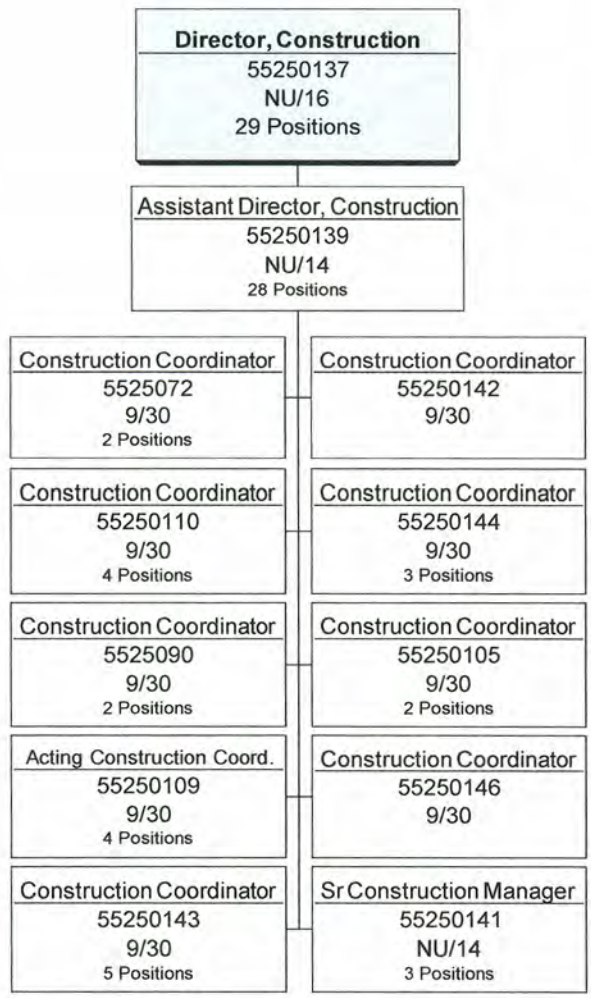
While performing the duties of this job, the employees frequently works in outside weather conditions. The employee occasionally works near moving mechanical parts, and is occasionally exposed to wet and/or humid conditions and vibration. The employee occasionally works in high precarious places and 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 office settings.

Engineering & Construction

Construction

April 2014



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 16, 2014
SUBJECT: Appointment of Manager, Process Control Operations Division

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COMMITTEE: Personnel & Compensation

___ INFORMATION
_X_ VOTE

David F. Duest, Director, Deer Island WWTP
Robert G. Donnelly, Director, Human Resources
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the appointment of Mr. Ethan Wenger, P.E., (Unit 9, Grade 25) to the position of Manager, Process Control (Non-Union, Grade 14), at an annual salary of $109,100, to be effective April 19, 2014.

DISCUSSION:

The recent promotion of Mr. David F. Duest to Director, Deer Island Wastewater Treatment Plant after the retirement of Mr. Daniel O'Brien, created a vacancy in the position of Manager, Process Control. At the February meeting, staff informed the Board of the recommended plan to backfill the vacated position.

The Manager, Process Control position reports to the Deputy Director, Deer Island Wastewater Treatment Plant. This position is responsible for Deer Island's permit compliance, the operation and maintenance of the Process Information and Control System (PICS – which is the subject of a separate staff summary at this meeting), overseeing the process monitoring program and all operational reporting for Deer Island, and leads all of Deer Island's process optimization efforts. The Manager, Process Control manages 16 staff who are split into three main functional groups - PICS, Process Monitoring, and Process Optimization.

Selection Process

The position was posted internally and six candidates applied. The Deer Island Director, Deputy Director, and MWRA's Special Assistant for Affirmative Action interviewed all six internal candidates. Upon completion of those interviews, Mr. Ethan Wenger was identified as the ideal candidate for the Manager, Process Control position.

Mr. Wenger joined the MWRA in 1996 and is very familiar with process control at Deer Island. He currently holds the position of Project Manager, Process Control (Unit 9, Grade 25). Mr. Wenger now has 18 years experience dealing with environmental issues, and more than 10 years experience in process control with an emphasis on biological treatment, and the same length of time supervising a multi-disciplinary technical team. In his current position, Mr. Wenger serves as the lead technical contact to Operations for Odor Control, Cryogenic Oxygen Generation, Secondary Process Operations, and Centrifuge Thickening Process areas. He has led a number of process optimization efforts that have helped reduce the plant's energy consumption by more than nine million kWh annually.

Mr. Wenger oversees a number of Deer Island's service contracts including carbon bed servicing, specialty maintenance on the Cryogenic Plant, and replacement of wet scrubber media. Mr. Wenger is an expert in energy and secondary aeration treatment and has made several presentations while at Deer Island on papers that he has written ("Energy Optimization of Large Plant Aeration Process" and "Aeration System Optimization/Dissolved Oxygen Study at the Deer Island Treatment Plant").

Prior to his work in process control, Mr. Wenger worked in MWRA's Central Laboratory where he held several positions of increasing responsibility, culminating in the position of Laboratory Supervisor II overseeing Deer Island's sampling program and the Central Laboratory's sample management group.

Mr. Wenger holds a Bachelor of Science Degree in Environmental Science from the Massachusetts Institute of Technology (MIT) and a Master of Science Degree in Environmental Engineering from the University of Massachusetts at Lowell. Mr. Wenger is a licensed Professional Engineer in the state of Massachusetts and he holds a Grade 7 Full-Active Wastewater Operator's License from the Commonwealth of Massachusetts' Department of Environmental Protection.

Mr. Wenger's current salary as Project Manager, Process Control (Unit 9, Grade 25) is $92,567; the recommended salary is $109,100. The recommended compensation is commensurate with this position and its accompanying critical responsibilities. Staff plan to backfill Mr. Wenger's former position at a later date.

BUDGET/FISCAL IMPACT:

There are sufficient funds for this position in the FY14 and Proposed FY15 Current Expense Budgets.

ATTACHMENTS:

Resume of Ethan Wenger
Position Description
Organization Chart

Ethan Wenger

Experience

2004-2014 MWRA Winthrop, MA

Project Manager, Process Control

- Led the energy efficiency improvement effort in the Deer Island Treatment Plant Secondary Process. This led directly to savings of over 9,000,000 kW-hrs per year or approximately $800,000 per year.
- Optimized chemical use in the odor control processes by approximately 50% between 2006 and 2014 by improving wet scrubber operation, resulting in savings of over 400,000 gallons of sodium hypochlorite per year and over 50,000 gallons of caustic soda per year, totaling in savings of $250,000 per year.
- Prepared and managed the service contract for recharging carbon beds on Deer Island, valued at $900,000 for 3 years
- Co-managed the Oxygen Services Contract, valued at $1,500,000 for 3 years
- Operated the oxygen generation facility, the odor control facility, and the centrifuge facility during complex conditions, such as start-up
- Studied trends and implemented new operating procedures as needed for the oxygen facility, the centrifuge facility, and the odor control facility
- Gave technical advice to operations, maintenance, and safety department as needed for the safe operation and maintenance of the treatment facility
- Studied and optimized various processes throughout the treatment plant
- Designed and directed nitrogen purges for the digester gas system, consisting of the feeding of 200,000 cubic feet of nitrogen through the ENVIREX DYSTOR membrane cover of the digested sludge and gas storage tank to allow the installation of new valves

1996-2004 MWRA Winthrop, MA

Laboratory Supervisor II, Central Laboratory

- Managed 4-7 temporary and full-time employees. Recommended employees for hire and termination as needed
- Responsible for all DITP compliance sample collection and management of all samples taken at the MWRA, including chain of custody and field sampling/testing quality control.

- Used NPDES permit limits and regulatory requirements to write procedures for sampling and analysis
- Managed team budget and procurement for sampling equipment and containers
- Implemented the new Laboratory Information Management System and trained staff on it use to allow electronic chain of custody of over 25,000 samples per year

Education

1988-1992 MIT Cambridge, MA

Bachelor of Science in Environmental Science Engineering

2005-2009 University of Massachusetts Lowell, MA

Master of Science in Environmental Engineering

Certifications

Grade 6 Full Wastewater Operator's License # 9909 (Grade 7 application submitted, awaiting approval at March board)

Massachusetts P.E. Environmental Engineering #50268

Presentations

Presented "Energy Optimization of Large Plant Aeration Process" at the NEWEA Joint energy and Plant Operations Seminar on May 16, 2012.

Presented "Aeration System Optimization/Dissolved Oxygen Study at the Deer Island Treatment Plant" at the Boston NEWEA Conference on January 29, 2014.

MWRA
POSITION DESCRIPTION

POSITION: Manager, Process Control

PCR#: **2938514**

DIVISION: Operations

DEPARTMENT: Process Control, Deer Island

BASIC PURPOSE:

Manages and directs the Process Control department, to include the process engineering, process monitoring/data management, PICS support functions and all air and NPDES reporting. Responsible for providing process support, optimization, and commissioning services to DITP Operations staff.

SUPERVISION RECEIVED:

This position reports to the Deputy Director, Deer Island Treatment Plant.

SUPERVISION EXERCISED:

Exercises close supervision of Program Managers, and some Project Manager functions within the Process Control Department. Has overall responsibility for all Process Control Staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Directs the development, management, and implementation of plant-wide and individual area performance and energy optimization programs. Coordinates these activities with other off-island management staff.

- Manages the evaluation, design, and implementation of control strategy and/or process operating strategy modifications. Directs the detailed design of new processes in response to plant operational needs and/or regulatory changes.

- Directs the development and management of the Process Control current expense budget (CEB). Provides technical assistance/input into the development and tracking of the Operations Division CEB on process consumables (e.g., chemicals, electricity, etc.).

- Develops the facility and process-related CIP project list working in direct cooperation with the Deputy Directors of Maintenance and Operations as well as the Plant Engineer.

- Guides Operations staff in the identification and resolution of plant operating deficiencies. Develops plant corrective action plans and their communication to CNY and external regulatory authorities.

- Serves as the primary technical support for all plant operational issues, including process emergencies. Provides technical support for off-island departments and for special projects as defined by Senior Management.

- Directs Deer Island turnover and system start-up activities. Identifies, develops and manages the implementation of necessary corrective actions to improve performance of newly turned over plant areas.

- Serves as the primary Deer Island technical contact to consultants and outside contractors in the review and approval of process/operations-related deliverables.

- Acts as the lead Deer Island technical liaison to CNY on such Authority-wide issues as energy management and operating cost containment.

- Oversees the review and approval of area-specific RCM implementation plans. Acts as the Deer Island Process Control member of the FAMP steering committee.

- Works with department heads and staff to ensure effective communication and work flow practices between Operations, Maintenance, and the O&M support group. Identifies issues/problems and creates action plans for resolution.

- Ensures that the training needs for the Process Engineering, PICS, and Process Monitoring groups are identified and met.

SECONDARY DUTIES:

- Provides training, as needed, to assigned staff. Acts as process trainer to Operations and other plant staff on process control, experimental design/analysis and other wastewater engineering principles and applications.

- Provides on-call emergency technical support to Plant Operations staff and provides routine assistance to support group's objectives.

- Assists in maintaining harmonious relations with plant staff. Responsible for the correct application of collective bargaining agreement provisions and established personnel policies. Participates in the preparing for collective bargaining, formulating collective bargaining proposals, and hears Step One Grievances.

- Evaluates assigned employee performance according to MWRA procedures.

- Performs other related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) A Master of Science or Ph.D. degree in environmental, civil or chemical engineering; and

(B) Ten (10) years of experience in the areas of wastewater process control and design with an emphasis on biological treatment unit operations and the full-scale evaluation and troubleshooting of processes typical within the wastewater treatment field; and

(C) Ten (10) years of experience in a technical environment that includes managing various multi-disciplined technical teams and the successful management of operating and capital budgets; or

(D) Any equivalent combination of education and experience.

Necessary Knowledge, Skills, and Abilities:

(A) Proven expertise in the selection, specification, and commissioning of large-scale process equipment including a solid understanding of equipment operating characteristics and their relationship to process performance variables.

(B) Proven expertise in the areas of experimental design, data analysis, and statistical process control.

(C) Knowledge of wastewater unit operation design and operation, process control theory, practices and principles.

(D) Knowledge of equipment energy demand principles, energy production systems and their impacts on plant performance and budgets.

(E) Working knowledge of wastewater treatment regulatory and permitting procedures to include both routine and non-routine reporting requirements.

(F) Outstanding computer skills to include proficiency with MS Office software package as well as MS Project and statistical data analysis packages.

(G) Demonstrated organizational, written, and verbal communication skills.

SPECIAL REQUIREMENTS:

Grade 6 Massachusetts Wastewater Treatment Plant Operators license.

TOOLS AND EQUIPMENT USED:

Office machines as normally associated with the use of multiple-line telephone, personal computer, including word processing and other software, printer, 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 and talk or hear, to use hands to feel, handle or operate objects, including office equipment or controls and reach with hands and arms. The employee is frequently required to stand and walk; an occasionally climb or balance; stoop, kneel, crouch, etc.

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

WORK ENVIRONMENT:

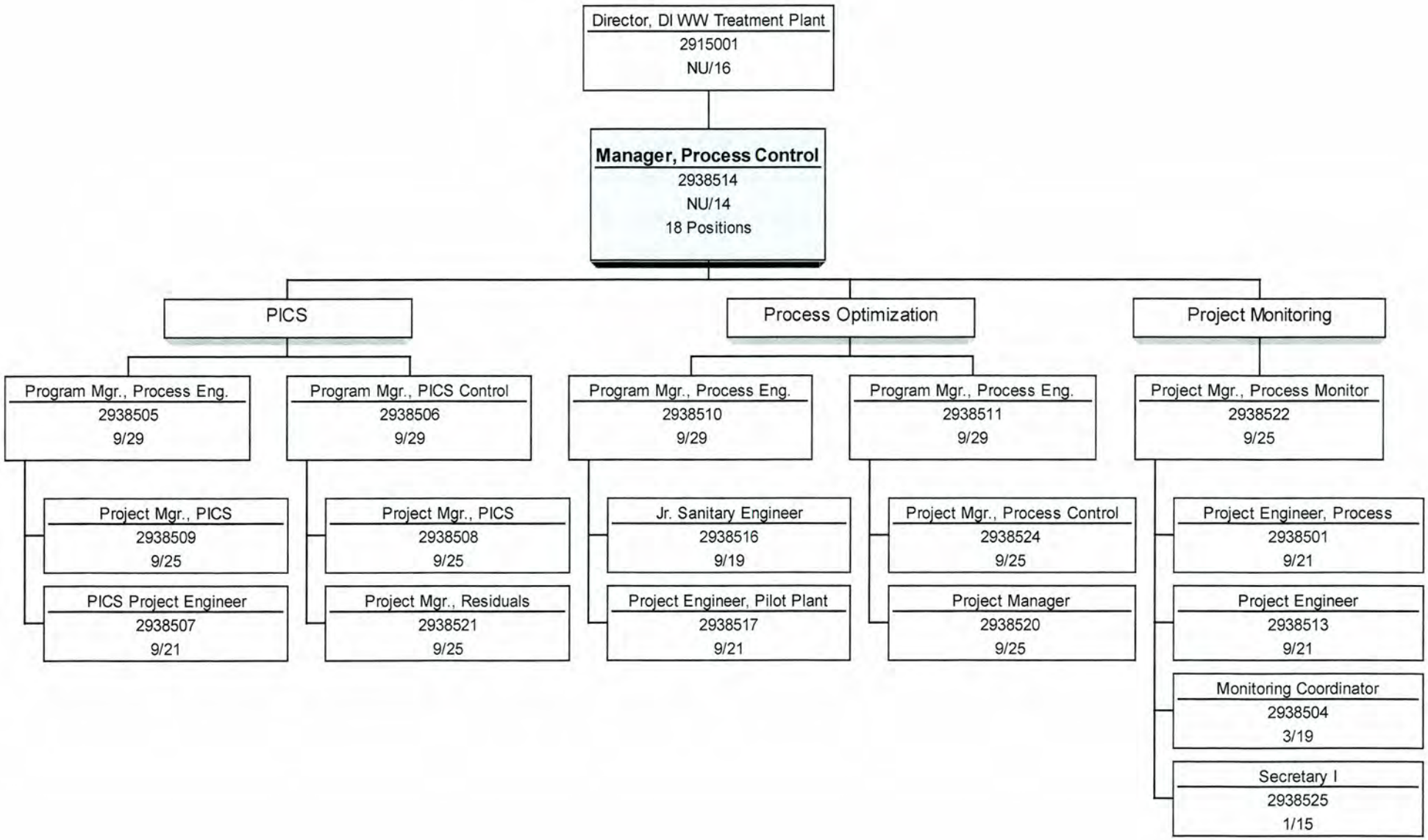
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee occasionally works in outside weather conditions. The employee occasionally works near moving mechanical parts and occasionally is 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 office settings.

Deer Island Process Control

April 2014



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 16, 2014
SUBJECT: Appointment of Manager, SCADA and Process Control Operations Division

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COMMITTEE: Personnel & Compensation

____ INFORMATION
__X__ VOTE

Robert G. Donnelly, Director, Human Resources
Michael J. Hornbrook, Chief Operating Officer
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the appointment of Mr. Brian L. Kubaska (Unit 9, Grade 30) to the position of Manager, SCADA and Process Control (Non-Union, Grade 14), at an annual salary of $121,431, commencing on a date to be determined by the Executive Director.

DISCUSSION:

The Manager, SCADA and Process Control, reports to the Director, Metropolitan Operations. This new position will be responsible for overseeing the development, maintenance, and implementation of SCADA and Process Control systems for assigned water and wastewater facilities, and completes the reassignment of SCADA oversight duties formerly assigned to Mr. Marcis Kempe. (Mr. Kempe's other duties have been distributed among several senior managers through personnel changes approved by the Board on February 12, 2014.)

The Manager, SCADA and Process Control position will provide key oversight and management of the staff performing development, deployment, and maintenance of SCADA systems for all water and wastewater facilities (excluding the Carroll Water Treatment Plant, the Ware Disinfection Facility, the Deer Island Wastewater Treatment Plant, and the Clinton Wastewater Treatment Plant). The position will also be responsible for directing the development and implementation of automation activities aimed at improving facility performance and maintenance requirements, and reducing energy consumption.

The Chief Operating Officer and the Deputy Chief Operating Officer for Operations, Engineering and Construction interviewed Mr. Kubaska and recommend that he be appointed to this newly created position. Mr. Kubaska, who currently holds the position of Senior Program Manager (Unit 9, Grade 30) in the Wastewater Operations Department, is uniquely qualified to assume the management responsibilities for this position. Mr. Kubaska joined MWRA in 1994 and currently directs and manages staff performing assessment of process control systems for wastewater pumping, headworks, and CSO storage and treatment facilities. Prior to holding the

Senior Program Manager position, Mr. Kubaska held increasingly responsible positions within MWRA, including: SCADA Program Manager in MWRA's Operations Engineering Department, managing the design and implementation for the wastewater SCADA implementation program; and, Project Manager in MWRA's Planning and CSO Departments, managing master planning for Wastewater SCADA, and hydrologic and hydraulic modeling efforts to assist in MWRA's wastewater system optimization. Mr. Kubaska's current duties and prior responsibilities position him well for this new role. Prior to joining MWRA, Mr. Kubaska worked for Metcalf & Eddy, Inc.

Mr. Kubaska holds a Bachelor's degree in Civil Engineering from the University of Massachusetts at Amherst. He is a Massachusetts Registered Professional Civil Engineer, and holds a Massachusetts Grade 6-C Wastewater Treatment Facilities Operator license and is ITIL Foundation Certified in IT Service Management.

Mr. Kubaska's current salary as Senior Program Manager (Unit 9, Grade 30) is $112,540; the recommended salary is $121,431. The recommended compensation is commensurate with the Manager, SCADA and Process Control position and its accompanying responsibilities.

BUDGET/FISCAL IMPACT:

There are sufficient funds for this position in the FY14 and Proposed FY15 Current Expense Budgets.

ATTACHMENTS:

Resume of Brian L. Kubaska
Position Description
Organization Chart

Brian L. Kubaska

Ipswich, MA

Education/Certification:

BS, Civil Engineering, University of Massachusetts, Amherst
Massachusetts Register Professional Civil Engineer
Massachusetts Certified Grade 6-C Wastewater Treatment Facilities Operator
ITIL Foundation Certified in IT Service Management

Experience:

Massachusetts Water Resources Authority (MWRA), Sr. Program Manager, Wastewater Operation/ Process Control & Project Support (Sept 2008 - Present)

- Direct and manage the day-to-day work of as many as eight (8) program managers, project managers & engineers, and field inspection staff performing the diverse responsibilities of the Process Control & Project Support group, including:

  - **Leading the problem assessment of process control systems and directing and managing modifications to wastewater pumping, headworks, and CSO storage and treatment facilities.** Examples include headworks automated choking and isolation modifications, pumping strategy changes to reduce maintenance and improve operation and energy efficiency, wet scrubber monitoring and control improvements, chemical treatment of H_2S within interceptors, CSO facility equipment audits, numerous instrumentation data analyses to access facility operation and performance, etc.
  - **Initiating, directing and managing in-house and consultant design and evaluation efforts.** Projects included Backup Pump Control, MWR010 Cleaning, Somerville Marginal CSO Gate Replacement, Cottage Farm Fuel Oil System Upgrades, Prison Pt. CSO Pumping and Gear Box Rehab., NI Switchgear Modifications, CSO Treatment Evaluation, etc.
  - **Providing 8(m) and direct connection permit application reviews, processing, documentation and field monitoring.** Major permits included, Wentworth Residential Building, Mass. College of Art, Brookline Sewer Separation, etc.
  - **Scoping, procuring and managing service and purchase contracts**. Contracts included the Union Park Pump Station O&M contract, and MWRA service and supply contracts (instrumentation, fuel storage tanks, crane, boilers, elevator, fire & sprinkler system, carbon replacement, interceptor H2S control chemical purchase, etc.).

- Served as primary contact to consultants for review and development of control strategies for the recently constructed South Boston CSO facilities.
- Directed and developed multiple RFQ/Ps, performed design reviews and provided technical support for wastewater planning, engineering studies, and design projects.
- Guided operations and maintenance and provided technical support on various process control, operations, and maintenance issues.
- Proposed, prepared and reported on CIP and CEB projects for WW Operations and coordinated with WW Engineering to prioritize and better define CIP projects.

Massachusetts Water Resources Authority (MWRA), SCADA Program Manager, Field Operations Department / Operations Engineering (July 2001 – Sept 2008)

- Managed the Design and Implementation of the Wastewater SCADA implementation Program including:
  - Development of the RFQ/P for design and implementation (PLC programming, HMI development and testing).
  - Management of the SCADA design consultant, including review and approval of schedules, budgets, and invoices, development of construction bid documents, procurement of construction contracts, and preparation of project updates to senior managers and the BOD.
  - Coordinated the efforts of MWRA operations, SCADA, and consultant staff to implement SCADA at MWRA's wastewater facilities.
  - Managed the development of control strategies, consultant PLC and HMI programming efforts, and participated in system testing.
  - Served as a key team member during SCADA construction by reviewing and approving responses to contractor questions, and participating in construction coordination meetings.

- Served as the Field Operations Department liaison on several recent facility design and construction projects, including the Intermediate Pumping Station, BOS019 CSO facility, and BWRPS. Provided detailed review and guidance on control strategy development, implementation and testing.
- Supported the incident commander in the Emergency Operations Center to direct and monitor wastewater field operations during storm events.
- Developed and assisted in presentations to MWRA's Board of Directors, Senior Staff, and Wastewater Advisory Committee for the purposes of informational updates, and contract and amendment approvals.
- Managed the Wastewater Hydraulic Optimization project to update MWRA's hydrologic and hydraulic model and then used the model to evaluate hydraulic optimization alternatives.

Massachusetts Water Resources Authority (MWRA), Project Manager, Sewerage Division – Planning & CSO Departments (February 1994 - July 2001)

- Managed the Master Planning phase of the Wastewater SCADA Implementation Program, which included a need assessment, peer review, and alternative evaluation.
- Advanced wastewater operations towards the goal of implementing SCADA, including providing presentations to various groups, coordinating with other related MWRA projects and programs to ensure standardization of critical equipment, and participation in development of SCADA standards documents.
- Managed the Sewerage Division's hydrologic and hydraulic modeling efforts to assist in; planning and design of various sewer rehabilitation, replacement and relief projects, optimization of transport system hydraulics, providing input on court ordered CSO reports, providing project support to determine bypass requirements, and to help develop facility and system standard operating procedures.
- Developed various reports to document current and future MWRA wastewater transport facility process components and hydraulic impacts on upstream and downstream systems and facilities, including the Wastewater Transport Current Equipment and Operational Summary Report.
- Assisted in the planning, design and implementation of the MWRA's CSO control program,

including developing scope of services and reviewing consultant deliverables on existing and proposed wastewater collection systems, facility performance, and receiving water impacts.

- Coordinated with and provided assistance to MWRA member communities and regulatory agencies regarding wastewater collection system flows, hydraulics and operations.
- Evaluated and provided guidance on the overall wastewater system expansion and permit applications for connection to the MWRA's wastewater transport system.
- Assisted in development and use of databases and Graphical Information Systems to answer planning and design questions and present data.

Metcalf & Eddy, Inc. Wakefield, MA (May 1990 - February 1994)

- Part of a project team which developed a system master plan and CSO facilities plan for the MWRA.
- Used EPA diffuser models and various water quality models to assist in design of river and ocean effluent discharges and to evaluate the effects of point source and non-point source discharges.
- Participated in sampling efforts to meet NPDES permit application requirements and to evaluate several hazardous waste sites and contaminated streams.
- Assisted in the design of stormwater drainage channels, culverts, detention ponds, leachate collection systems, roadways and berms for sanitary landfills, ash monofills and transfer stations.
- Participated in the design phase of the Boston Harbor Project, Deer Island Wastewater Treatment Facility. Responsibilities included; reviewing and writing standard and nonstandard specifications, preparing conceptual designs, and tracking plant wide design problems.

Daniel O'Connell's Sons, Holyoke, MA (Summers 1988 & 1989)

- Assisted the field engineer in the construction of the Connecticut River Fish Research Laboratory, which included significant site development and substantial poured in place concrete construction.
- Supervised construction and assisted personnel in adherence to location, dimension and specification of contract documents.

MWRA
POSITION DESCRIPTION

POSITION: Manager, SCADA and Process Control

PCR#:

DIVISION: Operations

DEPARTMENT: SCADA

BASIC PURPOSE:

The Manager, SCADA and Process Control oversees the development, maintenance, and implementation of SCADA and Process Control systems for assigned water and wastewater facilities. Responds to emergency situations 24 hours per day, seven days per week.

SUPERVISION RECEIVED:

Works under the general supervision of Director, Metropolitan Water Operations

SUPERVISION EXERCISED:

Exercises close supervision of assigned professional, engineering, technical, maintenance and operations staff.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Directs the further development, implementation, and optimization of SCADA and Process Control Standards for all water and wastewater facilities (excluding CWTP, DITP, and WDF).

- Develops and implements new SCADA and Process Control initiatives to ensure efficient, reliable and secure SCADA and Process Control operation of all assigned water and sewer facilities. Ensures that major initiatives and policy changes are properly communicated to all staff.

- Reports to senior staff on department initiatives and progress towards agency goals.

- Recommends, develops and implements policies and procedures for the SCADA and Process Control groups.

- Directs the use of MWRA databases and software to develop, improve, and produce reports to monitor and track water and wastewater facility performance.

- Develops and implements continued updates of control strategies to ensure clear documentation of automated facility controls and alarming functions.

- Directs the study and implementation of automated facility control modifications, to reduce energy consumption, maintenance requirements, and improve facility performance.

- Directs the development and implementation of cross departmental (operations, SCADA, maintenance, process control) work plans to implementation facility audits to ensure automation, alarming functions, and emergency safeguards are functioning as designed and documented.

- Directs the operation, modification and continued improvement of the communication infrastructure to support transmission of SCADA and security data throughout MWRA's system.

- Directs the documentation of all control panels and instrumentation installations with support from other departments.

- Directs in-house and contract instrumentation maintenance, modifications and upgrades.

- Oversees the review of capital project designs, and directs staff support of construction and new equipment startup with regard to group responsibilities to ensure adherence to standards and effective integration into overall SCADA system.

- Directs the maintenance and implementation of PLC an HMI programming to support operations needs.

- Oversees staff productivity monitoring and continual improvement through staff skills development, strategic planning, SOP improvements and research and implementation of technology advances.

- Identifies needed improvements to work practices and works with Operations Management and Labor Relations staff to bring about changes. Oversees personnel management.

- Manages unit budget. Assesses resources needed to effectively meet department objectives, prepares budgets requests and in depth justification, explains budget variances, and controls unit spending to ensure overall budget compliance.

- Reviews assigned employees' performance per MWRA procedures.

- Assists in maintaining harmonious labor management relations through proper applications of collective bargaining agreement provisions and established personnel policies.

- Prepares for and hears Step-One grievances and pre-disciplinary hearings.

- Participates in collective bargaining negotiations.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) A four (4) year Bachelor of Science degree in civil, electrical or mechanical engineering or related field. A masters degree preferred; and

(B) Ten (10) to twelve (12) years experience in engineering, construction management, operations and maintenance in a water or wastewater environment including at least four (4) years of experience in a supervisory position; and

(C) Five (5) to Seven (7) years experience in design, startup and managing water/wastewater SCADA and process control systems; and

(D) Knowledge of computer hardware and software such as SCADA and communications technology, routers and networking, cyber security, PLC control programming, HMI programming, databases, data presentation and analysis tools; and .

(E) Experience in working in a union environment desirable.

Necessary Knowledge, Skills and Abilities:

(A) Knowledge of engineering principles and practices.

(B) Ability to read and interpret plans and drawings.

(C) Proficient in the use of personal computers and associated MicroSoft Office software programs, including Word, Excel, and Access.

(D) Experience with the CMMS Software MAXIMO.

SPECIAL REQUIREMENTS:

A valid Massachusetts Class D Drivers License required.

Registered Professional Engineer license required.

TOOLS AND EQUIPMENT USED:

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

PHYSICAL DEMANDS:

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

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

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

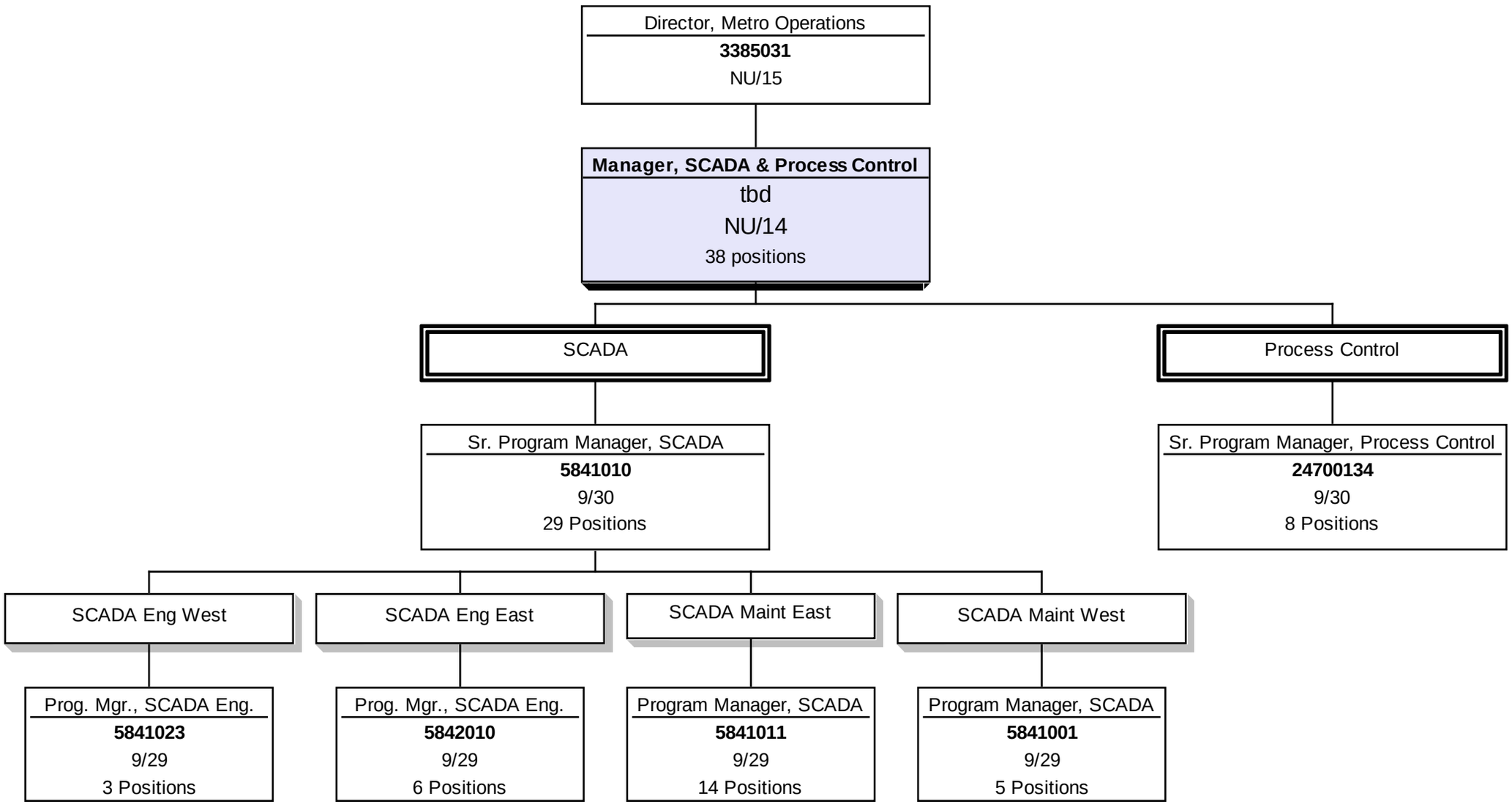
WORK ENVIRONMENT:

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

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

SCADA & Process Control

April 2014



STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: April 16, 2014
SUBJECT: Appointment of Senior Program Manager, SCADA

COMMITTEE: Personnel & Compensation

___ INFORMATION
_X_ VOTE

Robert G. Donnelly, Director, Human Resources
John P. Vetere, Deputy Chief Operating Officer
Andrew Hildick-Smith, Director of Emerg. Planning and Prep.
Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To approve the appointment of Mr. Augustin A. Serino, (Unit 9, Grade 29) to the position of Senior Program Manager, SCADA (Unit 9, Grade 30), at the recommended salary of $112,541, effective April 19, 2014.

DISCUSSION:

The position of Senior Program Manager, SCADA became vacant upon the promotion of the prior incumbent, Mr. Andrew Hildick-Smith, to the position of Director of Emergency Planning and Preparedness. That position was held previously by Mr. Marcis Kempe, and the promotion was approved by the Board on February 15, 2014, as part of the reorganization that resulted from the retirements of Mr. Kempe, Mr. Trubiano, and Mr. O'Brien.

Organizationally, the Senior Program Manager, SCADA position reports to the new Manager, SCADA and Process Control (which is the subject of a separate staff summary at this meeting). The position is responsible for managing the SCADA system and supervising 29 staff that work in Chelsea, Southborough, and out at Cosgrove.

MWRA's SCADA system provides monitoring and/or control of approximately 100 water and wastewater transport facilities across MWRA's service area, ranging in size from the John J. Carroll Water Treatment Plant down to individual pressure-reducing valve chambers. The SCADA staff of engineers and technicians perform the programming, maintenance, and enhancement of an operational technology infrastructure, including wide area networks, local area networks, data radios, landline communications equipment, programmable logic controllers (PLCs), field instrumentation, human-machine interface (HMI) PCs and servers, an extensive

microwave system, and cyber security hardware and software. SCADA staff also review Capital Improvement Program contract technical designs, provide start-up support for new facilities, perform system-wide upgrades, design, program and implement smaller SCADA systems, contribute to process control decisions, update system documentation, and provide data collection support for MWRA's water quality security monitoring system.

Selection Process

The position was posted internally and two candidates applied, both of whom were determined to have met the minimum qualifications. The Director of Emergency Planning and Preparedness and a representative of MWRA's Affirmative Action and Compliance unit interviewed both candidates. Upon completion of the interviews, it was determined that Augustin A. Serino was the best candidate to fill the position.

Mr. Serino has 14 years of SCADA experience in water and wastewater systems. Before coming to MWRA, he worked for a consulting firm as a Control Systems Applications/Design Engineer and programmed the PLCs and HMIs for the Exeter, New Hampshire wastewater treatment plant and the New Britain, Connecticut water treatment plant. Mr. Serino began his career at MWRA in 2004 as a Senior Monitoring and Control Engineer with responsibilities for the start-up and testing of the Carroll Water Treatment Plant. After only three years, Mr. Serino was promoted to Project Manager, SCADA where he was actively involved in the start-up of the Wastewater Transport SCADA Implementation Project. During his time in these roles, Mr. Serino also worked on the enhancement of the Cosgrove Intake turbine control system and the development of SCADA Standards; helped establish a SCADA test bed; implemented the Wastewater communications network; built a graphical network monitoring tool; and established an alarm analysis database.

In 2009, Mr. Serino was promoted to the position of Program Manager, SCADA Engineering, and he assumed responsibility for the maintenance and enhancement of the programming, computer, networking, and cyber security elements of the Metro Water and Wastewater Transport SCADA systems. During this time, he expanded his involvement with cyber security and has overseen or implemented the configuration of firewalls, switches, router encryption, PC hardening, network monitoring, and the installation and maintenance of anti-malware software. He has taken advance cyber security training and has earned a security certification as an Intrusion Analyst. As the Program Manager, SCADA Engineering, Mr. Serino manages a staff of five engineers and he plays an active, hands-on role in analyzing complex systems and either solving problems or providing explanations. He effectively manages his staff with a respectful management style that engenders respect in return.

Mr. Serino earned a Bachelor of Science degree in Mechanical Engineering from the University of Massachusetts, Amherst. He is a registered Professional Engineer in Massachusetts, and has a Grade T4 Water Treatment license.

BUDGET/FISCAL IMPACT:

Adequate funds for this position are included in the Operations Division's FY14 and Proposed FY15 Current Expense Budgets. The recommended salary is in accordance with guidelines established in current MWRA collective bargaining agreements.

ATTACHMENTS:

Resume of Augustin A. Serino
Position Description, Senior Program Manager, SCADA
SCADA Organization Chart

Augustin A. Serino

Salem, MA 01970

Experience:

3/09 – Present **MWRA,** Chelsea, MA
Program Manager, SCADA
In this position, I am responsible for supervising the eastern SCADA engineering staff and our efforts to support MWRA water and wastewater operations & maintenance as well as MWRA engineering. In addition, I am responsible for the continual improvements toward maintaining the SCADA system security from cyber threats. In this position, I have five SCADA engineering staff that report to me.
Specific duties include:

- Identifying, prioritizing and executing work related to the function and security of the Eastern Water & Waste Water SCADA System.
- Supervisor of two Project Managers and three Sr. Monitoring and Controls Systems engineers
- Provide Troubleshooting support in all Waste Water Facilities, often times, not related directly SCADA
- Coordinate work with various MWRA disciplines such as electrical, mechanical, HVAC & operations
- Assisted Engineering department on many SCADA/controls systems related issues
- PLC programming Allen Bradley SLC & Control Logix PLC's
- SCADA development with iFIX software
- Continual work on enhancing MWRA SCADA cyber security position
- Engineer, Maintain and configure SCADA network operation and security devices such as routers, firewalls, switches, network security software, network monitoring software, network antivirus systems.
- Hiring of Staff

4/07 – 3/09 **MWRA,** Chelsea, MA
Project Manager, SCADA
Responsible for maintaining and enhancing the SCADA system for the MWRA waste water transport/operations department. Actively involved in the managing the execution of the Waste Water Transport SCADA Implementation Project (CP-1,2). Duties in the CP-1 project included: facility start-up testing, contractor over sight, technical support and enhancements of the system when contractors work was complete. Responsible for the implementation of the 56k SCADA Communications system. Specific duties include:

- Identifying, prioritizing and executing work related to the availability and security of the Waste Water SCADA System.
- Supervisor of two Sr. Monitoring and Controls Systems engineers
- Troubleshooting problems in all Waste Water Facilities, often times, not related directly SCADA
- Coordinate work with various MWRA disciplines such as electrical, mechanical, HVAC & operations
- Assisted Engineering department on many SCADA/controls systems related issues
- PLC programming Allen Bradley SLC PLC's
- SCADA development with iFIX software
- Built SNMP analysis database for compiling network diagnostic information in efforts to trouble shoot problems on the SCADA Network
- Built SCADA Alarm analysis database for compiling station alarm information in efforts to identify problem areas within the waste water stations
- Maintained and configured SCADA network operation and security devices such as routers, firewalls, switches, digi-concentrators, network security software, network monitoring software, network antivirus systems.
- Assisted SCADA staff responsible for Water SCADA systems.

7/04 – 4/07 **MWRA,** Southboro, MA
Senior Controls & Monitoring Engineer
Responsible for maintaining and enhancing the SCADA system for the MWRA western water department. Actively involved in the start-up, testing and enhancements of the Carol Water Treatment Plant. Responsible for the modification and enhancement of the Turbine Control System at the Cosgrove Intake. Specific duties include:

- PLC programming Allen Bradley SLC PLC's
- SCADA development with Intellution software
- Built master equipment inventory database in Microsoft access
- Involved in development and construction of SCADA system test bed
- Involved in development of MWRA SCADA standards. Wrote PLC communications verification standard.
- Responsible for SCADA system and process controls troubleshooting
- Maintained and configured SCADA network operation and security devices such as routers, firewalls, switches, digi-concentrators, network security software, network monitoring software, network antivirus systems.
- Involved with FIX32 to iFIX conversion of SCADA nodes in Eastern Water.

11/99 – 7/04 **Camp Dresser and McKee Inc,** Cambridge, MA
Control Systems Applications/Design Engineer

Responsible for the design, programming, start-up and testing of instrumentation and control systems for various municipal and environmental applications including water & waste water treatment facilities, contaminated site remediation facilities and sewer systems. The responsibilities of Control System Applications include PLC programming, SCADA development and Instrumentation and Control System start-up. The responsibilities of Control System Design entails the development of a system in which process measurement, process control, and operator interface equipment are combined and connected to a process in order to provide automatic or manual control and monitoring of a process. Specific duties include:

- PLC programming Modicon and Allen Bradley PLC's
- SCADA development with Intellution, Wonderware, visual basic, and various other software
- Control System Start-up
- Control System Operator Training
- Creating Process Control Diagrams (P&ID's) that show how field measurement devices and process equipment shall communicate control signals, as discrete and analog inputs/outputs, with Programmable Logic Controllers
- Developing a SCADA and Control System Architectures that show how Programmable Logic Controller such as Allen Bradley, Modicon and other industry standard PLC's send and receive process conditions and control signals, respectively, to a, PC based, operator interface system, via open architecture communications protocols, such as Ethernet or Modbus
- Writing design specifications that specify all requirements necessary for an instrumentation system supplier to correctly integrate the control system design into the process.
- Interfacing with both clients and contractors in order to assist with technical problems and ensure that the system both satisfies process requirements and is implemented correctly and efficiently.

6/97 – 10/98 **Westinghouse Electric Company,** Westmont, IL

Field Service Engineer

In-depth power plant experience working on steam turbine overhauls. Responsible for union labor management, ordering of renewal parts, report writing, trouble shooting, and engineering research. Managed workers, coordinated contracted services, and provided technical assistance on Westinghouse turbine overhauls for various power producers. Inspected and repaired oil operated turbine control systems, steam sealing systems, and heat transfer equipment. Also involved in a variety of specific repairs including:

Nozzle block Installation	Turbine Alignment
Turbine Blade Removal	Turbine Blade Installation
Machining of Turbine Components	Welding of Turbine Components
Steam Valve Inspection and Repair	Evaluation of Turbine Clearances
Safe Rigging	Hazardous Material Removal

12/98 – 10/99 **American Waterways,** Portland, OR

First Mate/Engineer

Second in command, while underway, of three passenger vessels conducting public cruises upon the Willamette and Columbia Rivers in Oregon. Operated and maintained all electro-mechanical equipment on three twin screw diesel powered marine vessels. Responsible for the direction of passengers and crew in emergency situations. Responsible for the directing of all deck crew in safe boat operation.

Related Experience:

6/85 – 5/97 Worked in a variety of positions and environments throughout college and high school including:
Adolescent Councilor for troubled youths; Production Assistant and Foreman of ten person stage and sound system crew; Restaurant Shift Manager, Aircraft Ground Crew with National Aerial Advertising.

Primary Gain:

Gained invaluable experience working with people in varied settings. Developed a strong work ethic and a get the job done orientation. Enhanced my communication skills and learned to work well with people from all walks of life.

Education & Professional Certifications:

BS, Mechanical Engineering, May, 1997
University of Massachusetts, Amherst, MA

PE Certificate in Control Systems in MA (Lic # 46914)

Grade IV Water Treatment License in MA (Lic. # 20018)

References:

Dave Coppes, MWRA ext. 3645
Dan Tran, MWRA ext. 3667
Mark Hemmingway, CDM 617-799-8486

MWRA
POSITION DESCRIPTION

POSITION: Senior Program Manager, SCADA

PCR#:

DIVISION: Operations

DEPARTMENT: SCADA

BASIC PURPOSE:

Assists the manager in managing the SCADA system and directly oversees the SCADA system installation, operation and maintenance. Required to be part of an on-call rotation for emergencies twenty-four (24) hours a day, seven (7) days a week.

SUPERVISION RECEIVED:

Works under the supervision of an Operations Division senior manager.

SUPERVISION EXERCISED:

Exercises close supervision of approximately thirty (30) staff and the SCADA program.

ESSENTIAL DUTIES AND RESPONSIBILITIES:

- Directs corrective, preventive and predictive maintenance on all SCADA systems and electrical, electronic, mechanical and pneumatic equipment used in control, measurement and recording of water flow and pressure, treatment and real time water quality monitoring at SCADA sites.

- Directs SCADA system development including assessment of operator needs, development of standards, deployment of new systems and upgrading of existing systems as appropriate.

- Directs the assessment of SCADA system cyber security risks and the testing and implementation of protective measures.

- Participates in capital project design, construction and start-up to ensure adherence to standards and effective integration of new SCADA controlled facilities into the overall SCADA system.

- Works towards harmonious personnel relations and positive staff morale. Performs performance reviews, investigates employee complaints, addresses employee conflicts, initiates disciplinary actions and identifies and proposes organizational changes to address changing needs.

- Identifies training needs and implements appropriate in-house or consultant-led training programs.

- Manages program budget. Assesses resources needed to effectively manage unit, prepares budget requests and in-depth justification, explains budget variances and controls unit spending to ensure overall budget compliance.

- Monitors, reports and works to continually improve staff productivity through staff skills development, strategic planning, standard operating procedures (SOPs) improvements and research and implementation of technology advances.

- Ensures that the unit's SOPs effectively communicate the unit's proper operating procedures and are being utilized by staff. Develops, documents and continually evaluates effectiveness of the SOPs and facility manuals. Ensures that all staff is properly trained.

- Ensures that all staff is familiar with, has been trained on and is utilizing MWRA Safety Policies and Procedures.

SECONDARY DUTIES:

- Performs related duties as required.

MINIMUM QUALIFICATIONS:

Education and Experience:

(A) A Bachelor of Science degree in Electronic / Electrical Engineering or a related field; and

(B) Seven (7) to nine (9) years experience with process control systems, electronic, electrical, pneumatic and mechanical instrumentation including at least four (4) years in a supervisory position; and

(C) Five (5) to seven (7) years of demonstrated experience in SCADA systems including operations, maintenance, design, installation and start-up; and

(D) Three (3) to five (5) years experience in data transmission via radio, microwave and telephone data lines; or

(E) Any equivalent combination of education and experience.

Necessary Knowledge, Skills and Abilities:

(A) Proficiency in computer hardware and software, including SCADA and communications technology, routers and networking, cyber security, PLC control programming, HMI programming, databases, data presentation and analysis tools, and Microsoft Office.

SPECIAL REQUIREMENTS:

Professional Engineer license preferred.

A valid Massachusetts Grade 4D Water Distribution Operator license, or a Grade 2T Water Treatment Operator license, or a Grade 4 Wastewater Treatment Plant Operator license or a NEWEA Grade IV Wastewater Collections System Operator certification within one (1) year.

A valid cyber security certification preferred

A valid FCC General Radiotelephone Operators License preferred.

A valid Massachusetts Drivers License required.

TOOLS AND EQUIPMENT USED:

Electronic test equipment, computers, PLCs, hand tools, climbing and fall retrieval equipment, mobile radio, etc.

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 occasionally is required to site, stand and walk. The employee is frequently required to climb or balance; stoop, kneel, crouch, or crawl; taste or smell.

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

WORK ENVIRONMENT:

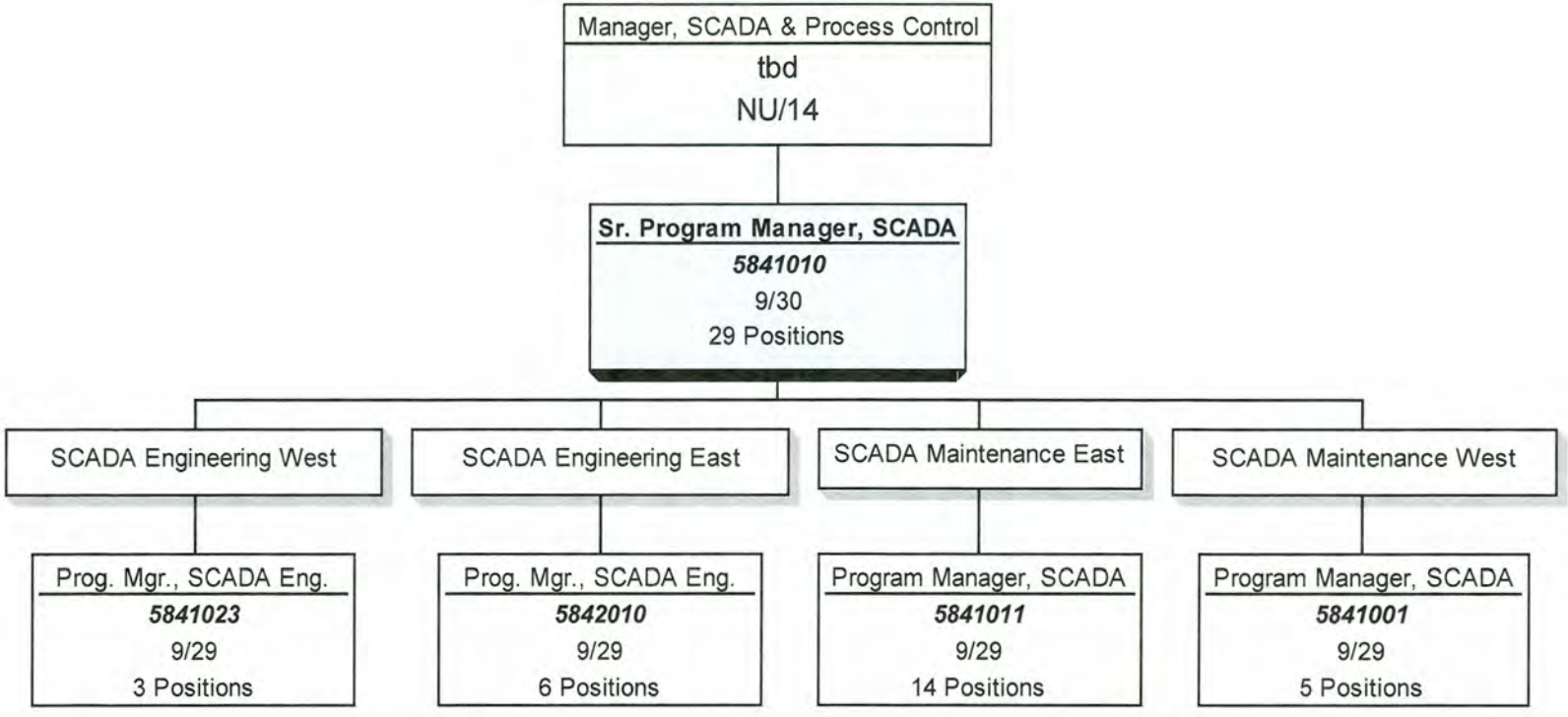
The work environment characteristics described here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly works in an office environment. 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 office settings.

SCADA Program

April 2014



MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey
Executive Director

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

BOARD OF DIRECTORS' MEETING

to be held on

Wednesday, April 16, 2014

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. Approval of Standby Bond Purchase and Direct Purchase Agreements (ref. AF&A B.1)
2. I/I Local Financial Assistance Program Annual Update (ref. WW B.1)
3. PCR Amendments – April 2014 (ref. P&C A.1)
4. Appointment of Chief Engineer (ref. P&C A.2)
5. Appointment of Director, Construction (ref. P&C A.3)
6. Appointment of Manager, Process Control (ref. P&C A.4)
7. Appointment of Manager, SCADA and Process Control (ref. P&C A.5)
8. Appointment, Senior Program Manager, SCADA (ref. P&C A. 6)

B. Contract Awards

1. Integrated Financial, Procurement and Human Resources/Payroll Management System Maintenance and Support: Infor Global Solutions (ref. AF&A C.1)

2. Citrix Application Virtualization and Mobile Device Management Design and Implementation: IntraSystems, Inc., State Blanket Contract ITC47, WRA2832-Q (ref. AF&A C.2)

3. Technical Assistance Consulting Services – Surveying: GEOD Consulting, Inc., Contract 597TA (ref. WW C.1)

4. Electrical Equipment Upgrade Construction 4 – Resident Engineering and Inspection, Deer Island Treatment Plant: AECOM Technical Services, Inc., Contract 7416 (ref. WW C.2)

5. Electrical Testing and Technical Services – Metropolitan Boston: Infra-Red Building and Power Service Co., Inc., Contract OP-237 (ref. WW C.3)

6. Process and Control System (PICS) Service and Maintenance Contract - Deer Island Treatment Plant: ABB Automation, Inc. (ref. WW C.4)

7. Control of Invasive Plants at Stillwater Basin, Wachusett Reservoir: AE Commercial Diving Services, WRA-3800 (ref. W B.1)

C. Contract Amendments/Change Orders

1. Quabbin UV Disinfection Facilities: Daniel O'Connell's Sons, Inc., Contract 6776, Change Order 5 (ref. W C.1)

V. CORRESPONDENCE TO THE BOARD

VI. OTHER BUSINESS

VII. EXECUTIVE SESSION

A. Real Estate

1. Watershed Land Acquisition Program

B. Litigation

1. Extension of Professional Services Contract - Estate of Marie Stewart: James Kavanaugh, Jr., Esq./Conn, Kavanaugh

2. Extension of Professional Services Contract – Easements Affecting Stoneham Water Storage Project: Christopher Pitt, Esq./Robinson & Cole

VIII. ADJOURNMENT

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the Board of Directors

March 12, 2014

A meeting of the Board of Directors of the Massachusetts Water Resources Authority was held on March 12, 2014 at the Authority headquarters in Charlestown. Chairman Sullivan presided. Present from the Board were Ms. Wolowicz and Messrs. Barrera, Carroll, Flanagan, Foti, Pappastergion, Swett, Vitale and Walsh. Mr. Cotter was absent. Among those present from the Authority staff were Frederick Laskey, Executive Director, Steven Remsberg, General Counsel, Michael Hornbrook, Chief Operating Officer, Rachel Madden, Director of Administration and Finance, and Bonnie Hale, Assistant Secretary. The meeting was called to order at 1:00 p.m.

APPROVAL OF MINUTES

Upon a motion duly made and seconded, it was

Voted to approve the minutes of the Board of Directors' meeting of February 12, 2014, as presented and filed with the records of the meeting.

REPORT OF THE EXECUTIVE DIRECTOR

Mr. Laskey reported on various recent meetings and activities, and introduced a presentation concerning the construction of the Spot Pond Covered Storage project in Stoneham.

BOARD ACTIONS

Discussion: Memorandum of Understanding with City of Quincy

Consideration of this item was postponed until the end of the meeting.

APPROVALS

Acceptance of Grant of Easement from Commonwealth of Massachusetts, Waterworks Operations, Ware Disinfection Facility

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to accept a permanent exclusive easement for land in Ware, Massachusetts, as presented and filed with the records of the meeting, from the Commonwealth of Massachusetts acting through its Division of Capital Asset Management and Maintenance to support waterworks operations. The consideration for the easement shall be continued funding by MWRA of watershed protection activities of the Department of Conservation and Recreation.

Final CSO Annual Progress Report 2013

Upon a motion duly made and seconded, it was

Voted to authorize staff to submit the *Combined Sewer Overflow Annual Progress Report 2013* to the Federal District Court by March 15, 2014, in compliance with Schedule Seven of the Boston Harbor Case, as presented and filed with the records of the meeting.

PCR Amendments – March 2014

Upon a motion duly made and seconded, it was

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

Appointment of Laboratory Manager

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. Mark T. Lambert to the position of Laboratory Manager in the Operations Division (Unit 9, Grade 30) at an annual salary of $99,462.06, to be effective March 15, 2014.

Appointment of Director, Western Operations and Maintenance

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. Guy M. Foss to the position of Director of Western Operations and Maintenance, Operations Division (Non-Union, Grade 15) at an annual salary of $123,977.00 to be effective on the date designated by the Executive Director.

Appointment of Manager, Maintenance, Operations

Upon a motion duly made and seconded, it was

Voted to approve the Executive Director's recommendation to appoint Mr. Edward J. Regan to the position of Manager, Maintenance, Operations Division (Unit 6, Grade 14) at an annual salary of $121,431.00 to be effective on the date designated by the Executive Director.

CONTRACT AWARDS

LabWare LIMS Developer – Staff Augmentation: Atlantic Associates, Inc., WRA-3772Q, State Blanket Contract ITS53 Cat1

Upon a motion duly made and seconded, it was

Voted to approve the award of a purchase order contract for the provision of LabWare Laboratory Information Management System Development Services to Atlantic Associates, Inc., under State Blanket Contract ITS53 Cat1, and to authorize the Executive Director, on behalf of the Authority, to execute and deliver said purchase order contract in an amount not to exceed $179,000.00 for a period not to exceed 12 months.

Thermal and Hydro Power Plant Maintenance, Deer Island Treatment Plant: O'Connor Corporation, Contract S526

Upon a motion duly made and seconded, it was

Voted to approve the award of Contract S526, Thermal and Hydro Power Plant Maintenance, Deer Island Treatment Plant, to the lowest eligible and responsible bidder, O'Connor Corporation, and to authorize the Executive Director, on behalf of the Authority, to execute and deliver said contract in the bid amount of $3,273,607.00 for a term of 730 calendar days from the Notice to Proceed.

Rehabilitation of Anaerobic Digesters, Primary Clarifiers, and New Influent Gates at Clinton Wastewater Treatment Plant: R.H. White Construction Co., Inc., Contract 7277A

Upon a motion duly made and seconded, it was

Voted to approve the award of Contract 7277A, Rehabilitation of Anaerobic Digesters, Primary Clarifiers, and New Influent Gates at Clinton Wastewater Treatment Plant, to the lowest eligible and responsible bidder, R.H. White Construction Co., Inc., and to authorize the Executive Director, on behalf of the Authority, to execute and deliver said contract in the bid amount of $4,347,571.00 for a term of 730 calendar days from the Notice to Proceed.

Engineering Services During Construction for Rehabilitation of Anaerobic Digesters, Primary Clarifiers and New Influent Gates at Clinton Wastewater Treatment Plant: Fay, Spofford & Thorndike, LLC, Contract 7277B

Upon a motion duly made and seconded, it was

Voted to approve the recommendation of the Consultant Selection Committee to select Fay, Spofford & Thorndike, LLC to provide Engineering Services During Construction for Rehabilitation of Anaerobic Digesters, Primary Clarifiers and New Influent Gates at Clinton Wastewater Treatment Plant, and to authorize the Executive Director, on behalf of the Authority, to execute Contract 7277B with Fay,

Spofford & Thorndike, LLC in an amount not to exceed $387,343.85 for a term of 1,095 calendar days from the Notice to Proceed

CONTRACT AMENDMENTS/CHANGE ORDERS

Remote Headworks Upgrade: Malcolm Pirnie, Inc. (ARCADIS U.S., Inc.), Contract 7206, Amendment 3

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to approve Amendment 3 to increase the amount of Contract No. 7206 with Malcolm Pirnie, Inc., Remote Headworks Upgrade, in an amount not to exceed $957,600.00, with no increase in contract term. Further, to approve a change in the Consultant's name for Contract 7206 from Malcolm Pirnie, Inc. to ARCADIS U.S. Inc.

OTHER BUSINESS

Memorandum of Understanding with City of Quincy

There was detailed discussion on the topic of mitigation, past, present and future, for both Quincy and Winthrop, particularly on how the dollar amounts of requested mitigation payments were previously arrived at and should be calculated in the future.

Upon a motion duly made and seconded, it was

Voted that:

Whereas, the Town of Winthrop and its citizens had been adversely impacted by noise, odor and traffic during and after construction of the Deer Island Wastewater Treatment Plant,

Whereas, the City of Quincy and its citizens had been adversely impacted by noise, odor and traffic during and after the construction of a Pelletizing Plant and other facilities related to the aforementioned Deer Island Wastewater Plant,

Whereas, previous Boards of Directors of the Authority had recognized the aforementioned impacts on these two communities, and, to a lesser extent, Braintree, Charlestown and Barnstable,

Whereas, during the period of heavy construction the Authority made payments to Winthrop totaling $38 million and to Quincy totaling $33 million for various construction impacts which severely impacted each community in various adverse ways,

Whereas, at the present time, MWRA only has financial agreements with two communities, Quincy and Winthrop, that fall into the categories of providing community compensation for impacts and for establishing operation arrangement and constraints,

Whereas, since FY 2002* the Authority has made $8.7 million in mitigation payments to Quincy - an annual average of $727,000,

Whereas, since FY 2006* the Authority has made $7 million in mitigation payments to Winthrop - an annual average of $700,000,

Whereas, Winthrop's current agreement expires on June 30, 2015 and Quincy's agreement expired on December 31, 2013,

**Note: Quincy's payments are Calendar years and Winthrop's are Fiscal Years.*

Whereas, it is now apparent that there are no longer any major construction impacts on either community,

Whereas, however, Winthrop provides police and fire services to the entire Deer Island Treatment Plant,

Whereas, however, Quincy provides police and fire services to a number of MWRA facilities, but mainly to the pelletizing plant,

Whereas, it is apparent that Winthrop's responsibilities under its mitigation agreement substantially exceed those of Quincy,

Whereas, this Board of Directors wishes to continue Quincy's mitigation agreement,

Whereas, this Board of Directors believes there is value in having the expiration dates in both agreements be the same,

Now, therefore, the MWRA Board of Directors agrees to extend Quincy's mitigation agreement by making the following schedule of payments:

- January 1, 2014 to June 30, 2014 $350,000.00
- July 1, 2014 to December 31, 2014 $350,000.00
- January 1, 2015 to June 30, 2015 $350,000.00.

continued ...

Voted that the City of Quincy and the Town of Winthrop shall provide the Board of Directors data and financial cost information enumerating the financial burden of these MWRA sites on the City of Quincy and the Town of Winthrop prior to any further mitigation payments after June 30, 2015.

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director to begin looking into future mitigation payments now.

EXECUTIVE SESSION

It was moved to enter executive session to discuss litigation.

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

Yes	No	Abstain
Barrera		
Carroll		
Flanagan		
Foti		
Pappastergion		
Swett		
Vitale		
Walsh		
Wolowicz		
Sullivan		

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

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

* * * *

EXECUTIVE SESSION

* * * *

The meeting returned to open session at 1:40 p.m. and adjourned.