



# MASSACHUSETTS WATER RESOURCES AUTHORITY

Charlestown Navy Yard  
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Boston, MA 02129

Frederick A. Laskey  
Executive Director

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## **ADMINISTRATION, FINANCE & AUDIT COMMITTEE MEETING**

*Chair:* A. Pappastergion

*Vice-Chair:* M. Gove

*Committee Members:*

J. Barrera

J. Carroll

K. Cotter

J. Foti

V. Mannering

to be held on

Wednesday, October 17, 2012

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

Time: 10:00 a.m.

### **AGENDA**

#### **A. Information**

1. FY13 Financial Update and Summary as of September 2012

#### **B. Contract Awards**

1. Lawson Professional Services: Infor Global Solutions

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the  
Administration, Finance and Audit Committee

September 12, 2012

A meeting of the Administration, Finance and Audit Committee was held on September 12, 2012 at the Authority headquarters in Charlestown. Member Mannering presided. Present from the Board were Messrs. Cotter, Foti, Swett and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Mike Hornbrook, Dan O'Brien, John Mahoney, Rachel Madden, Tom Durkin, Kathy Soni, Russ Murray, and Bonnie Hale. The meeting was called to order at 10:25 a.m.

**Information**

FY2012 4th Quarter Orange Notebook

Staff gave a presentation, describing and discussing various performance indicators.

Internal Audit Department Activities Report

Staff highlighted assignments undertaken.

Delegated Authority Report – July and August 2012

Mr. Walsh requested that instead of using a blanket statement about “obsolete” units/machines/parts, the report descriptions be more specific and descriptive in the future, e.g., unit about to fail, unit no longer working, required upgrade, etc.

Pension System Review Issues

Staff described current issues facing public pensions across the country generally and the MWRA Retirement System specifically. There was general discussion and question and answer.

FY12 Year-End Capital Program Spending Report

Staff summarized the report, and there was general discussion and question and answer.

FY12 Year-End Financial Update and Summary

Staff provided the final financial update and variance highlights for FY12, and there was general discussion and question and answer.

**Approvals**

\*Options for Fiscal Year Close-out

Staff described various alternatives for the use of the FY12 budget surplus, and there was general discussion. The Committee recommended authorization to use the FY12 budget surplus of \$9.8M to defease future debt, and authorization to continue the Defeasance Account with the intention of using the funds for a FY13 bond defeasance (ref. agenda item B.1).

**Contract Awards**

\*Installation of a Distributed Antenna System: In-Building Cellular, WRA-3489Q

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

The meeting adjourned at 12:15 p.m.

\* Approved as recommended at September 12, 2012 Board of Directors meeting.


### STAFF SUMMARY

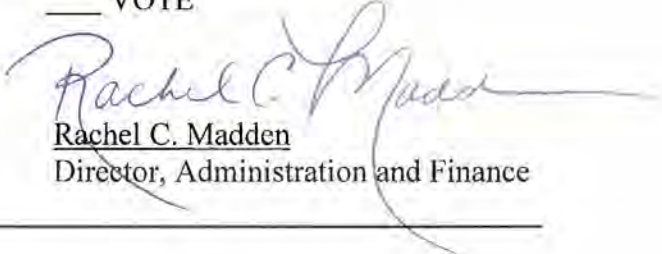
**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** October 17, 2012  
**SUBJECT:** FY13 Financial Update and Summary



COMMITTEE: Administration, Finance & Audit

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 September 2012.

#### DISCUSSION:

As part of MWRA's multi-year rates management strategy, as approved by the Board, the Authority is continuing the practice to set aside favorable Capital Finance variances into the Defeasance Account established in FY12 with the intention of using these funds to defease debt and provide rate relief in future years. As such, \$3.3 million of favorable year-to-date debt service variance has been moved to the Defeasance Account at the close of the first quarter. This variance is the result of the continued low variable rate environment.

Without the transfer of the \$3.3 million in debt service savings to the Defeasance Account, the total year-to-date variance for the first quarter would have been \$4.3 million.

Direct and Indirect Expenses were lower than budget by \$888,000 or 0.6% and total Revenues were higher than budgeted by \$63,000 for a net variance of \$951,000.

The largest non-debt related variances year-to-date are:

- Direct Expenses are lower than budget by \$610,000 for wages and salaries, other services, fringe benefits, training, professional services, and workers' compensation offset by overspending for maintenance, other materials, and chemicals;
- Indirect Expenses are lower than budget by \$279,000 for lower Watershed expenses due to an FY12 overaccrual and lower insurance expenses; and
- Revenues exceed budget by \$63,000 due to higher Other Revenue of \$417,000 mainly for Federal Emergency Management Agency (FEMA) reimbursement for Tropical Storm

Irene costs of \$264,000 offset by lower investment income of \$343,000 due to lower than budgeted short term rates.

Total FY13 expenses are lower than budget by \$888,000 or 0.6% as indicated below:

	FY13 Budget (Sept.)	FY13 Actual (Sept.)	\$ Variance	% Variance
Direct Expenses	\$49.3	\$48.7	-\$0.6	-1.2%
Indirect Expenses	\$16.9	\$16.6	-\$0.3	-1.7%
Debt Service	\$92.5	\$92.5	\$0.0	0.0%
<b>Total</b>	<b>\$158.6</b>	<b>\$157.7</b>	<b>-\$0.9</b>	<b>-0.6%</b>

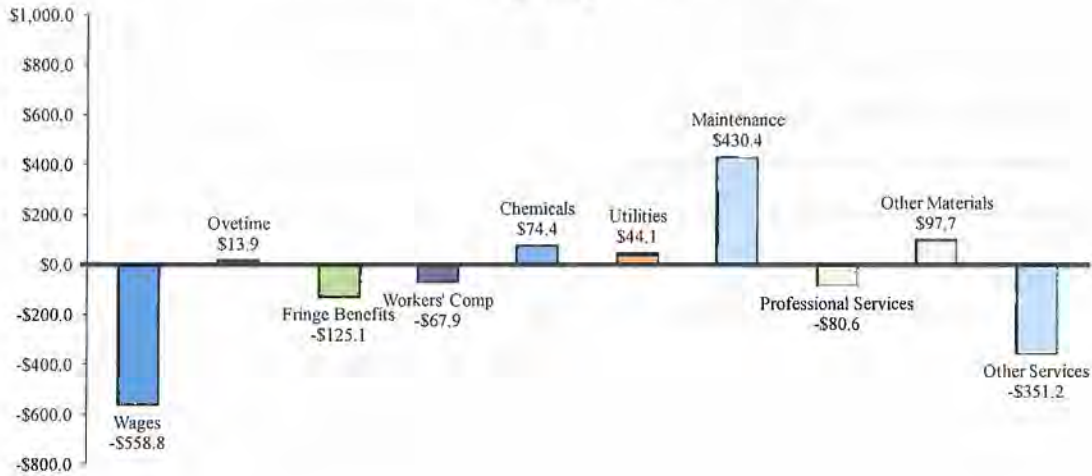
### Direct Expenses

Direct expenses total \$48.7 million, \$610,000 or 1.2% less than budget.



The primary reasons for underspending on direct expenses are lower spending for: wages and salaries, other services, fringe benefits, training, professional services, and workers' compensation. The underspending was offset by higher than budgeted spending for maintenance, other materials, and chemicals. Please refer to Attachment 2 for a more detailed comparison by line item.

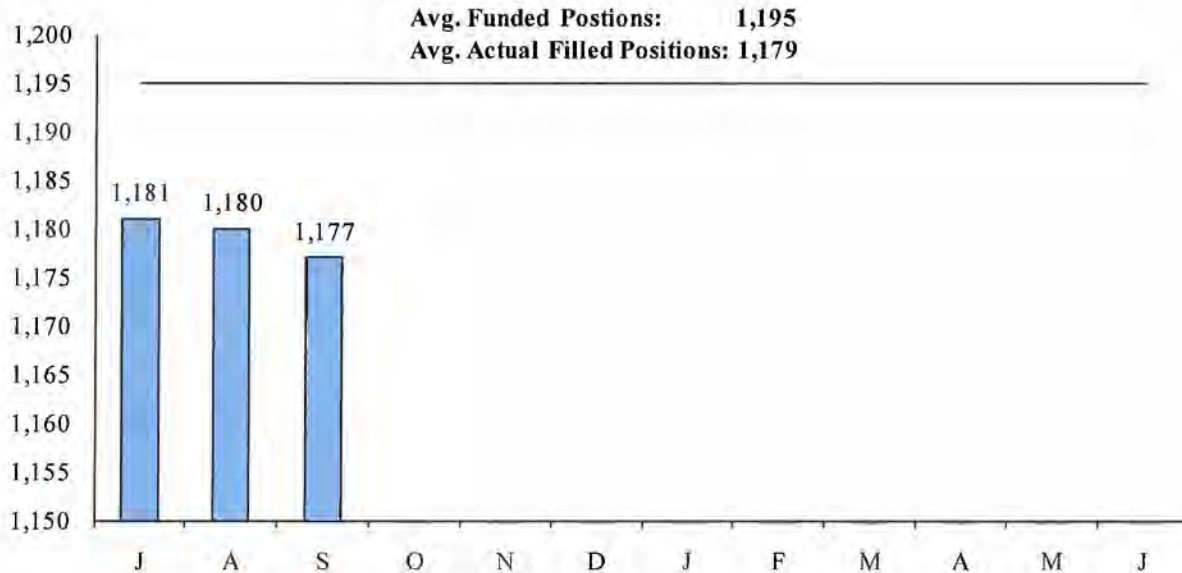
**FY13 Direct Expense Variance (Year-To-Date September)**  
(in 000's)



### Wages and Salaries

Wages and Salaries are underspent by \$559,000 or 2.6% mainly as a result of lower than budgeted filled positions and employees on unpaid time off. The average actual filled positions were 1,179 which are 16 positions lower than the 1,195 positions funded. Additionally, MWRA currently has 10 temporary employees on staff.

**FY13 MWRA Headcount Trend**



**Other Services**

Other Services are lower than budget by \$351,000 or 5.7% mainly due to lower than budgeted sludge quantities. Sludge quantities in FY13 are approximately 10% lower than budget, 97.0 tons per day versus 108.2 budgeted. Additional underspending is exhibited in other services mainly for the timing of remediation activities.

**Fringe Benefits**

Fringe Benefits are underspent by \$125,000 or 2.8% year-to-date in FY13 due to lower than budgeted health insurance costs resulting from lower headcount and the fact that new employees contribute at a higher percentage (25% versus 20%) than employees hired before July 2003.

**Training**

Training is underspent by \$87,000 or 72.0% mainly due to timing.

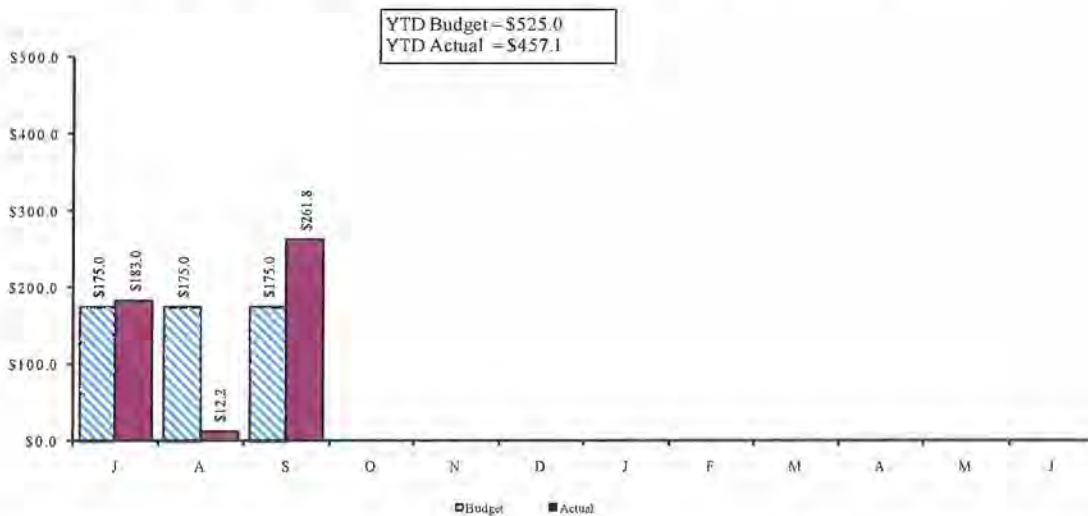
**Professional Services**

Professional Services are underspent by \$81,000 or 5.7% mainly due to lower than budgeted Harbor Monitoring initiatives and legal expenses.

**Workers' Compensation**

Workers' Compensation expenses are lower than budget by \$68,000 or 12.9%. To date, actual payments (\$43,000) and reserves (\$25,000) are trending below budget.

**FY13 Workers' Compensation Spending (Year-To-Date September)**  
(in thousands)



# of Open Claims-Lost Time	48	52	50							
# of Open Claims-Medical Only	46	56	49							

## Maintenance

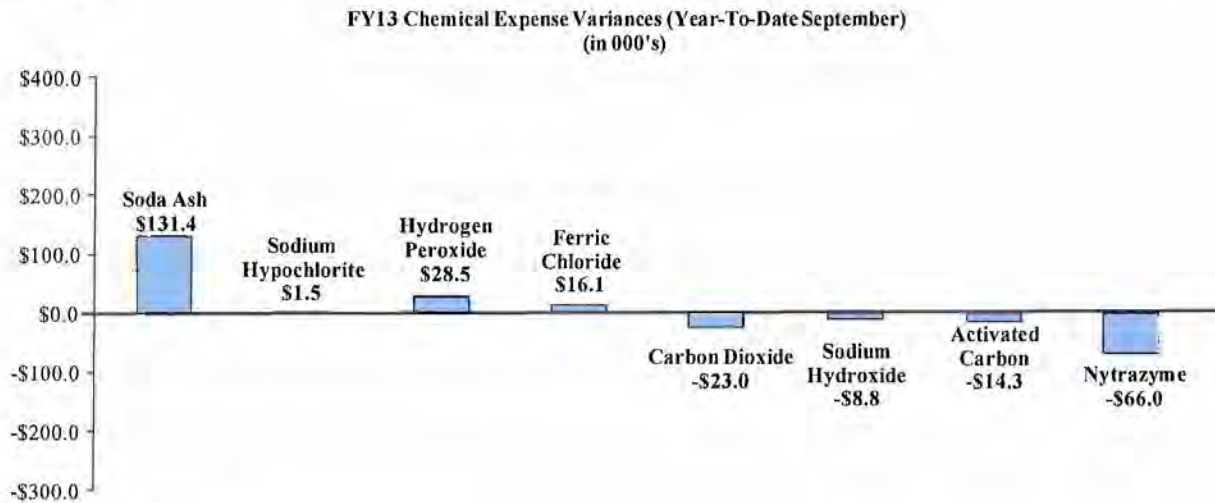
Maintenance is overspent by \$430,000 or 7.7% year-to-date. Material purchases are greater than budgeted by \$467,000 and services are underspent \$36,000 mainly due to timing.

## Other Materials

Other Materials are higher than budget by \$98,000 or 13.3% due to timing of computer hardware purchases, lab and testing supplies, and work clothes offset by lower than projected spending on other materials.

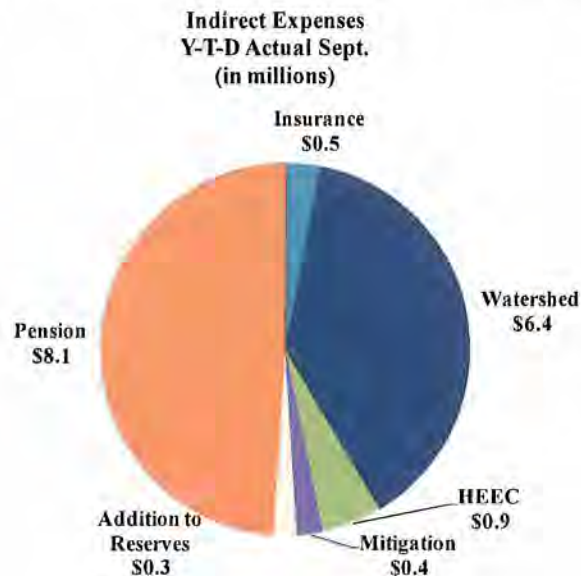
## Chemicals

Chemicals are overspent by \$74,000 or 2.6% year-to-date. The majority of the variance is attributable to higher spending on Soda Ash offset by lower than budgeted spending for Nitrazyme.



## Indirect Expenses

Indirect Expenses in FY13 totaled \$16.6 million, \$278,000 or 1.7% less than budget.

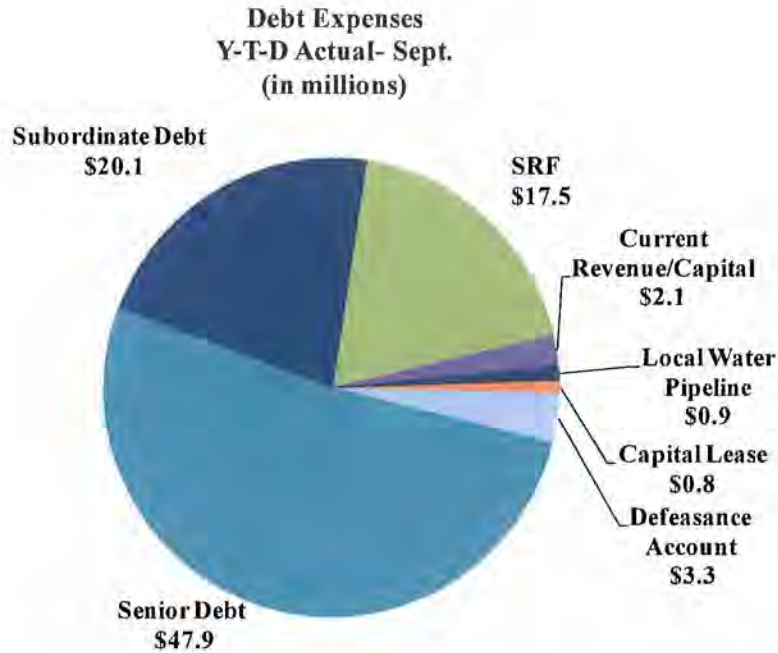




The majority of the year-to-date underspending on Indirect Expenses is for watershed expenses of \$233,000 due to an FY12 overaccrual and lower insurance expenses of \$30,000.

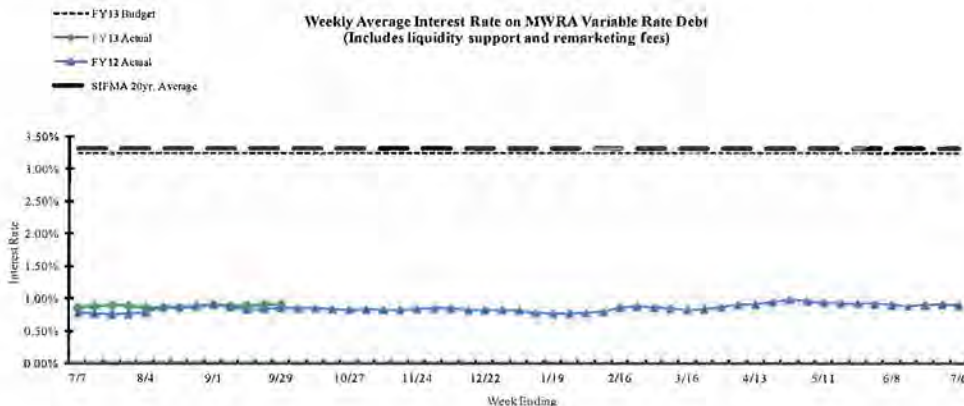
### Debt Service Expenses

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 September totaled \$92.5 million which is at budgeted levels after the transfer of \$3.3 million of a favorable year-to-date variance to the Defeasance Account established in FY12.

The graph below reflects the variable rate trend by month over the past year in comparison with FY12 Actuals and the FY13 Budget for the same period.



## **Revenue**

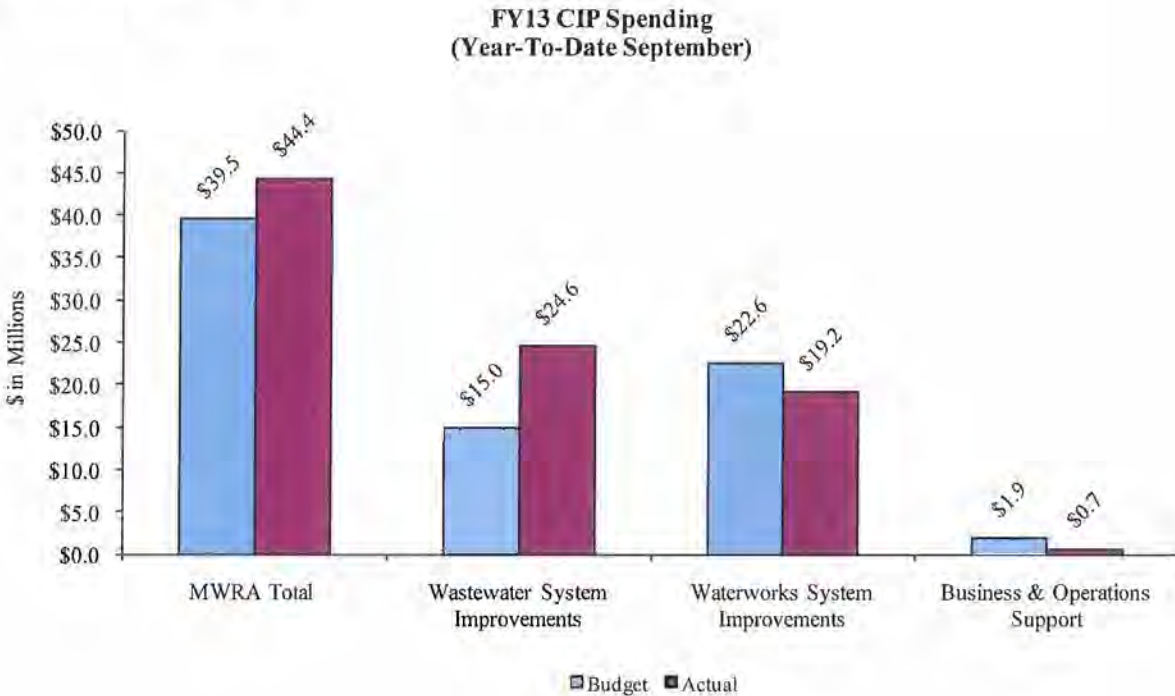
Total Revenue and Income for FY13 year-to-date total \$158.6 million, \$63,000 higher than budget due to higher other revenue of \$417,000 mainly for the Federal Emergency Management Agency (FEMA) reimbursement for Tropical Storm Irene costs offset by lower investment income of \$343,000 due to lower than budgeted short-term rates.

## FY13 Capital Improvement Program

Spending year-to-date in FY13 totals \$44.4 million, \$4.9 million or 12.4% higher than budget.

Overspending was reported in the Wastewater program of \$9.6 million offset by underspending in Waterworks of \$3.4 million and Business and Operations Support of \$1.3 million.

CIP Spending By Program:



\$ in Millions	Budget	Actuals	\$ Var.	% Var.
<b>Wastewater System Improvements</b>				
Interception & Pumping	608,824	-139,113	-747,937	-122.8%
Treatment	3,715,984	4,321,544	605,560	16.3%
Residuals	59,549	0	-59,549	-100.0%
CSO	7,549,339	1,028,365	-6,520,973	-86.4%
Other	3,020,722	19,342,456	16,321,735	540.3%
<b>Total Wastewater System Improvements</b>	<b>14,954,418</b>	<b>24,553,253</b>	<b>9,598,834</b>	<b>64.2%</b>
<b>Waterworks System Improvements</b>				
Drinking Water Quality Improvements	10,554,070	10,842,177	288,108	2.7%
Transmission	3,708,254	4,372,025	663,771	17.9%
Distribution & Pumping	2,236,611	1,535,133	-701,477	-31.4%
Other	6,108,378	2,426,763	-3,681,614	-60.3%
<b>Total Waterworks System Improvements</b>	<b>22,607,313</b>	<b>19,176,100</b>	<b>-3,431,212</b>	<b>-15.2%</b>
<b>Business &amp; Operations Support</b>	<b>1,919,020</b>	<b>664,264</b>	<b>-1,254,755</b>	<b>-65.4%</b>
<b>Total MWRA</b>	<b>39,480,751</b>	<b>44,393,618</b>	<b>4,912,867</b>	<b>12.4%</b>

The main reasons for FY13 overspending were:

1. Wastewater Other of \$16.3 million – Inflow and Infiltration (I/I) due to community requests for grants and loans being greater than budgeted.
2. Water Transmission of \$664,000 – mainly due to higher than budgeted spending on Upper Hultman of \$1.1 million due to accelerated contractor progress offset by lower than projected spending on the Lower Hultman project of \$570,000.
3. Wastewater Treatment of \$606,000 - due to greater than budgeted work on the Clinton Aeration Efficiency project, Digester Modifications 1 & 2 Pipe Replacement, and Metals Lab Fume Hood replacement offset by lower award and delay for North Main Pump Station Variable Frequency Drive Construction and project delays such as the Fuel Pipe Abandonment and Primary/Secondary Clarifier Rehabilitation due to delayed receipt of final invoice.

The overspending was offset by underspending of \$6.5 million in the Combined Sewer Overflow (CSO) program due to the timing of the payments for the Cambridge Sewer Separation project of \$6.0 million which was originally budgeted for September but will now occur in November and for North Dorchester Bay of \$409,000 mainly for less than anticipated Construction Management Services on the Tunnel & Facilities. Additional underspending was exhibited in Interception and Pumping due to a net reimbursement for Melrose work of \$654,000 and in Distribution and Pumping due to Lynnfield Pipeline of \$312,000 due to differing site conditions, Southern Spine Distribution Mains of \$286,000 mainly due to pending credit change order on Section 107 Phase 2 Construction, and Valve Replacement Construction 7 of \$85,000 due to summertime water system constraints.

### **Construction Fund Balance**

The construction fund balance was at \$192 million as of September 2012. Commercial Paper availability was at \$206 million to fund construction projects.

- Attachment 1 – Variance Summary September 2012
- Attachment 2 – Current Expense Variance Explanations
- Attachment 3 – Capital Improvement Program Variance Explanations

ATTACHMENT 1

	September 2012 Year-to-Date					
	Period 3 YTD Budget	Period 3 YTD Actual	Period 3 YTD Variance	%	FY13 Approved	% Expended
<b>EXPENSES</b>						
WAGES AND SALARIES	\$ 21,797,683	\$ 21,238,844	\$ (558,839)	-2.6%	\$ 94,059,400	22.6%
OVERTIME	825,202	839,102	13,900	1.7%	3,573,495	23.5%
FRINGE BENEFITS	4,525,228	4,400,098	(125,130)	-2.8%	18,241,926	24.1%
WORKERS' COMPENSATION	525,000	457,065	(67,935)	-12.9%	2,100,000	21.8%
CHEMICALS	2,883,650	2,958,004	74,354	2.6%	9,963,496	29.7%
ENERGY AND UTILITIES	4,742,720	4,786,815	44,095	0.9%	23,127,198	20.7%
MAINTENANCE	5,586,110	6,016,493	430,383	7.7%	28,229,070	21.3%
TRAINING AND MEETINGS	120,083	33,577	(86,506)	-72.0%	385,617	8.7%
PROFESSIONAL SERVICES	1,409,238	1,328,605	(80,633)	-5.7%	5,900,785	22.5%
OTHER MATERIALS	732,999	830,715	97,716	13.3%	5,591,291	14.9%
OTHER SERVICES	6,125,607	5,774,388	(351,219)	-5.7%	23,743,608	24.3%
<b>TOTAL DIRECT EXPENSES</b>	<b>\$ 49,273,520</b>	<b>\$ 48,663,706</b>	<b>\$ (609,813)</b>	<b>-1.2%</b>	<b>\$ 214,915,886</b>	<b>22.6%</b>
INSURANCE	\$ 524,469	\$ 494,365	\$ (30,104)	-5.7%	\$ 2,097,875	23.6%
WATERSHED/PILOT	6,603,294	6,369,801	(233,493)	-3.5%	26,413,175	24.1%
BECo PAYMENT	891,824	875,520	(16,304)	-1.8%	3,741,915	23.4%
MITIGATION	391,731	377,138	(14,593)	-3.7%	1,566,923	24.1%
ADDITIONS TO RESERVES	349,582	349,582	-	0.0%	1,398,329	25.0%
RETIREMENT FUND	8,112,230	8,128,101	15,871	0.2%	10,474,376	77.6%
POST EMPLOYEE BENEFITS	-	-	-	-	-	-
<b>TOTAL INDIRECT EXPENSES</b>	<b>\$ 16,873,130</b>	<b>\$ 16,594,507</b>	<b>\$ (278,623)</b>	<b>-1.7%</b>	<b>\$ 45,692,593</b>	<b>36.3%</b>
DEBT SERVICE	\$ 92,542,541	\$ 92,542,541	\$ -	0.0%	\$ 375,248,070	24.7%
DEBT SERVICE ASSISTANCE	(87,500)	(87,500)	-	0.0%	-	-
<b>TOTAL DEBT SERVICE</b>	<b>\$ 92,455,041</b>	<b>\$ 92,455,041</b>	<b>\$ -</b>	<b>0.0%</b>	<b>\$ 375,248,070</b>	<b>24.7%</b>
<b>TOTAL EXPENSES</b>	<b>\$ 158,601,691</b>	<b>\$ 157,713,254</b>	<b>\$ (888,435)</b>	<b>-0.6%</b>	<b>\$ 635,856,549</b>	<b>24.8%</b>
<b>REVENUE &amp; INCOME</b>						
RATE REVENUE	\$ 151,878,000	\$ 151,878,000	\$ -	0.0%	\$ 607,512,000	25.0%
OTHER USER CHARGES	1,998,533	1,986,906	(11,627)	-0.6%	7,766,692	25.6%
OTHER REVENUE	916,795	1,333,678	416,883	45.5%	6,116,845	21.8%
RATE STABILIZATION	-	-	-	-	-	-
INVESTMENT INCOME	3,765,736	3,423,115	(342,621)	-9.1%	14,461,012	23.7%
<b>TOTAL REVENUE &amp; INCOME</b>	<b>\$ 158,559,064</b>	<b>\$ 158,621,699</b>	<b>\$ 62,636</b>	<b>0.0%</b>	<b>\$ 635,856,549</b>	<b>24.9%</b>

**ATTACHMENT 2  
Current Expense Variance Explanations**

Total MWRA	FY13 Budget YTD September	FY13 Actuals YTD September	FY13 YTD Actual vs. FY13 Budget		Explanations
			\$	%	
<b>Direct Expenses</b>					
Wages & Salaries	21,797,683	21,238,844	(558,839)	-2.6%	Underspending is due to lower headcount and employees on unpaid leave status. As of September, the average filled positions were 1,179, 16 positions less than the 1,195 funded positions.
Overtime	825,202	839,102	13,900	1.7%	Overspending in Field Operations of \$21,000 and Eng & Construction of \$11,000 offset by lower spending at Deer Island of \$8,000 and Lab Services of \$4,000.
Fringe Benefits	4,525,228	4,400,098	(125,130)	-2.8%	Underspending for Health Insurance of \$108k and Medicare of \$19k mainly due to lower headcount.
Worker's Compensation	525,000	457,065	(67,935)	-12.9%	Underspending due to lower payments of \$43k and lower reserves of \$25k.
Chemicals	2,883,650	2,958,004	74,354	2.6%	Overspending for Soda Ash of \$131k, Hydrogen Peroxide of \$28k, and Copper Sulfate of \$24k offset by lower spending for Nitrazyme of \$66k and Carbon Dioxide of \$23k.
Utilities	4,742,720	4,786,815	44,095	0.9%	Overspending for Electricity of \$67k mainly at Deer Island offset by underspending of \$31k for diesel.
Maintenance	5,586,110	6,016,493	430,383	7.7%	Maintenance Materials are overspent by \$467k offset by underspending for Services of \$36k.
Training & Meetings	120,083	33,577	(86,506)	-72.0%	Underspending in all divisions related to timing.
Professional Services	1,409,238	1,328,605	(80,633)	-5.7%	Underspending for Lab & Testing Analysis of \$52k mostly due to delayed Harbor Outfall Monitoring initiatives and Legal services of \$23k.
Other Materials	732,999	830,715	97,716	13.3%	Overspending for Computer Hardware of \$95k, Lab & Testing Supplies of \$45k, and Work Clothes of \$43k mainly due to timing. Offset by lower spending for Other Materials of \$46k due to timing of gravel purchases at Clinton.

**ATTACHMENT 2**  
**Current Expense Variance Explanations**

Total MWRA	FY13 Budget YTD September	FY13 Actuals YTD September	FY13 YTD Actual vs. FY13 Budget		Explanations
			\$	%	
Other Services	6,125,607	5,774,388	(351,219)	-5.7%	Underspending for Sludge Pelletization of \$299k due to lower quantities and Other Services of \$128k mainly due to the timing of remediation projects in Real Property. Offset by overspending for Membership/Dues of \$112k due to timing.
<b>Total Direct Expenses</b>	<b>49,273,520</b>	<b>48,663,706</b>	<b>(609,813)</b>	<b>-1.2%</b>	
<b>Indirect Expenses</b>					
Insurance	524,469	494,365	(30,104)	-5.7%	Underspending due to lower payments/claims of \$49k offset by higher premiums of \$19k.
Watershed/PILOT	6,603,294	6,369,801	(233,493)	-3.5%	Underspending for lower Watershed Reimbursement due to an FY12 overaccrual.
HEEC Payment	891,824	875,520	(16,304)	-1.8%	Underspending due to lower O&M charges of \$24k offset by higher Capacity Charges of \$8k.
Mitigation	391,731	377,138	(14,593)	-3.7%	Underspending due to lower mitigation charges.
Addition to Reserves	349,582	349,582	-	0.0%	
Pension Expense	8,112,230	8,128,101	15,871	0.2%	
Post Employee Benefits	-	-	-		
<b>Total Indirect Expenses</b>	<b>16,873,130</b>	<b>16,594,507</b>	<b>(278,623)</b>	<b>-1.7%</b>	
<b>Debt Service</b>					
Debt Service	92,542,540	92,542,540	-	0.0%	At the end of the first quarter, \$3.3 million of favorable variance related to lower than budgeted short-term rates was transferred to the Defeasance Account.
Debt Service Assistance	(87,500)	(87,500)	-	0.0%	
<b>Total Debt Service Expenses</b>	<b>92,455,040</b>	<b>92,455,040</b>	<b>-</b>	<b>0.0%</b>	
<b>Total Expenses</b>					
<b>Total Expenses</b>	<b>158,601,690</b>	<b>157,713,256</b>	<b>(888,436)</b>	<b>-0.6%</b>	
<b>Revenue &amp; Income</b>					
Rate Revenue	151,878,000	151,878,000	-	0.0%	

**ATTACHMENT 2**  
**Current Expense Variance Explanations**

Total MWRA	FY13 Budget YTD September	FY13 Actuals YTD September	FY13 YTD Actual vs. FY13 Budget		Explanations
			\$	%	
Other User Charges	1,998,533	1,986,906	(11,627)	-0.6%	Underspending mainly due to Deer Island Water usage.
Other Revenue	916,795	1,333,678	416,883	45.5%	Overspending due to higher Other Revenue of \$417,000 mainly for Federal Emergency Management Agency (FEMA) reimbursement of Tropical Storm Irene costs of \$264,000, higher Miscellaneous Revenue of \$83,000, and Energy Revenue of \$41,000.
Rate Stabilization	-	-	-		
Investment Income	3,765,736	3,423,115	(342,621)	-9.1%	Lower investment income mainly due to lower than budgeted short-term interest rates.
<b>Total Revenue</b>	<b>158,559,064</b>	<b>158,621,699</b>	<b>62,636</b>	<b>0.0%</b>	
<b>Net Revenue in Excess of Expenses</b>	<b>(42,626)</b>	<b>908,443</b>	<b>951,072</b>		



**ATTACHMENT 3**  
**Capital Improvement Program Variance Explanations**

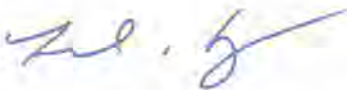
	FY13 Budget YTD September	FY13 Actuals YTD September	YTD Actuals vs. Budget		Explanations
			\$	%	
Interception & Pumping (I&P)	\$609	(\$139)	(\$748)	-122.8%	Underspending for Melrose Sewer reimbursement of \$654,000 for prior year's contractual obligations and North System Hydraulic Systems of \$109,000 due to delays.
Treatment	\$3,716	\$4,322	\$606	16.3%	Overspending for Clinton Aeration Efficiency work of \$692,000, Digester Modifications 1&2 of \$328,000, and Metals Lab Fume Hood Replacement of \$148,00 due to greater contractor progress. Offset by underspending due to longer than anticipated lead time for specialized equipment for the North Main Pump Station VFD Replacement Construction of \$602,000 and delays in Fuel Pipe Abandonment project of \$167,000.
Residuals	\$60	\$0	(\$60)	-100.0%	
CSO	\$7,549	\$1,028	(\$6,521)	-86.4%	Underspending on Cambridge Sewer Separation of \$6.0 million mainly due to timing of payments and North Dorchester Bay of \$409,000 mainly for less than anticipated Construction Management Services on the Tunnel & Facilities.
Other Wastewater	\$3,021	\$19,342	\$16,322	540.3%	Overspending on Inflow and Infiltration (I/I) due to community requests for grants and loans being greater than budgeted.
<b>Total Wastewater</b>	<b>\$14,954</b>	<b>\$24,554</b>	<b>\$9,599</b>	<b>64.2%</b>	
Drinking Water Quality Improvements	\$10,554	\$10,842	\$288	2.7%	Overspending for Carroll Plant Ultraviolet Disinfection Construction of \$1.5M due to contractor progress. Offset by underspending for Spot Pond Storage Facility of \$805,000 primarily due to delayed start of excavation on Design/Build contract.
Transmission	\$3,708	\$4,372	\$664	17.9%	Overspending for the Upper Hultman rehabilitation work of \$1.1 million due to contractor progress and acceleration of the project. Offset by underspending on Lower Hultman rehabilitation work of \$570,000 due to timing of work.
Distribution & Pumping	\$2,237	\$1,539	(\$697)	-31.2%	Underspending on Lynnfield Pipeline of \$312,000 due to differing site conditions; Southern Spine Distribution Mains of \$286,000 mainly due to pending credit change order on Section 107 Phase 2 Construction; and Valve Replacement Construction 7 of \$85,000 due to summertime water system constraints. Offset by overspending on Weston Aqueduct Supply Mains of \$115,000 mainly for greater than budgeted work on Design/Construction Administration/Resident Inspection for Section 36.

**ATTACHMENT 3**  
**Capital Improvement Program Variance Explanations**

	FY13 Budget YTD September	FY13 Actuals YTD September	YTD Actuals vs. Budget		Explanations
			\$	%	
Other Waterworks	\$6,108	\$2,427	(\$3,682)	-60.3%	Underspending on Local Water Pipeline Assistance Program due to community requests for loans being less than budgeted by \$1.0M and repayments being greater than anticipated by \$2.7M.
<b>Total Waterworks</b>	<b>\$22,607</b>	<b>\$19,180</b>	<b>(\$3,427)</b>	<b>-15.2%</b>	
Business & Operations Support	\$1,919	\$664	(\$1,255)	-65.4%	Underspending due to MIS related projects of \$634,000 due to timing of IT Strategic Plan implementation, Centralized Equipment Purchases of \$408,000 mainly due to timing of vehicle purchases, and Alternative Energy Initiatives of \$222,000.
<b>Total MWRA</b>	<b>\$39,481</b>	<b>\$44,398</b>	<b>\$4,917</b>	<b>12.5%</b>	

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### STAFF SUMMARY

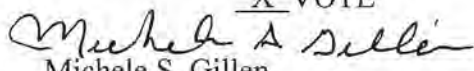
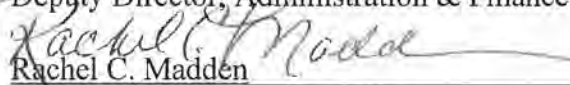
**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** October 17, 2012  
**SUBJECT:** Sole Source Purchase Order for Professional Services to Implement eProcurement Modules  
Infor Global Solutions (formerly Lawson Associates, Inc.)

**COMMITTEE:** Administration, Finance, & Audit

     INFORMATION

VOTE

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

  
Michele S. Gillen  
Deputy Director, Administration & Finance  
  
Rachel C. Madden  
Director, Administration & Finance

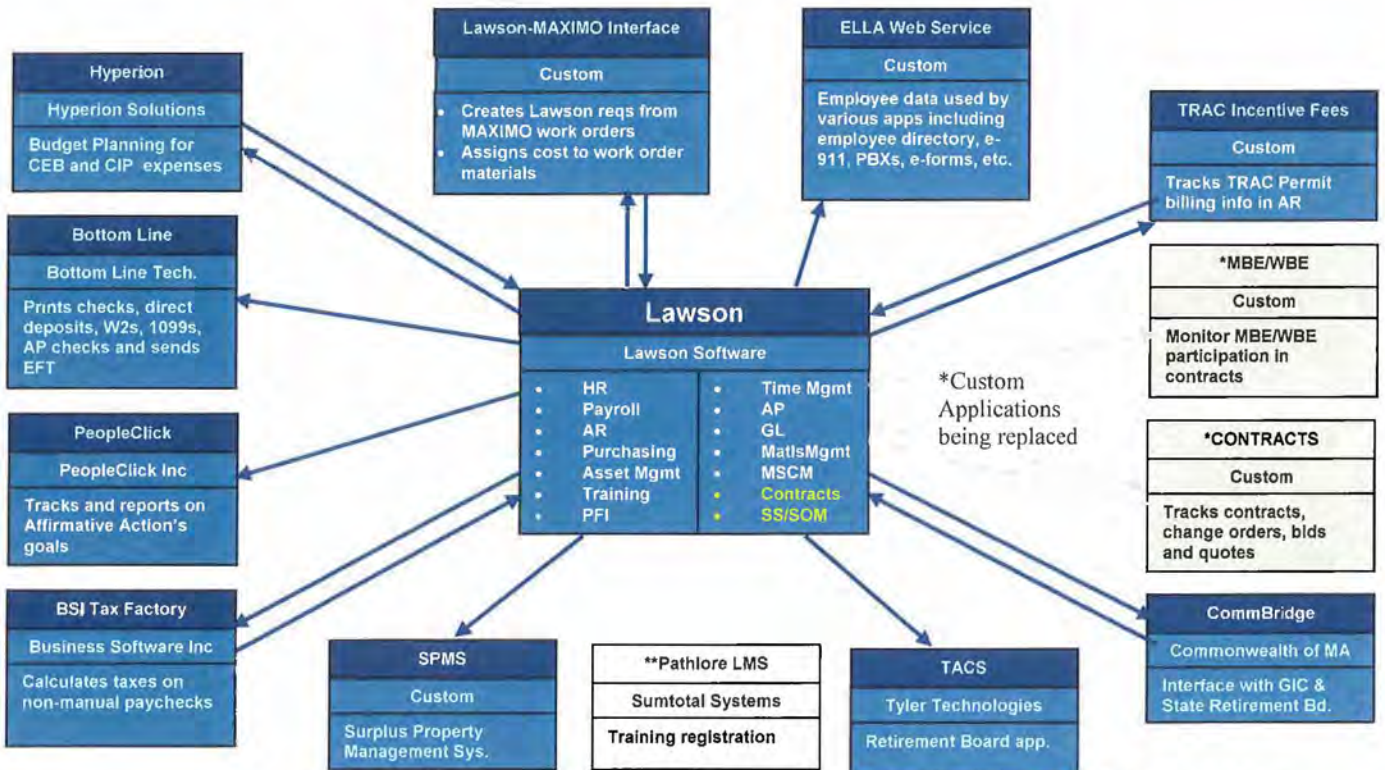
### RECOMMENDATION:

To approve the award of a sole source purchase order for professional services to implement three eProcurement modules (Contract Management, Strategic Sourcing and Supplier Order Management), which were previously approved by the Board for procurement in April of 2012 as part of the Integrated Financial, Procurement and Human Resources/Payroll Management System Maintenance and Support contract, 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 \$276,701.

### DISCUSSION:

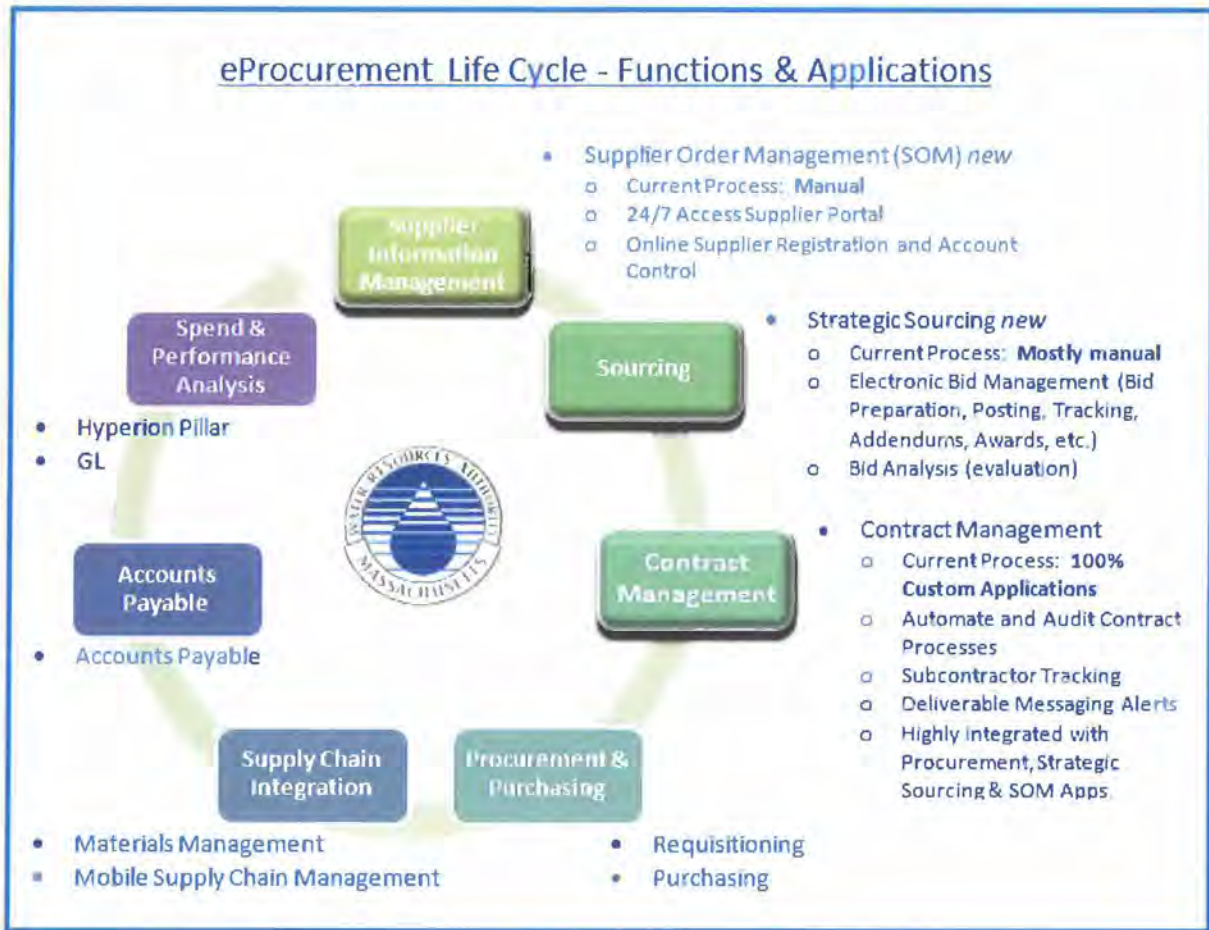
On March 24, 1999, the Board of Directors approved Contract 6362 with Lawson Associates (now Infor Global Solutions) to implement an integrated financial and procurement management system. In May 2000, the implementation of a Human Resources/Payroll module was included as part of the Lawson program. Today this set of application modules represents the core functionality for the MWRA in a majority of administrative and financial management areas including 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 further reducing the need for paper records. The illustration on the next page details the various modules being used and the programs which interface and are dependent on the Lawson system.

## Lawson Dependent Systems



\*\*Previously retired as a result of enhancements to the Lawson training module made available through ongoing maintenance upgrades.

As part of an effort to reduce the use of customized applications and use more off-the-shelf products wherever possible, the MWRA is implementing Lawson's Contracts Management, Strategic Sourcing, and Supplier Order Management modules. These new modules offer more functionality and integration with other Lawson modules and will allow us to retire our completely custom Contract Management and Minority and Women Owned Business Enterprise applications. As recommended in the MIS 5-Year Strategic Plan, the new modules facilitate the move to the eProcurement process, as shown on the following page, with fully integrated commercial-off-the-shelf applications which will also support MWRA's paper reduction efforts.



As indicated in the illustration above, the eProcurement cycle will be completed by replacing manual and partially automated processes using the Supplier Order Management (SOM) and Strategic Sourcing application modules. The current printing, faxing, mailing and phone processes will be replaced through on-line registration, alerts, and self service. The Strategic Sourcing/SOM modules will:

- Give suppliers around-the-clock access to bid invitation details and the bid submission process through a secure supplier portal;
- Foster broader supplier participation, potentially improving the quality of responses and stimulate greater competition;
- Provide an easier, faster means of creating bid requests, sending them to suppliers, analyzing responses, and awarding bids including automatically generating online requests based on requisitions;
- Eliminate many paper-based request-for-bid components through online notifications, bidding, negotiations, and responses to supplier inquiries; and
- Reduce the need for meetings and phone calls by automating relationship management.

In addition, replacing the 100% customized legacy Contract Management and Minority and Women Business Enterprise applications with a fully integrated and more robust commercial-

off-the-shelf application will save the MWRA from having to redesign and rebuild the custom applications using newer more modern programming tools. These custom applications utilize obsolete legacy programming environments which necessitate their replacement regardless. This conversion of customized stand-alone applications to a fully integrated system of record was recommended as part of the MIS 5-Year Strategic Plan completed earlier this year. Current paper intensive and manual processes can be improved with the new application. The Contract Management Module will:

- Replace custom applications;
- Provide secure, centralized access to, and easy audit capabilities of all procurement and non-procurement contracts - not only contracts but also attachments, such as files and images accessible by authorized users;
- Provide alerts for key contract events;
- Update the vendor master in Lawson Procurement and Financial modules with new supplier information more timely; and
- Provide a workflow engine with built-in security controls set up according to each person's role and responsibilities that enables internal electronic routing to the appropriate people for review, edits, and comments.

Furthermore, these modules are fully integrated with existing Infor/Lawson modules eliminating the need for application interfaces maintained today as well as duplicate data entry where interfaces do not exist.

#### Approach

To successfully implement the new applications/modules, a time and materials contract for consulting services and training from Lawson Professional Services is recommended. Lawson has the application knowledge and a project implementation methodology which they have used with other customers to successfully execute these types of projects. They are actively engaged in a similar implementation project at the DC Water and Sewer Authority. Lawson consulting services resources have the most extensive hands-on experience with their software.

It is anticipated that the Strategic Sourcing module will be in production by the 3<sup>rd</sup> quarter of FY13 and Contract Management by the first quarter of FY14. The Process Flow Integrator module will be used in both implementations to enhance the workflow and approval processes.

#### Procurement Costs

The quoted amount of \$276,701 includes the required professional services from Infor Global Solutions formerly Lawson Professional Services and 15% in contingency and miscellaneous expenses.

Staff from the Purchasing Unit and the MIS Department concur with the above recommendation and support the proposed implementation.

**BUDGET/FISCAL IMPACT:**

Based on the recommended purchase order expense of \$276,701, the FY13 Current Expense Budget includes funding for this purchase under the Professional Services. The eProcurement initiative will produce annual savings through reduced postage and the more efficient use of staffing resources by eliminating manual processes such as data entry and bid documents assembly, etc.

**MBE/WBE PARTICIPATION:**

Infor Global Solutions (formerly Lawson Associates, Inc.) is not a certified Minority- or Woman-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

## WASTEWATER POLICY & OVERSIGHT COMMITTEE MEETING

*Chair:* J. Foti  
*Vice-Chair:* J. Walsh  
*Committee Members:*  
J. Carroll  
M. Gove  
A. Pappastergion

to be held on

Wednesday, October 17, 2012

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

Time: Immediately following AF&A Committee

### AGENDA

#### **A. Information**

1. Pretreatment Program Annual Industrial Waste Report Number 28
2. Report on Incident at the Pelletizing Plant in Quincy
3. Update on Residuals Processing Facilities - Technology Options Assessment, Contract 7147A

#### **B. Contract Awards**

1. Technical Assistance Consulting Services, Deer Island Treatment Plant: AECOM Technical Services Inc., Contract 7399; Fay, Spofford & Thorndike, LLC, Contract 7400; and Brown and Caldwell, Contract 7434



MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the  
Wastewater Policy and Oversight Committee

September 12, 2012

A meeting of the Wastewater Policy and Oversight Committee was held on September 12, 2012 at the Authority headquarters in Charlestown. Chairman Foti presided. Present from the Board were Messrs. Cotter, Mannering, Swett and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Mike Hornbrook, Dan O'Brien, and Bonnie Hale. The meeting was called to order at 12:15 p.m.

**Contract Awards**

The Committee recommended approval of the following two contract awards:

\*Struvite, Scum, Sludge, and Grit Removal Services at the Deer Island Treatment Plant: Clean Harbors Environmental Services, Bid WRA-3513

(ref. agenda item A.1).

\*Concrete/Steel Restoration and Coating Phase IV, Deer Island Treatment Plant: Atlas Painting and Sheeting Co., Contract S513

(ref. agenda item A.2).

\*\*Technical Assistance Consulting Services, Deer Island Treatment Plant: AECOM Technical Services, Inc., Contract 7399; Fay, Spofford & Thorndike, Inc., Contract 7400; and Dewberry Engineers, Inc., Contract 7434

This item was withdrawn from consideration and postponed until the next meeting (ref. agenda item A.3).

The meeting adjourned at 12:20 p.m.

\* Approved as recommended at September 12, 2012 Board of Directors meeting.

\*\* Withdrawn/postponed at September 12, 2012 Board of Directors meeting.

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**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** October 17, 2012  
**SUBJECT:** MWRA Industrial Waste Report #28: Industrial Pretreatment Program Annual Report to EPA for FY12

COMMITTEE: Wastewater Policy & Oversight

X INFORMATION  
     VOTE

Richard P. Trubiano, Deputy Chief Operating Officer  
Carolyn M. Fiore, Director, TRAC  
Preparer/Title

  
Michael J. Hornbrook  
Chief Operating Officer

**RECOMMENDATION:**

For information only. MWRA is required by its NPDES Permits and EPA regulations (40 CFR 403.12(i)) to submit an annual report to EPA each year that describes the activities and accomplishments of MWRA's Industrial Pretreatment Program. Staff will be submitting the FY12 Annual Report (Industrial Waste Report #28) to EPA on or before October 31, 2012, the required submittal deadline. This staff summary discusses some of the highlights from the report. A draft copy of the report will be available for review at the Board meeting.

**DISCUSSION:**

Industrial Waste Report #28 documents MWRA's efforts to control current permitted sewer users during FY12. MWRA's Toxic Reduction and Control (TRAC) section operates the Industrial Pretreatment Program to control the level of toxic substances discharged into the sanitary sewer system from commercial and industrial sources. Through permits, inspections, sampling, and enforcement, the program keeps excessive levels of toxics out of the sanitary sewer system to: protect worker health and safety; protect municipal and MWRA infrastructure; prevent interference at the Deer Island and Clinton Wastewater Treatment Plants; prevent the pass-through of pollutants into receiving waters; and enable MWRA to beneficially reuse its residuals for the production of fertilizer.

Staff estimate that approximately 3% of the total flow to the treatment plants comes from permitted facilities, but this flow represents a significantly higher proportion of toxics discharged to the system. TRAC currently oversees approximately 1,282 permitted sewer users (See Attachment 1 for a map of the facilities discharging in MWRA's Metropolitan Sewerage Service Area). During FY12, 213 facilities met MWRA's definition of Significant Industrial User. Significant Industrial Users require substantial oversight due to the nature of the pollutants they

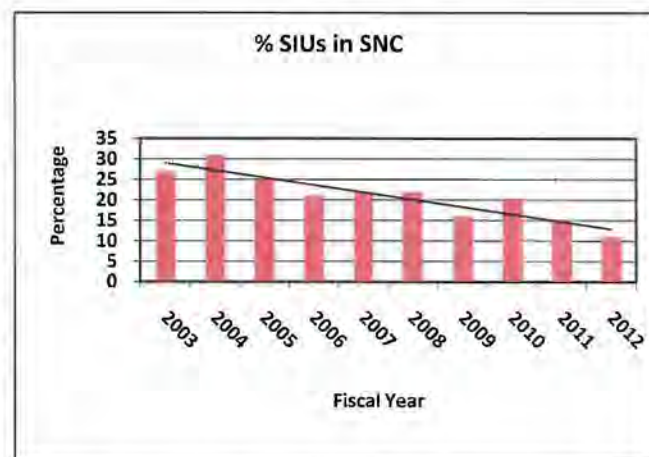
discharge and/or the size of their flows. Some of the highlights included in the report are described in the following pages.

### Significant Industrial Users

As mentioned above, there were 213 industries designated as Significant Industrial Users (SIUs) in MWRA's sewer service areas during FY12; at the end of the fiscal year, the number of SIUs was 204 (the total number can vary during the year). TRAC met EPA's requirements for inspections and sampling in FY12. Staff inspected all of the 213 SIUs and sampled all of the 184 SIUs with flow during the year; 29 SIUs were not sampled because they did not discharge during the year<sup>1</sup> or were re-categorized as non-SIUs before they could be sampled.

TRAC issued 86 permits to SIUs, of which 86% were issued within 120 days of permit expiration and 97% within 180 days, compared to permit issuance requirements of 90% within 120 days and 100% within 180 days. A small number of SIU permits were issued beyond 180 days due to staff turnover and the time necessary to acquire and consider information to correctly permit facilities that made modifications. Facilities remain covered by their existing permits while their renewal permits are pending. There are typically a few permits every year that are not renewed within required time frames.

This year, the total number of SIUs in Significant Noncompliance was 23 (compared to 33 in FY11). As can be seen in the figure to the right, the trend in the percentage of SIUs in Significant Noncompliance has been downward over the past ten years. Significant Noncompliance is defined in EPA's and MWRA's regulations as various categories of violations that meet very specific criteria. For example, a facility can be in Significant Noncompliance for a single discharge violation in a six-month period if that was the only sample collected during the period because the application of the criteria result in the finding that 100% of the samples collected were in violation. There are a variety of other criteria that can result in this designation, which is evaluated quarterly for overlapping six-month periods.



In the last quarter of FY12, the number of SIUs in Significant Noncompliance was six, indicating that 17 of the facilities designated earlier in the year were no longer in Significant Noncompliance. MWRA continues to hold annual educational meetings with SIUs to review and reinforce methods for staying in compliance. The FY12 meetings were held in April 2012

<sup>1</sup> Non-discharging facilities include those that operate a federally-regulated process with a discharge that is either hauled or evaporated on site. Such facilities are permitted by MWRA as Category 4 SIUs. MWRA annually inspects these facilities but does not sample wastewater that is not discharged to its sewer system. There were other SIUs that did not discharge while undergoing renovations.

and included tours of the MWRA's NEFCO Pelletizing Plant; approximately 55 of the 213 SIUs sent 90 representatives to these meetings. Staff believe that the continuing drop of industries in Significant Noncompliance is due to a variety of factors, including education with respect to the rules, and increased monitoring required when violations do occur.

### Inspections and Monitoring Programs

In addition to paying close attention to the SIUs, TRAC staff are responsible for permitting, inspecting and monitoring a variety of other types of facilities to minimize the discharge of toxics to the sewer and assist other MWRA programs. In FY12, TRAC staff conducted an additional 669 industrial/commercial facility inspections, 158 inspections associated with the septage program, and 715 inspections of oil/water separators. TRAC's monitoring staff conducted an additional 1,846 sampling events to characterize wastewater flow from non-SIU permitted facilities, to support MWRA's NPDES permits and other MWRA projects, and to evaluate discharges to the sewer in response to emergencies.



NPDES Permit Sampling in Clinton

### Enforcement Program

In FY12, TRAC issued a total of 235 early enforcement actions (Notices of Violations and Traps Warning Letters) to industrial and commercial facilities (down from 289 in FY11), and 41 higher-level enforcement actions (Orders and Penalty Assessment Notices) issued in response to a variety of persistent discharge and reporting violations, compared to 66 in FY11.

In FY12, TRAC assessed a total of \$180,300 in penalties against permitted sewer users (compared to \$10,500 assessed in FY11). Three SIUs were assessed penalties totaling \$178,800 while three non-SIUs were assessed penalties totaling \$1,500. MWRA collected a total of \$75,550<sup>2</sup> (compared to \$149,325 collected in FY11). The amount of penalties assessed and collected can vary significantly from year to year depending on the significance of violations that occur and each individual facility's enforcement history. MWRA's EPA-approved Enforcement Response Plan is based on system of escalating enforcement, with the goal of bringing facilities back into compliance as quickly as possible. When violations continue after a facility has received a Notice of Noncompliance or other Compliance Schedule, penalties are an appropriate next step. The number of facilities with continuing issues varies year to year, and thus the assessment of penalties also varies. The drop in the number of facilities in significant noncompliance continues to impact the assessment of penalties.

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<sup>2</sup> Only some of the penalties assessed in FY12 were actually settled and collected during FY12; some amounts are still outstanding due to ongoing administrative enforcement procedures and settlement discussions.

## FY12 Initiatives

Staff have begun a regulatory required review of the local limits applicable to the facilities in the Clinton service area and expect to undertake a similar review for the Deer Island service area when a draft permit is received. These reviews will be required under the National Pollution Discharge Elimination System (NPDES) permit renewals for the Clinton and Deer Island Wastewater Treatment Plants.

TRAC staff continue to utilize the Pretreatment Information Management System (PIMS) software to schedule and track work, as well as to draft permits and track permit requirements. Sampling required by permits is entered into the PIMS system through a reporting portal by permittees' contract laboratories. This electronic reporting system is subject to EPA's Cross Media Electronic Reporting Rule (CROMERR) and as such, needs to be upgraded to meet the requirements of the rule. TRAC staff are working closely with MIS staff to have the system upgraded to meet these requirements. This approach will need to be approved by EPA.

Operations Division staff will review the current Incentive and Other Charges program in fiscal years 2013 and 2014 to determine if changes to it can enhance cost recovery of TRAC's expenses. Changes, if any, will be required to undergo public notice and review, and will require changes to the Sewer Use Regulations, all requiring Board approval.

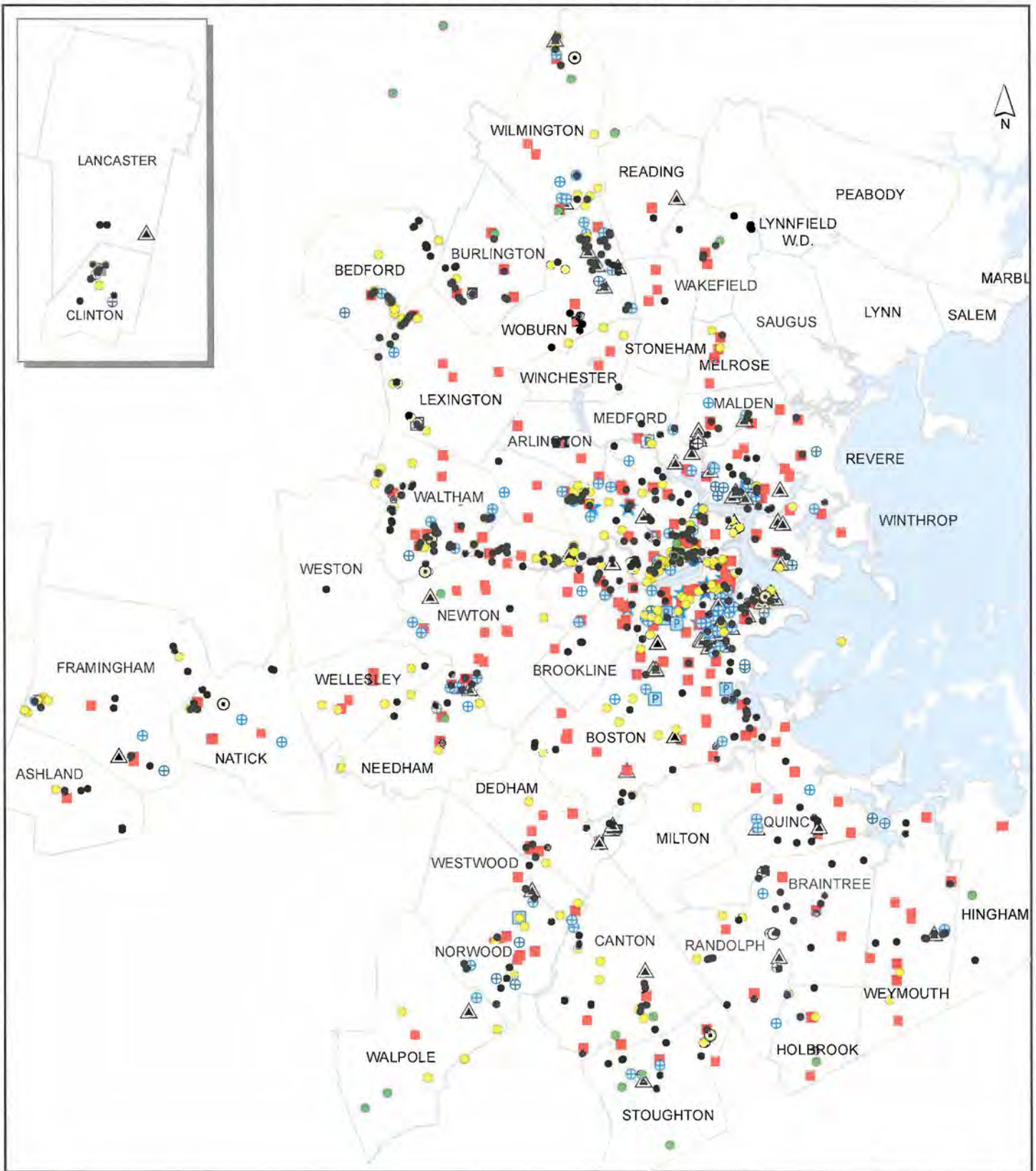
### **BUDGET/FISCAL IMPACT:**

TRAC's FY12 Current Expense Budget was \$3,546,689, approximately 64% of which was recovered through permit charges and penalty collections, compared to 61% in FY11. TRAC FY13 charges remain at the FY12 rates (after 3 years of Board-approved 4.5% across-the-board increases in each of Fiscal Years 2010, 2011, and 2012). Charges will remain at the 2012 rates until modified by changes to the regulations, as described above.

MWRA's Incentive and Other Charges Program continues to recover a substantial portion of MWRA's costs of inspecting, monitoring, and permitting industrial sewer users. The total amount billed under the program in FY12 was \$2,218,537. As of October 2012, collections for the FY12 bills were at \$2,190,477 (compared to \$1,977,625 in FY11), approximately a 99% recovery of the adjusted amount invoiced.

### **ATTACHMENT 1: Map of Permitted Facilities Discharging to MWRA**


# Attachment 1 Permitted Facilities Discharging to MWRA



- |   |  |   |   |
|---|--|---|---|
| ⊕ | Facilities requiring pretreatment                        | ★ | Construction dewatering in CSO areas  |
| ● | Facilities with pollutants but pretreatment not required | Ⓟ | Facilities with photo/printing operations & Low flow/Low pollutant discharges |
| ⊙ | Facilities with discharges with no pollutants            | ■ | Photo developing/printing facilities  |
| ● | Septage Haulers  | ⚠ | Food processing facilities  |
| ● | Low flow/Low pollutants facilities                       | □ | Member Communities  |

W.A.2  
10/17/12


**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** October 17, 2012  
**SUBJECT:** Report on Incident at the Pelletizing Plant in Quincy

COMMITTEE: Wastewater Policy & Oversight

INFORMATION  
 VOTE

Carl Pawlowski, Manager, Residuals Operations  
Daniel K. O'Brien, PE, Director, Deer Island WWTP  
Preparer/Title

  
Michael J. Hornbrook  
Chief Operating Officer

*On September 13, 2012, there was a small fire in one of the dryer trains at the Pelletizing Plant in Quincy resulting in minor equipment damage and response by the Quincy Fire Department. Normal plant operation resumed within 72 hours with the approval of the Quincy Fire Chief. This staff summary provides an overview of the cause, response, and follow-up actions associated with this event.*

**RECOMMENDATION:**

For information only.

**SUMMARY:**

On September 13, 2012, plant staff responded to an alarm at the Pelletizing Plant indicating a problem in Dryer Train 5 and observed smoke emanating from the discharge area of the equipment. Quincy Fire Department was called and responded within two minutes. A small fire, caused by a build-up of pellets on a horizontal slide gate surface of Dryer Train 5 that overheated, was extinguished in approximately 15 minutes. Quincy Fire Department remained on-site for another two hours as a precaution and for observation. Equipment damage was minimal and normal operations resumed within 72 hours. (Note: In 2008, the facility experienced a fire of much greater scale in a different section of the plant. It occurred in the exhaust duct system and more extensive damage and a more significant fire department response compared to this event.)

**DISCUSSION:**

An analysis of the event has determined that the root cause of the fire was a build-up of stagnant pellets on the pellet cooler diverter gate. As pellets are produced, their size is monitored to ensure that they are within specification. Those pellets that are within specification continue through the production process, while those that are not get recycled back through the process. A certain percentage of recycled, out-of-spec pellets are always needed to support the production process; otherwise, more pellets need to be diverted.

There is normally a bit of build-up/spillage on the cooler diverter gate surface that clears when the gate is activated to replenish the recycle bin. During the week of September 13, the pelletizing recycle needs were met so that the diverter gate was never opened. Staff believe that a build-up of moist pellet material began to self-heat and the resultant smoldering eventually ignited. The picture to the right depicts some of the charred residual pellet material.



The fire then expanded in two directions - upwards through the pellet discharge chute igniting the pellets in the screener and also into the pellet cooler. The rising temperature resulted in a pressure wave that followed the air flow and path of least resistance through the solids recycle system. It travelled from the pellet cooler, down the pellet cooler overflow chute, and up the recycle bin conveyor. When the pressure wave reached the recycle bin, the rise in pressure caused the Fenwal<sup>®</sup> fire suppression system to discharge, as designed.

Any Fenwal discharge results in a train emergency stop situation leaving equipment full of dry product. The remaining pellets in the product discharge area of the stopped screener continued to burn until extinguished.

**Impacts to Operations and Facility Damage**

There was only minor equipment damage sustained and minimal impact to operations. The screener equipment at the end of Dryer Train 5 sustained minor damage to its internal tray system (pictured below – left picture is of entire screener assembly; to the right is the internal screen with cover removed). As the screener was scheduled for maintenance as part of Train 5’s service/maintenance shutdown, this damage has little financial or operational impact.





In addition, rubber discharge cones also melted, as depicted in the picture to the right.

No other equipment damage is apparent at this time.

The facility was shut down in response to this event and re-opened on the following Monday with the approval of the Quincy Fire Chief. Since the facility is normally off-line on weekends and has sufficient sludge storage capacity, there were no impacts to operations.



Although the Fenwal suppression system activated, the actual temperatures required to activate the sprinkler system were never reached. The Quincy Fire Department did apply water down the recycle bin conveyor, but little water damage resulted.

#### **Corrective Actions:**

A post-analysis of this event was conducted by MWRA staff and NEFCO and it was determined that this event was not in any way associated with a lack of or improper maintenance.

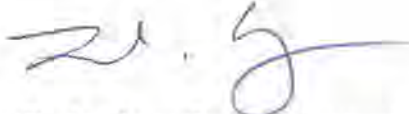
Staff have identified some measures that will be implemented immediately to prevent a similar occurrence. These include the following:

- Train 5 will remain shut down until its planned four to six-week major maintenance is completed; full inspections of all systems will be performed. It should be noted that the pellet cooler diverter gate has now been automated to cycle once per shift to prevent any build-up of pellets from self-heating. In addition, after each train is used, the diverter gate will be inspected and cleaned, if necessary (at the end of each week) in conjunction with the standard pellet cooler inspection and cleaning;
- NEFCO will examine the possibility of tying the Fenwal system into the main fire alarm control panel, if feasible. If there is a Fenwal discharge, then the panel should alarm triggering evacuation and automatic fire department response. Fire extinguishers will be permanently installed at the crusher deck and a water hose station will be installed at the screener deck; and
- The louvers on the west side of the building will be wired specifically for emergency use to improve smoke evacuation, as recommended by the Quincy Fire Department.

#### **BUDGET/FISCAL IMPACT:**

There is no budgetary impact to MWRA. All repairs, enhancements, and additional maintenance steps are the responsibility of NEFCO per contract.

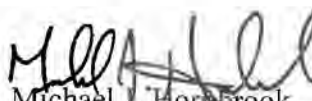
**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** October 17, 2012  
**SUBJECT:** Update on Residuals Processing Facilities - Technology Options Assessment  
Co-Digestion

COMMITTEE: Wastewater Policy & Oversight

X INFORMATION  
VOTE

John P. Vetere, Deputy Chief Operating Officer  
Daniel O'Brien, PE, Director, Deer Island WWTP  
Preparer/Title

  
Michael J. Hornbrook  
Chief Operating Officer

*MWRA currently has a contract with a private vendor, New England Fertilizer Company (NEFCo), to operate its Pelletizing Plant through 2015. In anticipation of the expiration of that contract, the Board approved the award of Contract 7147A, Residuals Processing Facilities – Technology Options Assessment, to CDM Smith, Inc. on June 27, 2012 in the amount of \$614,178. This study is scheduled to be complete in July 2013 with a goal of creating a shortlist of viable options to optimize MWRA's residuals processing facilities at Deer Island and in Quincy.*

*Staff plan to update the Board periodically on the progress of the project and will include discussions on various study-related topics. The topic of co-digestion is discussed in more detail in this staff summary.*

**RECOMMENDATION:**

For information only.

**BACKGROUND:**

Under MWRA's current residuals processing program, sludge generated as a by-product of the treatment process is subject to a series of additional handling steps before becoming a fertilizer product. These steps include thickening and digestion on Deer Island by MWRA, transport through the inter-island tunnel system and then dewatering and drying at the Pelletizing Plant in Quincy by NEFCo. Throughout these steps, the consistency of the sludge is changed and the volume handled is significantly reduced. One of the critical steps in this process train is digestion.

Digestion is a biological process in which naturally-occurring bacteria, under the proper conditions, break down organic matter in the waste stream. The principal byproducts of this process are a stabilized sludge and methane.

At Deer Island, egg-shaped digesters (as pictured to the right) play the key role in the digestion process. Sludge is held in these tanks for an average detention time of 18 days at 98 degrees F while being continuously mixed. As the organic (volatile) fraction of the sludge is “digested,” it releases methane gas, which is quite similar to natural gas in terms of heat value.



The gas is piped to Deer Island’s boiler operation, where the methane gas is used as fuel to create steam. The steam, in turn, is sent to the plant’s central heating loop after passing through a steam turbine (shown on the right), which generates electricity. The annual combined heat and power value of this methane gas is approximately \$20 million which meets approximately 98% of the plant’s heating needs and 20% of the plant’s power needs.



A key goal of the on-going study is to examine technologies that may result in the generation of additional methane – resulting in additional on-site heat/power generation and a corresponding reduction in purchased electricity and/or diesel fuel.

### Co-Digestion

One of the technologies that is being evaluated as part of this contract is co-digestion. Co-digestion involves the introduction of additional organic waste material into the wastewater digestion process.

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 digester operation, many other utilities are only now considering digestion to help offset their energy needs. There has been a recent expansion of this concept with an eye on the use of food wastes. These products are now also being considered valuable for their energy potential.

Examples of such waste include: source-separated food wastes, fats, oils and greases or other “digestible” products. Similar to normal wastewater sludge, these other products contain organic material that can be digested. As mentioned, the primary benefit of introducing these products into the wastewater digestion process would be the generation of additional methane, which, in

turn, would result in the generation of additional power using either the existing steam turbine or an on-site engine-generator set similar to the one pictured on the following page.

A second and equally important consideration for co-digestion is the fact that beginning in 2014, Massachusetts is set to ban landfill disposal of commercial and institutional food wastes. This ban will clearly encourage the diversion of these wastes to digesters. In addition to extracting more energy from these food wastes, the ban will also save landfill space.



### **DISCUSSION:**

While there have been state-wide discussions on new stand-alone digesters dedicated to food wastes, there is also interest in considering existing digesters that may have “excess” capacity. MWRA has been approached by the Executive Office of Energy & Environmental Affairs, the Department to Environmental Protection, and industry vendors about pursuing the concept of utilizing excess MWRA digester capacity for co-digestion of commercial and industrial food wastes.

In a typical co-digestion system, food wastes would be introduced into a digester at an approximate maximum volume of 10-20% of normal sludge loadings. (For Deer Island, that would translate to 100,000 - 200,000 gallons per day if a full-scale operation was pursued.) The food wastes would be pre-processed off-site, so that the product arrived screened and blended into a slurry. It would be retained in a holding tank and bled into the system to match operating demands. The holding tank would also be used for contingency purposes if systems were down for maintenance. The photo on the right depicts a typical receiving station using truck-based deliveries that would feed into holding tanks.



Primary concerns that MWRA will need to consider in assessing the feasibility of co-digestion include:

- Is it cost-effective or cost-beneficial?
- Are the costs of the improvements necessary to utilize any additional methane (e.g., gas collection and conveyance, other necessary physical modifications, including receiving stations, and impacts of increased sludge treatment/disposal costs) offset by energy savings?
- Will the potential for the new wastes negatively impact the current operation of the digesters?
- Will co-digestion create the potential for odors and/or pests (i.e., rodents, flies, etc.)

On a case-by-case basis, logistics would also be an issue in terms of modes of delivery, hours of delivery, etc. Any receiving facility would have to be equipped with odor control and basic “housekeeping” policies, which should address any issues with pest control. Any waste received would be required to include a certified waste characterization “manifest” to ensure that the product meets MWRA’s specification before introduction into the digester and all pre-processing requirements would be the responsibility of the private vendor delivering the product. This manifest system would also ensure that the quality of MWRA’s fertilizer pellets is not impacted by possible contaminants in the food wastes.

There are not a large number of co-digestion operating facilities in this country. The greatest number is likely in California where a few utilities are implementing programs – the most well-known of which is the East Bay Municipal Utilities District in Oakland and also in San Francisco and Victorville. These sites are all near some larger food-processing operations. Other sites that have either experimented with or are moving forward with a program include Seattle Washington, Edmonton and Toronto, Canada, the U.S. Air Force Academy, Atlanta, Georgia and Johnstown, New York.

#### Alternative Co-Digestion Concepts

In an effort to ensure that all potential opportunities to generate energy from co-digestion be explored, the idea of converting one sludge storage tank at the Pelletizing Plant in Quincy into a digester that could receive sludge from Deer Island *and* food wastes from trucks or barges was raised. The Pelletizing Plant could then offset some of its natural gas use from the energy generated in this scenario. However, staff noted that such a conversion would require costly and extensive modifications because digestion does not currently exist at the Pelletizing Plant. At this time, this concept is not being examined any further. In a similar vein, certain technologies that have been viewed negatively in the past, such as incineration on Deer Island, also will not be considered in the Technology Options Assessment.

#### Next Steps

MWRA currently operates a very reliable and successful residuals processing facility and certainly would not want to jeopardize that operation. Therefore, staff are currently pursuing the following four tracks in concurrent fashion to fully assess this concept:

- Feasibility Study – Contract 7147A includes a subtask to assess the feasibility of co-digestion. It will examine the potential costs and benefits, as well as modifications that would be necessary to successfully execute such an operation. That planning includes literature research and discussions with other utilities that either have or are considering co-digestion. A draft report is scheduled to be produced in November 2012;
- Vendor/Agency Discussions – Staff have had preliminary discussions with potential vendors who have an interest in managing the food waste stream that is anticipated to be banned by the pending state regulations. In concert with those discussions, staff also have been communicating with EOEEA and DEP about their plans for rolling out this ban; and

- **Bench-Scale Tests** – Bench-scale tests are being conducted at UMass-Amherst to simulate various mixes of food wastes with the objective of measuring methane gas generation potential and observing impacts to the bench-scale digester operation.

A series of miniature “digesters” (such as those pictured on the right) will be operated for a period of four to six months to simulate various food waste mixtures. This work is being carried out under one of MWRA’s existing energy-efficiency task order contracts. If the Bench-Scale testing demonstrates favorable results, MWRA would then consider larger-scale Pilot Testing, which would likely involve use of one digester at Deer Island.



- **Gas Transmission System** – The additional gas volumes generated from the co-digestion option, as well as other enhancements to the residuals processing operation that are under study, would have an impact on MWRA’s gas transmission system. A side study is being conducted to examine potential bottlenecks in that system and various options for relief.

In summary, given the agency’s interest in optimizing its residuals processing operation and improving its energy self-generation metric, and also considering the impending state ban on landfilled commercial and institutional food wastes, co-digestion is certainly an approach that merits further examination. Staff will provide additional updates to the Board and will present specific recommendations regarding this concept by mid-2013 as part of MWRA’s overall long-range residuals planning strategy.

#### **BUDGET/FISCAL IMPACTS:**


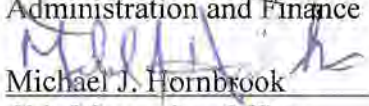
Both the Feasibility Study and Bench-Scale testing are being funded under Deer Island’s CIP at a total cost of approximately \$175,000. MWRA has applied for two grants from Mass Clean Energy Center totaling \$100,000 to help offset these costs; those grant applications are currently under review.

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10/17/12

**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** September 12, 2012  
**SUBJECT:** Technical Assistance Consulting Services – Deer Island Treatment Plant  
AECOM Technical Services, Inc. - Contract 7399  
Fay, Spofford & Thorndike, LLC - Contract 7400  
Brown and Caldwell - Contract 7434

**COMMITTEE:** Wastewater Policy & Oversight

INFORMATION  
 VOTE  
  
Rachel C. Madden, Director  
Administration and Finance  
  
Michael J. Hornbrook  
Chief Operating Officer

Daniel K. O'Brien, PE, Director, Deer Island WWTP  
Richard J. Adams, Manager, Engineering Services  
Preparer/Title

*A staff summary for the award of this contract was initially included with the Board materials for the September 17, 2012 meeting. The Selection Committee initially recommended the award of a contract to Dewberry Engineers, Inc. However, one of the Consultants, Brown and Caldwell, protested MWRA's decision prompting further consideration by the Selection Committee. Upon review, staff agreed with Brown and Caldwell's position that its Qualifications Statement met the minimum threshold requirements and the firm's Cost Data Exercise envelope was subsequently opened and reviewed by the Selection Committee.*

**RECOMMENDATION:**

To approve the recommendation of the Consultant Selection Committee to award three separate contracts to provide as-needed technical assistance consulting services for the Deer Island Treatment Plant to AECOM Technical Services, Inc., Fay, Spofford & Thorndike, LLC, and Brown and Caldwell, and to authorize the Executive Director, on behalf of the Authority, to execute Contract 7399 with AECOM Technical Services, Inc., Contract 7400 with Fay, Spofford & Thorndike, LLC, and Contract 7434 with Brown and Caldwell, each in an amount not to exceed \$1,600,000, and for a contract term of three years from the Notice to Proceed.

**DISCUSSION:**

During the past 13 years, MWRA has awarded several as-needed technical assistance consulting contracts to supplement in-house staff on high priority or unanticipated projects at the Deer Island Treatment Plant, and to provide expertise on short-term assignments requiring specialized engineering disciplines that are not cost effective for MWRA to maintain on an in-house basis.

Over the last several years, MWRA has awarded two technical assistance contracts to address Deer Island's needs (in addition to the two contracts for the Carroll Water Treatment Plant and two contracts for all other MWRA water and wastewater facilities). In the past, with two concurrent contracts, MWRA staff have had access to a broader, more diverse range of resources, ensuring timely responsiveness. Also, having two separate contracts has minimized the potential for a conflict of interest with a consultant who may be called upon to evaluate a problematic system or component that it originally designed.

In the development of this most recent procurement, staff recommended the addition of yet a third contract in an attempt to further increase competition and broaden the number of proposals received from qualified firms. The addition of a third contract will further ensure responsiveness and timely completion of task orders, as well as, allow for more comparative pricing on task orders. Also, it should be noted that as the plant continues to age, there will be an increase in the number of systems and equipment that will require replacement or upgrade. There will likely be a corresponding increase in the need for these services.

### **Procurement Process**

Staff utilized a one-step/two-envelope Request for Qualifications/Proposals (RFQ/P). On August 28, 2012, six qualifications statements, along with separate sealed cost envelopes, were received from the following firms: AECOM Technical Services, Inc., Fay, Spofford & Thorndike, LLC, CDM Smith, Inc., ARCADIS U.S., Inc., Dewberry Engineers, Inc., and Brown and Caldwell. The Selection Committee evaluated and compared each firm's first-stage qualifications statements using the following criteria: Past Performance on MWRA Projects and Similar Experience/Past Performance on Similar Non-MWRA Projects; Capacity/Qualifications/Key Personnel; and Technical Approach/Organization and Management Approach.

The Selection Committee determined that five of six firms met the threshold and technical requirements and were considered qualified. The sixth firm, ARCADIS U.S., Inc. did not meet minimum requirements as its proposed senior engineers did not meet the minimum required years of experience and did not hold Massachusetts Professional Engineering Licenses in the specified disciplines as outlined in the Minimum Required Qualifications of Key Personnel section of the RFQ/P. The cost envelope from this firm was not opened.

The procurement process for these technical assistance contracts 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, task order work varies depending on the size of the task and the specific engineering disciplines required to complete the work, none of which are known until a specific need arises. Therefore, proposers were required to complete and submit a Cost Data Exercise using a level of effort pre-determined by MWRA. The total level of effort was based on the average annual distribution of hours from prior technical assistance contracts over several years.

Each proposer completed a Cost Data Form providing cost information, which included labor rates and a multiplier, incorporating indirect costs and a profit percentage based on a total of



14,200 hours of effort. The total dollar amounts proposed by the five qualified firms in the Cost Data Exercise and the associated final ranking based upon those costs are presented below.

<u>Firm</u>	<u>Cost Exercise Amount</u>	<u>Rank</u>
AECOM Technical Services, Inc.	\$1,367,837.00	1
Fay, Spofford & Thorndike, LLC	\$1,518,385.00	2
Brown and Caldwell	\$1,520,095.00	3
Dewberry Engineers, Inc.	\$1,573,172.02	4
CDM Smith, Inc.	\$1,620,440.00	5

The Selection Committee was in agreement that the three lowest cost proposers: AECOM Technical Services, Inc., Fay, Spofford & Thorndike, LLC, and Brown and Caldwell, all proposed project teams that included staff with vast experience in the design of large wastewater treatment plants with secondary treatment. The proposed teams included senior engineers that currently hold Massachusetts Professional Engineering Licenses and who have at least 15 years of relevant experience in their respective disciplines, which was a requirement in the RFQ/P. The Selection Committee felt that all three firms submitted excellent qualifications statements that demonstrated a clear understanding of the contract needs and proposed project teams consisting of well-qualified and experienced key personnel.

The Selection Committee noted that Dewberry Engineers and CDM Smith also submitted excellent qualification statements, but the firms were ranked fourth and fifth, respectively, solely on the basis of their highest Cost Data Exercises.

Based on the proposals submitted, the Selection Committee recommends the award of three separate contracts to the three lowest proposers in the Cost Data Exercise, AECOM Technical Services, Inc., Fay, Spofford & Thorndike, LLC, and Brown and Caldwell, each in an amount not to exceed \$1,600,000 and for a contract term of three years from the Notice to Proceed.

**BUDGET/FISCAL IMPACT:**

The FY13 CIP includes a budget of \$1,800,000 for each contract. The budgeted amount was developed based upon estimated usage and historical pricing from previous technical assistance contracts. In previous instances, recommended contract award amounts were based on budgeted amounts and closely approximated the lowest proposed Cost Exercise Amounts. Staff are recommending award amounts of only \$1,600,000 each, \$200,000 less than the budgeted amounts, based on the lower Cost Exercise Amounts submitted for this procurement.

**MBE/WBE PARTICIPATION:**

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



# 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:*

*Vice-Chair:* V. Mannering

*Committee Members:*

J. Barrera

J. Carroll

J. Foti

M. Gove

A. Pappastergion

J. Walsh

to be held on

Wednesday, October 17, 2012

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

Time: Immediately following Wastewater Committee

## AGENDA

### **A. Information**

1. Update on Lead and Copper Rule Compliance – Fall 2012

### **B. Contract Awards**

1. Supply and Delivery of Soda Ash for the John J. Carroll Water Treatment Plant: OCI Chemical Corporation, WRA-3518

### **C. Amendments/Change Orders**

1. Lynnfield/Saugus Pipeline: Albanese Brothers, Inc., Contract 6584, Change Order 23

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## MASSACHUSETTS WATER RESOURCES AUTHORITY

### Meeting of the Water Policy and Oversight Committee

September 12, 2012

A meeting of the Water Policy and Oversight Committee was held on September 12, 2012 at the Authority headquarters in Charlestown. Vice-Chair Mannering presided. Present from the Board were Messrs. Cotter, Foti, Swett and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Mike Hornbrook, Jae Kim, Fred Brandon, Nava Navanandan, John Vetere, Bill Sullivan and Bonnie Hale. The meeting was called to order at 12:20 p.m.

#### **Contract Awards**

\*Sudbury Aqueduct Pressurization and Connections Alternatives Analysis and MEPA Review: CDM Smith Inc., Contract 7352

Staff explained the benefits of providing redundancy to the southern component of MWRA's water system and described this contract to evaluate alternatives and complete a MEPA reviews. The Committee recommended approval of the contract award (ref. agenda item A.1).

#### **Contract Amendments/Change Orders**

\*Ultraviolet Disinfection Facilities at the John J. Carroll Water Treatment Plant: Daniel O'Connell's Sons, Inc. Contract 6924, Change Order 8

Staff provided an overview of the project and the change order, and there was question and answer. The Committee recommended approval of Change Order 8 (ref. agenda item B.1).

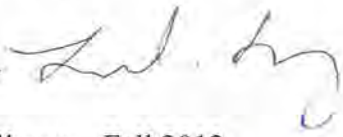
The meeting adjourned at 12:30 p.m.

\* Approved as recommended at September 12, 2012 Board of Directors meeting.

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10/17/12

### STAFF SUMMARY


**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** October 17, 2012  
**SUBJECT:** Update on Lead and Copper Rule Compliance – Fall 2012



COMMITTEE: Water Policy & Oversight

X INFORMATION  
       VOTE

Joshua Das, Project Manager, Public Health  
Stephen Estes-Smargiassi, Director, Planning  
Preparer/Title

  
Michael J. Hornbrook  
Chief Operating Officer

*On January 3, 2012, because MWRA's system-wide lead levels have been consistently below the Lead Action Level, DEP approved MWRA going to one lead and copper sampling round per year. MWRA system-wide lead levels in the September 2012 sampling round were below the Action Level of 15 parts per billion (ppb) again for the 17th consecutive sampling round. MWRA system-wide 90th percentile value for calendar year 2012 is 7.7 ppb. Two communities were individually above the Lead Action Level. MWRA continues to meet the copper standard.*

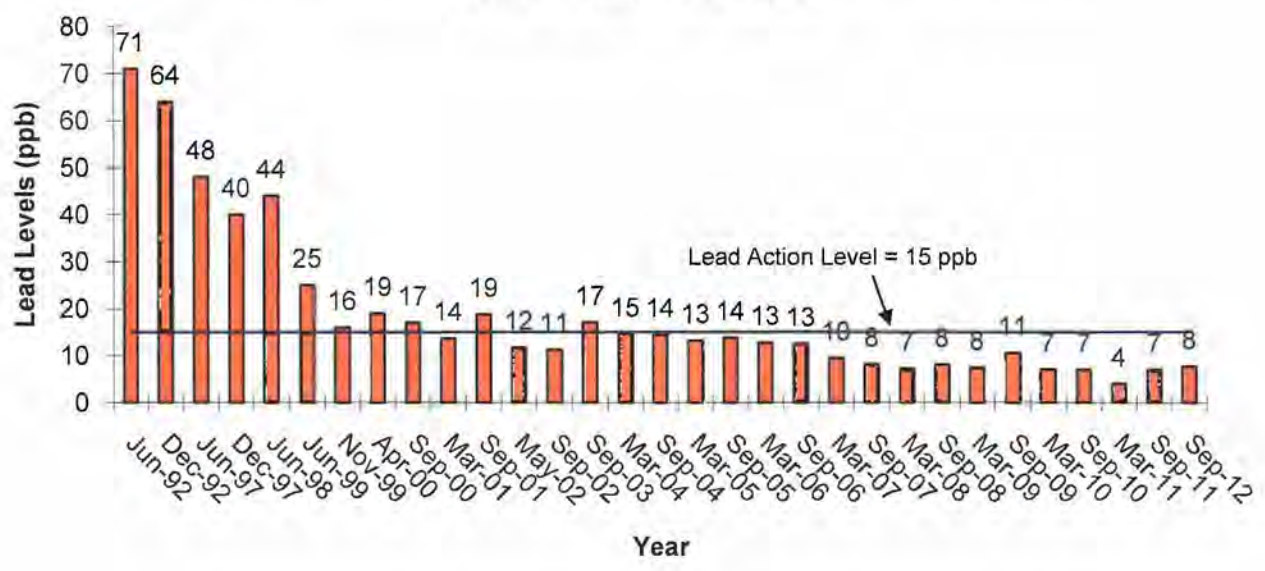
#### RECOMMENDATION:

For information only.

#### DISCUSSION:

MWRA and its communities conducted the calendar year 2012 sampling round beginning in September 2012. The preliminary 90th percentile value for the system as a whole in September was 7.7 ppb, which is below the Lead Action Level of 15 ppb.

**Figure 1 - 90% Lead Levels in MWRA System of Fully Served Communities: 1992-2012**



Under EPA's Lead and Copper Rule, each year MWRA and every fully-supplied community must collect and test tap water in a sample of homes<sup>1</sup> that are likely to have high lead levels. These are usually homes with lead services or lead solder. EPA requires that nine out of ten of the sampled homes must have lead levels below the Action Level of 15 ppb.

Starting in 2012, MWRA's fully-supplied communities are only required to sample for lead and copper once per year, as long as their 90<sup>th</sup> percentile results are below the Action Level. In 2012, only one community, Malden, was required to sample twice due to being over the Action Level in September 2011. As Malden's results for both the March and September 2012 sampling rounds were both below the Action Level, Malden will return to once-per-year sampling in 2013.

Two communities, Medford and Melrose, were above the Action Level in this most recent sampling round. Therefore, both communities will be required to sample twice in 2013 – in March and September. They can return to once-per-year sampling after they have two consecutive sampling rounds under the Action Level. Both communities have been notified and will be required to meet education requirements, including mailing lead education brochures, as well as meet lead service line replacement requirements set by DEP. MWRA provides the education brochures, and staff have offered assistance in working with DEP on the education requirements and service line documentation.

Each community also collects samples from two schools or daycare facilities. As they have done for the past several years, DEP sends letters to communities that had at least one school over the Action Level. The letter is also sent to the affected school, and includes a list of recommendations that water departments should follow, including a checklist that DEP strongly recommends that communities send back to DEP. In August 2012, DEP sent these letters again for communities that had one school over the Action Level in at least one of the last three sampling rounds: September 2011, March 2011, and September 2010. MWRA staff have provided assistance and sent a letter to each affected community with references on how to work with the school to flush the fountains, submit re-samples of respective school fountains, and encourage sending documentation to DEP.

MWRA will formally transmit these results to DEP later this month. The results will also be transmitted to the communities, and, through them, to every individual homeowner or school that collected a sample for the program. MWRA staff will directly contact individual homeowners with very high or unusual results.

Staff are presenting a related staff summary at this meeting for the approval of a three-year purchase order contract for the supply of soda ash (sodium carbonate) for corrosion control treatment used to reduce lead levels.

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<sup>1</sup> In most communities, 15 homes are sampled; the exceptions are Boston, which collects 25 samples, and Lynnfield and Nahant, which collect 10 samples. A total of at least 450 samples are collected.

**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** October 17, 2012  
**SUBJECT:** Three-Year Purchase Order Contract for the Supply and Delivery of Soda Ash to the John J. Carroll Water Treatment Plant  
OCI Chemical Corporation  
Bid WRA-3518

COMMITTEE: Water Policy & Oversight

           INFORMATION  
            VOTE

Rachel C. Madden, Director  
Administration and Finance

Richard P. Trubiano, Deputy Chief Operating Officer  
Michele S. Gillen, Deputy Director, Administration and Finance  
Preparer/Title

MSG

Michael J. Hornbrook  
Chief Operating Officer

**RECOMMENDATION:**

To approve the award of Contract WRA-3518, a three-year purchase order contract for the supply and delivery of soda ash to the John J. Carroll Water Treatment Plant, to the lowest responsive bidder, OCI Chemical Corporation, and authorize the Director of Administration and Finance to execute said contract in an amount not to exceed \$11,700,000.

**DISCUSSION:**

MWRA uses sodium carbonate, more commonly referred to as "soda ash," at the Carroll Water Treatment Plant for corrosion control. In combination with carbon dioxide, soda ash increases and stabilizes the alkalinity and pH of MWRA's water. MWRA takes delivery of soda ash in powder form where it is stored in six 120-ton vertical silos inside the Post-Treatment Building on the westerly side of the treatment plant. (Pictured to the right, prior to the start of UV construction). It is fed into the system by six gravimetric dry feeders with solution tanks.

A tangible result of the use of soda ash and one of the most significant benefits of its use is reflected in the sampling results under EPA's Lead and Copper Rule, which requires that nine out of ten or 90% of the sampled homes must have lead levels below the Lead Action Level



separate staff summary presented at this meeting, staff reported to the Board that MWRA system-wide lead levels in the September 2012 sampling round were below the Action Level for the 17th consecutive sampling round. The MWRA system-wide 90th percentile value is 7.7 ppb for calendar year 2012, which is the first year EPA has allowed MWRA to sample only once annually because of its consistently low lead levels.

**Procurement Process**

Bid WRA-3518 was advertised in the Boston Herald, Central Register, Goods & Services, Dodge Reports, El Mundo, and Banner Publications. In addition, bids were made available for public downloading on Comm-PASS, the Commonwealth of Massachusetts’ procurement website.

On September 12, 2012, two bids were received and opened on with the following results:

Item	Description	<b>OCI Chemical Corporation</b>	FMC Corporation
1	12,000 Tons Year 2013	<b>\$315 per ton = \$3,780,000</b>	\$324 per ton = \$3,888,000
2	12,000 Tons Year 2014	<b>\$325 per ton = \$3,900,000</b>	\$326 per ton = \$4,032,000
3	12,000 Tons Year 2015	<b>\$335 per ton = \$4,020,000</b>	\$351 per ton = \$4,212,000
	Total	<b>\$11,700,000</b>	\$12,132,000

The contract will provide up to 12,000 tons of soda ash each year during the three-year term of this contract and MWRA will only pay for product that is delivered and received.

Under the existing three-year contract for soda ash, with FMC Corporation, which expires on December 31, 2012, MWRA is paying \$310 per ton (third-year pricing; similarly escalated - the first year’s unit bid price was \$280 per ton and the second year’s price was \$295 per ton).

The soda ash market is consistently in a state of strong demand. Soda ash is primarily used in the production of flat glass and detergents. There are four main soda ash producers in the United States, OCI Corporation, FMC Corporation, Solvay Soda Ash, and General Chemical. All of these producers have mines in Sweetwater County, Wyoming. U.S. producers of soda ash have been successfully maintaining lower production costs than their main competitors in China. As a result, global users buy as much of the soda ash that the Wyoming-based companies can produce.

MWRA received bids from two out of the four major producers. Solvay Chemical submitted a “No Bid” letter, but would not elaborate on its reasons. Staff contacted General Chemical’s Northeast sales manager who stated that he could not get a commitment from upper management on pricing.

Staff have reviewed both bids and have determined that OCI Chemical Corporation’s bid meets all of the requirements of the specifications. Therefore, staff recommend the award of this purchase order contract to OCI Chemical Corporation as the lowest responsive bidder.

**BUDGET/FISCAL IMPACT:**

There are sufficient funds included in the FY13 Current Expense Budget for the first portion of this contract. Appropriate funding will be included in subsequent CEB requests for the remaining term of this three-year contract.

**MBE/WBE PARTICIPATION:**

OCI Chemical Corporation is not a certified Minority- or Women-owned business.



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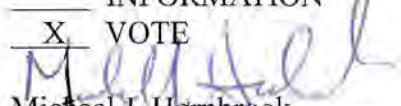
**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director  
**DATE:** October 17, 2012  
**SUBJECT:** Lynnfield/Saugus Pipelines Project  
Albanese Brothers, Inc.  
Contract 6584, Change Order 23



COMMITTEE: Water Policy & Oversight

Eleanor Duffy, P.E., Construction Coordinator  
A. Navanandan, P.E., Director, Construction  
Preparer/Title

\_\_\_\_ INFORMATION  
X VOTE  
  
\_\_\_\_ Michael J. Hornbrook  
Chief Operating Officer

**RECOMMENDATION:**

To authorize the Executive Director, on behalf of the Authority, to approve Change Order 23 to Contract 6584, Lynnfield/Saugus Pipeline Construction, with Albanese Brothers, Inc., for an amount not to exceed \$300,279.37, increasing the contract amount from \$5,998,452.05 to \$6,298,731.42, and extending the contract term by 7 calendar days from February 7, 2013 to February 14, 2013.

Further, to authorize the Executive Director to approve additional change orders as may be needed to Contract 6584 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 Lynnfield Water District is currently supplied by MWRA through an eight-inch water main located in the median strip of Route 1 in the Town of Saugus. This water main, installed in 1957, provides suction to Lynnfield Water District's pump station located on the northbound side of Route 1 near the Lynnfield/Saugus line. MWRA's eight-inch water main is undersized for current and anticipated future demands and a new, larger main is needed. After several alternative alignments for a new pipeline were evaluated, staff recommended that a new pipeline be installed along Route 1.

Contract 6584, approved by the Board on December 22, 2010, includes the construction of approximately 1,800 feet of 36-inch water main, 4,700 feet of 24-inch water main, 6,000 feet of 12-inch water main and blow-off piping, including main line valves, air valves, and one new revenue meter. The contract also includes pavement restoration, some sidewalk reconstruction, and traffic and environmental controls during construction. Construction is taking place within heavily traveled Route 1 during night-time hours with up to two travel lanes being temporarily closed (see attached project map).

The Town of Saugus has experienced numerous breaks in its water main along Route 1. The Town's consultant investigated various options and the town decided to construct a new 12-inch water main along the same alignment as MWRA's proposed work on Route 1. MWRA and Saugus agreed to combine their respective projects to reduce design and construction costs and minimize traffic impacts. On May 12, 2010, the Board approved a Memorandum of Agreement (MOA) between MWRA and the Town of Saugus for the cost sharing and coordination necessary to include Saugus' water main as part of MWRA's contract. Contract 6584, includes construction of both MWRA's and the Town of Saugus' 6,000 feet of 12-inch water mains.

Staff have compiled a list of all change order items in this contract that have resulted from an error or omission on the part of the Design Consultant, Fay, Spofford & Thorndike (FST), and have notified FST, in writing, of the current status of these findings and of MWRA's intention to seek appropriate cost recovery.

Staff have informed the Town of Saugus of the costs associated with this change order and expect that the Town will pay its portion of the costs in accordance with the MOA.

### **This Change Order**

Change Order 23 consists of the following seven items:

Excavate, Transport, and Dispose of  
Unanticipated Ledge Extend the Contract Time by Seven Days \$138,605.37

The contract drawings included a rock profile for the entire alignment of MWRA's and Saugus' water mains on Route 1. The Contractor encountered ledge at 18 separate locations where ledge was not shown on the rock profile. The unanticipated ledge resulted in additional work, which entitled the Contractor to additional compensation and a 7 day extension of the contract term.

This change order item has been identified by MWRA staff as a differing site condition. The Design Engineer, FST, MWRA staff and the Contractor have agreed to a lump sum amount of \$138,605.37 for this additional work with a seven-day day time extension.

Revise the 24-inch Water Main Alignment and  
Relocate a 24-inch Gate Valve and Blow-Off Manhole \$70,000

The contract drawings show installation of MWRA's 24-inch water main under a 30-inch Lynn Raw water main shown to be 2.5 feet below the road surface. During construction, excavation revealed that the 30-inch pipe is actually 5.8 feet below the surface and thus in direct conflict with the location specified for installation of the 24-inch water main. Therefore, it was necessary for the Contractor to lower the 24-inch water main to pass under the 30-inch water main and relocate a gate valve and a blow-off manhole (see picture on the right). The elevation of the 30-inch water main was correctly indicated on the record plans.



This change order item has been identified by MWRA staff as a design error. FST, MWRA staff, and the Contractor have agreed to a lump sum amount of \$70,000 for this additional work with no extension in contract term.

Revise the 24-inch Main Alignment to Tie-in to MWRA Section 70;  
Protect High-Pressure Gas Main in Place and Modify Gate Valve Manhole \$30,000

The contract drawings require tie-in of the new MWRA 24-inch main to MWRA's exiting Section 70. Based on MWRA record drawings, the contract indicates that Section 70 is located five feet below the road surface and three feet from a two-inch, high-pressure gas main. During construction, excavation revealed that Section 70 is actually located four feet below the surface, resting directly on ledge with only two inches of bedding, and directly under the gas main. In order to tie-in to Section 70, it was necessary for the Contractor to raise the alignment of the new water main and modify a gate valve manhole structure. Because the gas company was unable to isolate the high-pressure gas main, it was necessary to protect the gas main during the tie-in.

This change order item has been identified by MWRA staff as an unforeseen condition because the record drawings were incorrect. FST, MWRA staff, and the Contractor have agreed to a lump sum amount of \$30,000 for this additional work with no increase in contract term.

Raise Manhole and Replace Asbestos  
Cement Sewer with Concrete-Encased, Ductile-Iron Pipe \$19,500

Based on plans received from the Town of Saugus, the contract drawings show a Saugus sewer manhole with a 10-inch asbestos concrete sewer exiting the manhole and traversing Route 1. The asbestos concrete sewer actually continues south to a buried manhole where it traverses Route 1. Because the sewer was in a different location, it was necessary for the Contractor to raise the manhole and replace a segment of the asbestos concrete sewer pipe with concrete-encased, ductile-iron pipe.

This change order item has been identified by MWRA staff as an unforeseen condition because the record drawings were incorrect. FST, MWRA staff, and the Contractor have agreed to a lump sum amount of \$19,500 for this additional work with no increase in contract term.

Replace Reinforced-Concrete Pipe with HDPE Pipe  
and Revise the Alignment of the 24-inch Water Main \$18,674

The contract drawings show MWRA's 24-inch water main crossing under an 18-inch reinforced concrete pipe drain pipe. Base-mapping performed during design indicated that the drain pipe slopes down from the median to the outlet off the right shoulder of Route 1 South. However, the contract drawings incorrectly indicate that the elevation of the drain line in the right lane of Route 1 is exactly the same as that in the median. Because the drain line was at a lower elevation, it was in direct conflict with the design location of the water main, which had to be realigned to pass under the drain line. In addition, a portion of the drain had to be replaced because it could not be protected during the rock excavation required to install the water main in the revised location.

This change order item has been identified by MWRA staff as a design error. FST, MWRA staff, and the Contractor have agreed to a lump sum amount of \$18,674 for this additional work with no increase in contract term.

Furnish and Install Ductile-Iron Class 52 Piping at the Walnut Street Off-Ramp

\$18,000

The contract drawings show Saugus' 12-inch main on Route 1 South at the Walnut Street off-ramp connecting into an existing Saugus 10-inch water main. While excavating for the 12-inch water main, the Contractor discovered that the existing 10-inch water main was only three and half inches below the surface. As a result, the Contractor was required to furnish and install additional piping and fittings to provide a vertical offset (see picture on the right) to install the water main five feet below the surface to prevent freezing. The Town of Saugus' record information incorrectly indicated that the existing 10-inch main was at a lower elevation.



This change order item has been identified by MWRA staff as an unforeseen condition because the record drawings were incorrect. FST, MWRA staff, and the Contractor have agreed to a lump sum amount of \$18,000 for this additional work with no increase in contract term.

Excavate, Transport, and Dispose of Boulders

\$5,500

The contract included an estimated quantity of 3,080 cubic yards of rock, including boulders. The estimated quantity for rock has been exceeded. Based on the rock profile for the remaining work and conditions recently encountered, it appears that additional ledge removal will not be required. However, a significant number of boulders continue to be encountered (similar to those shown on the right). Therefore, it was determined that a separate unit price for boulders should be negotiated to complete the remaining pipeline installation.



This change order item has been identified by MWRA staff as an unforeseen condition. FST, MWRA staff, and the Contractor have agreed to an amount not to exceed \$5,500 for this additional work with no increase in contract term.

**CONTRACT SUMMARY:**

	<u>Amount</u>	<u>Time</u>	<u>Dated</u>
Original Contract:	\$4,924,400.00	730 Days	01/18/11
Change Orders:			
Change Order 1	\$265,000.00	0 Days	06/01/11
Change Order 2*	\$24,000.00	0 Days	07/28/11
Change Order 3*	\$21,000.00	0 Days	09/01/11
Change Order 4*	\$5,402.42	0 Days	10/18/11
Change Order 5*	\$23,300.00	0 Days	11/07/11
Change Order 6*	\$10,687.41	0 Days	11/07/11
Change Order 7*	\$12,873.81	0 Days	12/13/11
Change Order 8*	\$20,449.60	0 Days	12/20/11
Change Order 9*	\$91,634.26	0 Days	01/27/12
Change Order 10*	\$16,946.97	0 Days	01/30/12
Change Order 11*	\$9,691.71	0 Days	02/09/12
Change Order 12	(\$67,036.70)	0 Days	02/21/12
Change Order 13*	\$24,689.20	0 Days	03/09/12
Change Order 14*	\$24,836.44	0 Days	03/19/12
Change Order 15*	\$14,036.35	0 Days	05/14/12
Change Order 16	\$458,551.53	21 Days	06/07/12
Change Order 17*	\$21,120.00	0 Days	07/09/12
Change Order 18*	\$25,000.00	0 Days	07/09/12
Change Order 19*	\$15,000.00	0 Days	08/13/12
Change Order 20*	\$11,780.08	0 Days	08/21/12
Change Order 21*	\$25,000.00	0 Days	09/25/12
Change Order 22*	\$22,088.97	0 Days	Pending
Change Order 23	<u>\$300,279.37</u>	<u>7 Days</u>	Pending
Total of Change Orders:	\$1,074,052.05	28 Days	
Adjusted Contract:	\$6,298,731.42	758 Days	

\*Approved under delegated authority

If Change Order 23 is approved, the cumulative total value of all change orders to this contract will be \$1,074,052.05 or 22% of the original contract amount. Work on this contract is approximately 80% complete.

**BUDGET/FISCAL IMPACT:**

The FY13 CIP contains a budget of \$5,960,375 for Contract 6584. Including this change order for \$300,279.37, the adjusted subphase total is \$6,298,731.42 or \$338,356.42 over budget. This amount will be covered within the five-year spending cap.

**MBE/WBE PARTICIPATION:**

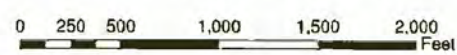
The MBE/WBE participation requirements for this contract were established at 7.24% and 3.6%, respectively, and will remain unchanged by this change order.

**ATTACHMENT:** Project Map



**LYNNFIELD/SAUGUS PIPELINES PROJECT**

**PIPELINE INSTALLED TO DATE**



SIZE	CONTRACT	INSTALLED TO DATE	PERCENT COMPLETE
12"	6000	5,135 LF	86%
24"	4700	4,700 LF	100%
36"	1800	1,800 LF	100%



# MASSACHUSETTS WATER RESOURCES AUTHORITY

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

Frederick A. Laskey  
Executive Director

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

## PERSONNEL & COMPENSATION COMMITTEE MEETING

*Chair:* K. Cotter  
*Vice-Chair:* J. Barrera  
*Committee Members:*  
J. Foti  
V. Mannering  
J. Walsh

to be held on

Wednesday, October 17, 2012

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

Time: Immediately following Water Committee

### **A. Approvals**

1. PCR Amendments – October 2012
2. Appointment of Program Manager, Wastewater Operations

P&C  
10/17/12

MASSACHUSETTS WATER RESOURCES AUTHORITY

Meeting of the  
Personnel and Compensation Committee

September 12, 2012

A meeting of the Personnel and Compensation Committee was held on September 12, 2012 at the Authority headquarters in Charlestown. Chairman Cotter presided. Present from the Board were Messrs. Foti, Mannering, Swett and Walsh. Among those present from the Authority staff were Fred Laskey, Steve Remsberg, Bob Donnelly, and Bonnie Hale. The meeting was called to order at 12:30 p.m.

**Approvals**

\*PCR Amendments – September 2012

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

The meeting adjourned at 12:35 p.m.

\* Approved as recommended at September 12, 2012 Board of Directors meeting.



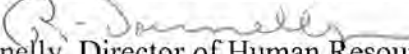
PtCA.1  
IV A.1  
10/17/12


STAFF SUMMARY

TO: Board of Directors  
FROM: Frederick A. Laskey, Executive Director  
DATE: October 17, 2012  
SUBJECT: October PCR Amendments

COMMITTEE: Personnel and Compensation

INFORMATION

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

VOTE  
  
Rachel C. Madden  
Director, Administration & Finance

RECOMMENDATION:

To approve the amendments to the Position Control Register (PCR) included in the attached chart<sup>1</sup>.

DISCUSSION:

The PCR amendments included in this package reflect organizational changes aimed at improving the cost-effectiveness, structural soundness and staffing patterns in the Administration and Finance Division.

These amendments include:

1. Title change for a filled position in Procurement, A & F Division (Buyer to Materials Management Coordinator I), to meet the staffing needs of the department.
2. Title change for a filled position in Treasury, A & F Division (Document Coordinator to Administrative Coordinator I), to meet the staffing needs of the department.
3. Title and grade change for a filled position in Risk Management, A & F Division (Risk Management Coordinator to Risk Management Claims Administrator) to reflect assumption of additional duties and responsibilities.
4. Title and grade change for a filled position in Procurement, A & F Division (Secretary I to Document Coordinator) to reflect assumption of additional duties and responsibilities.

Two amendments require approval by the Personnel and Compensation Committee. Two amendments require Board approval after review by the Personnel and Compensation Committee.

<sup>1</sup> 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.

**BUDGET/FISCAL IMPACT:**

The annualized budget impact of these PCR amendments will be \$8,202. Staff will ensure that the cost increases associated with these PCR amendments will not result in spending over the approved FY13 Wages and Salaries budget.

**ATTACHMENTS:**

New/Old Job Descriptions

MASSACHUSETTS WATER RESOURCES AUTHORITY  
 POSITION CONTROL REGISTER AMENDMENTS  
 FISCAL YEAR 2013

PCR AMENDMENTS REQUIRING PERSONNEL & COMPENSATION COMMITTEE APPROVAL - October 17, 2012

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
P3	Administration & Finance Procurement 8810004	F	T	Buyer	1	22	Materials Management Coordinator I	1	22	N/A	N/A - N/A	\$0 - \$0	To meet departmental needs
P4	Administration & Finance Treasury 4510049	F	T	Document Coordinator	1	17	Administrative Coordinator I	1	17	N/A	N/A - N/A	\$0 - \$0	To meet departmental needs
<b>PERSONNEL &amp; COMP COMMITTEE TOTAL=</b>					<b>2</b>		<b>TOTAL</b>					<b>\$0 - \$0</b>	

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

MASSACHUSETTS WATER RESOURCES AUTHORITY  
 POSITION CONTROL REGISTER AMENDMENTS  
 FISCAL YEAR 2013

PCR AMENDMENTS REQUIRING BOARD APPROVAL - October 2012


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
B10	Administration & Finance Risk Management 4610011	F	T,G	Risk Management Coordinator	1	18	Risk Management Claims Administrator	1	22	\$59,634	\$63,889 - \$63,889	\$4,255 - \$4,255	Assuming additional duties and responsibilities
B11	Administration & Finance Procurement 8810043	F	T,G	Secretary I	1	15	Document Coordinator	1	17	\$50,280	\$54,227 - \$54,227	\$3,947 - \$3,947	To meet the need for electronic document filing in Procurement.
<b>BOARD TOTAL =</b>					2		<b>SUBTOTAL:</b>					\$8,202 - \$8,202	
<b>GRAND TOTAL =</b>					4		<b>TOTAL ESTIMATED COSTS:</b>					\$8,202 - \$8,202	

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

**STAFF SUMMARY**


**TO:** Board of Directors  
**FROM:** Frederick A. Laskey, Executive Director   
**DATE:** October 17, 2012  
**SUBJECT:** Appointment of Program Manager, Wastewater Operations

COMMITTEE: Personnel and Compensation

John P. Vetere, Deputy Chief Operating Officer  
Stephen Cullen, Director, Wastewater O & M  
Preparer/Title

         INFORMATION

  X   VOTE

  
Michael J. Hornbrook  
Chief Operating Officer

**RECOMMENDATION:**

To approve the appointment of Daniel R. Thompson to the position of Program Manager, Wastewater Operations (Unit 9, Grade 29) at the recommended salary of \$95,932, commencing on a date to be determined by the Executive Director.

**DISCUSSION:**

The position of Program Manager, Process Control and Project Support became vacant in July 2012 upon the retirement of the previous incumbent. On September 17, 2012, the Board approved a Position Control Register amendment that converted this position to Program Manager, Wastewater Operations (same grade and unit). This position will assist the Manager of Operations in the overall, day-to-day management of MWRA's wastewater pumping stations, headworks, and CSO facilities. The Program Manager's duties include: managing wet-weather events; developing Standard Operating Procedures for wastewater facilities; coordinating predictive and preventive maintenance activities for Wastewater Operations; acting as a construction liaison between Wastewater Operations and the Engineering & Construction Unit; developing storm reports to document storm events; conducting periodic audits of wastewater staff and facilities; acting as a departmental safety liaison, and utilizing Maximo, SCADA and Process Book to monitor facility operations and to gather information for reporting requirements.

Organizationally, the Program Manager, Wastewater Operations reports to the Manager of Operations, in the Wastewater Operations & Maintenance department (see attached Organization Chart).

**Selection Process**

This position was posted internally and nine applications were received. Senior staff from Operations and the Affirmative Action and Compliance Unit interviewed five candidates and determined that Daniel R. Thompson possessed the knowledge, skills, and experience required for this position.

Mr. Thompson has worked in various wastewater positions of increasing responsibility at MWRA for the past 25 years. He started as a Project Engineer in the Wastewater Engineering Department working on the Combined Sewer Overflow Program. He also worked as a Senior Engineer on many of MWRA's energy initiatives throughout the water and wastewater facilities. He then worked for 12 years as a Project Manager – Senior Designer on Deer Island assisting various departments developing maintenance services contracts for equipment repairs, improvements, and upgrades.

For the past year he has worked in Wastewater Operations cross-training on operations and maintenance of wastewater facilities off Deer Island. During this period, he has performed a number of the duties associated with this position. He has successfully demonstrated the ability to manage staff and wastewater facilities during wet-weather events and has demonstrated good leadership skills, earning the respect of his colleagues and supervisors.

Mr. Thompson holds a Bachelor of Science Degree in Marine Engineering from Massachusetts Maritime Academy, which he received in 1983. He also possesses a Massachusetts Wastewater Operators License grade 5-C and a Massachusetts Collection Systems Certification Grade 4.

**BUDGET/FISCAL IMPACT:**

There are sufficient funds in the Operations Division's FY12 Current Expense Budget to fund this position. The recommended salary is in accordance with guidelines established in the current Unit 9 collective bargaining agreement.

**ATTACHMENTS:**

Resume of Daniel R. Thompson  
Position Description  
Organization Chart

**Daniel R. Thompson**

208 Gladstone Street  
East Boston, MA 02128  
Home: 617.561.4020

[Daniel.Thompson@mwra.state.ma.us](mailto:Daniel.Thompson@mwra.state.ma.us)

## EXPERIENCE

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1986 – present

MASSACHUSETTS WATER RESOURCES AUTHORITY

Boston, MA

### **Project Manager - Wastewater Operations Department**

Worked within the Wastewater Field Operations department carrying out the standard operational protocol; monitored monthly equipment maintenance items; provided coordination between various departments to maintain operations including during wet weather events

- monitored scheduled monthly maintenance generated through MAXIMO and entered new maintenance work order assignments to ensure equipment and facilities operation
- assisted with departmental management duties including weekly pay roll processing; provided staff workforce RTK training; worked with vendors to maintain monitoring equipment
- utilize PI-Processbook to retrieve data when developing comprehensive storm reports
- provide individual storm event reports summarizing the wet weather events and their impact on the Wastewater System Operations and NPDES permit limitations

### **Project Manager – Senior Designer, Engineering Department / Capital Department**

Assist various DITP departments with engineering maintenance services for equipment repairs, improvements and upgrades. Develop maintenance service contract documents for thermal power plant power generating equipment from inception to award:

- maintain budgets and manage contractors for maintenance service contracts on DITP;
- planned & managed both scheduled and emergency equipment repairs with contractors;
- established maintenance and repair requirements for equipment under warranty with vendor;

### **Senior Engineer, Energy Department**

Assisted Senior Program Manager in implementing the MWRA Energy policy throughout the water and sewerage divisions:

- managed consultant contract providing energy audits within selected Authority facilities;
- maintained data base for monitoring electricity usage and evaluation up to and including the 1998 Massachusetts electric supply industry de-regulation initiative;

### **Project Engineer, Waterworks Division, Planning Department**

Developed and implemented various technical assistance projects for water and energy conservation technology and practices within commercial and industrial facilities;

- designed, scheduled, and managed budgets for comprehensive facility water audits
- assessed new & existing facilities for efficient water use practices and improved technologies;

**Project Engineer, Wastewater Engineering Department**

Responsible for engineering support during the initial Combined Sewer Overflow (CSO) Facility Plan for wastewater transport system improvements under the direct supervision of the Senior Program Manager:

- assisted in coordinated with CSO member community public works departments investigations during various sewer system conditions;
- participated in community and regulatory agency meetings, during Authority CSO planning and in-system construction projects evaluations;
- managed construction contracts from inception to completion for small in-system improvements in the City of Chelsea;

1984-1986

SCHLUMBERGER Ltd. (SEDCO-FOREX DIVISION)

Dallas, TX

**Third Assistant Engineer**

- responsible for all engine room equipment during operations on a dynamically positioned drill ship involved in the offshore oil industry;

**EDUCATION**

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**Massachusetts Maritime Academy**

B.S. Marine Engineering, 1983

**Wentworth Institute** – Continuing Education Professional Certificates Program:

2011 – Construction Management / 2009 - Facility Management / 2008 – Construction Technology

**TRAINING / CERTIFICATES**

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2007 U.S. Coast Guard License (*renewal*) Second Assistant Motor - Unlimited Horsepower

1996 Massachusetts Wastewater Operators License, Grade 5-C  
Massachusetts Collection System Certificate, Grade 4

**Peterson School of Steam Engineering:** Certificates

Facilities Equipment Maintenance, 1994 / Third Assist. Stationary Engineer, 1991

Microsoft Word, Excel, PI-Processbook, Windows Operating System

**ASSOCIATIONS**

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WEF – Water Environmental Federation

ASME – American Society of Mechanical Engineers

CSI – Construction Specification Institute

**REFERENCES**

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Furnished upon request.



**MWRA  
POSITION DESCRIPTION**

**POSITION:** Program Manager, Wastewater Operations

**PCR#:**

**DIVISION:** Field Operations

**DEPARTMENT:** Wastewater Operations

**BASIC PURPOSE:**

Assists the Manager of Operations in managing the operation of the Authority's wastewater pumping stations, headworks and CSO facilities. Develops Standard Operating Procedures, coordinates maintenance programs, acts as a construction liaison and manages wet weather events as well as a technical advisor.

**SUPERVISION RECEIVED**

Works under the general supervision of the Manager of Operations

**SUPERVISION EXERCISED:**

Will exercise close supervision over wastewater operations staff.

**ESSENTIAL DUTIES AND RESPONSIBILITIES:**

- Develops, updates and ensures implementation of Standard Operating Procedures (SOPs) for all wastewater facilities. Develops operational and inspection protocols for operations staff as directed by the Manager of Operations.
- Manages predictive and preventive maintenance initiatives. Works closely with Operations Supervisors, Maintenance Managers and Work Coordination Managers to ensure all work orders are issued, completed and closed in a timely manner. Conducts periodic audits on Operations staff maintenance activities. Attends weekly maintenance coordination meetings. Utilizes Maximo to open and process work orders as required.
- Responsible for coordinating all aspects of communication/Tellog, PLC, system alarms with SCADA, Metering and Engineering groups.
- Responsible for operations involvement on construction projects, attend construction meetings and participates in the construction and start-up of new facilities.

- Performs facility audits, facility inspections and staff scheduling issues as directed by the Manager of Operations. Responsible for scanner system and updates of new technology associated with facility automation as needed.
- Manages departmental records relating to the Yellow/Orange Notebooks.
- Utilizes PI Processbook to monitor facility operation and to gather information to produce reports. Gathers data and formulates storm reports for Wastewater Operations.
- Acts as liaison to the safety coordinator and implements recommendations as needed. Responsible for the safe operation of all wastewater system components and ensures all staff are in compliance with all MWRA safety policies and procedures.
- Manages wet weather events for Wastewater Operations.

**SECONDARY DUTIES:**

- Performs related duties as required

**MINIMUM QUALIFICATIONS:**

Education and Experience:

- (A) B.S. in Mechanical, Electrical, or Civil Engineering.
- (B) Demonstrated knowledge of equipment and practices related to construction, maintenance and wastewater operations as acquired by seven (7) to nine (9) years experience in the field.
- (C) Any combination of education and experience

Necessary Knowledge, Skills, and Abilities:

- (A) Ability to read and interpret plans and drawings.
- (B) Proficient in the use of personal computers and associated Microsoft Office software programs, including Word, Excel, and Access.
- (C) Experience with the CMMS software MAXIMO.
- (D) Trained in Confined Space Entry and capable of entering, of setting up, installing, disassembling confined space equipment and ability to work in a confined space

**SPECIAL REQUIREMENTS:**

A valid Grade 5 Wastewater Operator's license, or the ability to obtain within six months

A valid Grade 4 Collections System Certification, or the ability to obtain within six months

A valid Massachusetts Class D Motor Vehicle Operators License.

**TOOLS AND EQUIPMENT USED:**

Office equipment as normally associated with the use of telephone and personal computer.

**PHYSICAL DEMANDS:**

The physical demands 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 fingers, handle, feel or operate objects, including office equipment or controls and reaches with hands and arms. 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 focus.

**WORK ENVIRONMENT:**

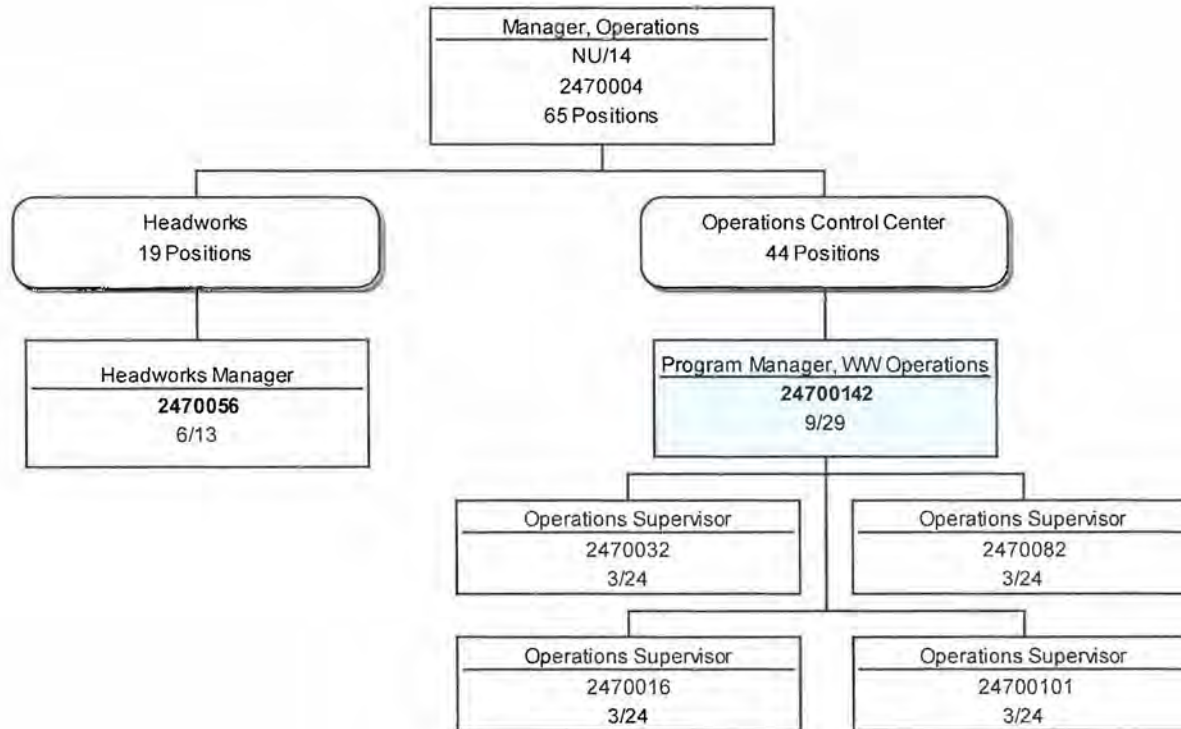
The work environment characteristics here are representative of those an employee encounters while performing the essential functions of this job.

While performing the duties of this job, the employee regularly works in an office environment. The employee will also be 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 setting.

**July, 2012**

## Operations - Wastewater O&M





# 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

*Chairman:* R. Sullivan  
*Vice-Chair:* J. Carroll  
*Secretary:* J. Foti  
*Board Members:*  
J. Barrera  
K. Cotter  
M. Gove  
V. Mannering  
A. Pappastergion  
B. Swett  
J. Walsh

## **BOARD OF DIRECTORS' MEETING**

to be held on

Wednesday, October 17, 2012

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**
  - A. **Annual Meeting:** Election and Appointment of MWRA Officers and Committee Assignments
- III. **REPORT OF THE EXECUTIVE DIRECTOR**
- IV. **BOARD ACTIONS**
  - A. **Approvals**
    1. PCR Amendments – October 2012 (ref. P&C A.1)
    2. Appointment of Program Manager, Wastewater Operations (ref. P&C A.2)
  - B. **Contract Awards**
    1. Lawson Professional Services: Infor Global Solutions (ref. AF&A B.1)

**B. Contract Awards (continued)**

2. Technical Assistance Consulting Services, Deer Island Treatment Plant: AECOM Technical Services Inc., Contract 7399; Fay, Spofford & Thorndike, LLC, Contract 7400; and Brown and Caldwell, Contract 7434 (ref. WW B.2)
3. Supply and Delivery of Soda Ash for the John J. Carroll Water Treatment Plant: OCI Chemical Corporation, WRA-3518 (ref. W B.1)

**C. Contract Amendments/Change Orders**

1. Lynnfield/Saugus Pipeline: Albanese Brothers, Inc., Contract 6584, Change Order 23 (ref. W C.1)

**V. CORRESPONDENCE TO THE BOARD**

- A. Letter from the Advisory Board regarding DCR Forestry Program

**VI. OTHER BUSINESS**

**VII. EXECUTIVE SESSION**

**A. Real Estate:**

1. Watershed Land Acquisition Approval

**B. Litigation:**

1. Request for Authorization to Extend the Contract with Klestadt & Winters LLP for Legal Services in Connection with the Lehman Brothers Bankruptcy
2. Payment of Judgment in William A. Davison, Jr., Marjorie D. Boyce, and Paul W. DiMaura, Trustees of Heather Realty Trust v. MWRA, Suffolk Superior Ct., Civil Action No. 08-1525B
3. Summary of Litigation and Claims

**VIII. ADJOURNMENT**

**Meeting of the Board of Directors****September 12, 2012**

A meeting of the Board of Directors of the Massachusetts Water Resources Authority was held on September 12, 2012 at the Authority headquarters in Charlestown. Chairman Sullivan presided. Present from the Board were Messrs. Barrera, Foti, Mannering, Swett and Walsh; Mr. Cotter joined the meeting in progress. Messrs. Carroll, Gove and Pappastergion were 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, Stephen Estes-Smargiassi, Director of Planning, Mark Johnson, Director, Metropolitan Operations, and Bonnie Hale, Assistant Secretary. The meeting was called to order at 1:05 p.m.

**TRIBUTE TO MARIE T. TURNER**

A moment of silence was observed for Marie T. Turner, Winthrop's representative on the Board of Directors since 1996, who passed away on July 25, 2012.

**APPROVAL OF MINUTES**

Upon a motion duly made and seconded, it was

Voted to approve the minutes of the Board of Directors' meeting of July 18, 2012, as presented and filed with the records of the meeting.

REPORT OF THE CHAIR

Chairman Sullivan welcomed new Board member Brian Swett, replacing James Hunt as a City of Boston representative, and Paul Flanagan, newly appointed Winthrop representative, who was observing the meeting pending his swearing-in by Governor Patrick.

(Mr. Cotter joined the meeting.)

REPORT OF THE EXECUTIVE DIRECTOR

Mr. Laskey recognized departing Boston Board member James Hunt and praised his support and guidance during his seven years on the Board of Directors, particularly his advocacy for various MWRA alternative energy projects, and presented him with some mementos. Mr. Hunt expressed his appreciation, and stated that MWRA was truly one of the best public agencies in the nation and that he valued his time spent on the Board of Directors.

Mr. Laskey reported on other matters, including the completion of audited financial statements, and had staff explain a reduced chlorine residual issue that had arisen in the Fells storage tank, not affecting water quality, and efforts underway to address it.

BOARD ACTIONS

APPROVALS

Options for Fiscal Year Close-out

Upon a motion duly made and seconded, it was

Voted to authorize the use of the fiscal year 2012 budget surplus of \$9.8 million to defease future debt service with the largest impact in 2016, resulting in lower Rate Revenue Requirements and consequently lower water assessments for MWRA communities. Further, to authorize the continuation of the Defeasance Account established for the first time in FY12, for depositing potential Capital



Finance budget surpluses during the year, with the intention of using the funds for a FY13 bond defeasance.

PCR Amendments – September 2012

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.

CONTRACT AWARDS

Installation of a Distributed Antenna System: In-Building Cellular, WRA-3489Q

Upon a motion duly made and seconded, it was

Voted to approve the award of Purchase Order Contract 3489Q/State Blanket Contract ITC45, for the installation of a Distributed Antenna System to the lowest eligible and responsible bidder, In-Building Cellular, and to authorize the Director of Administration & Finance, on behalf of the Authority, to execute and deliver said contract in the bid amount of \$489,830.45.

Struvite, Scum, Sludge, and Grit Removal Services at the Deer Island Treatment Plant: Clean Harbors Environmental Services, Bid WRA-3513

Upon a motion duly made and seconded, it was

Voted to approve the award of a two-year purchase order contract to provide struvite, scum, sludge, and grit removal services at the Deer Island Treatment Plant to the lowest eligible and responsible bidder under Bid WRA-3513, Clean Harbors Environmental Services, and to authorize the Director of Administration & Finance, on behalf of the Authority, to execute and deliver said purchase order contract in an amount not to exceed \$696,400.00.

Concrete/Steel Restoration and Coating Phase IV, Deer Island Treatment Plant: Atlas Painting and Sheeting Corp., Contract S513

Upon a motion duly made and seconded, it was

Voted to approve the award of Contract S513, Concrete/Steel Restoration and Coating, Phase IV, Deer Island Treatment Plant, to the lowest eligible and responsible bidder, Atlas Painting and Sheeting Corp., and to authorize the Executive Director, on behalf of the Authority, to execute and deliver said contract in the bid amount of \$1,839,000.00 for a term of 540 calendar days from the Notice to Proceed.

Technical Assistance Consulting Services, Deer Island Treatment Plant: AECOM Technical Services, Inc., Contract 7399; Fay, Spofford & Thorndike, Inc., Contract 7400; and Dewberry Engineers, Inc., Contract 7434

Consideration of this item was withdrawn.

(Mr. Laskey recused himself from the Board's consideration of the next item and left the meeting.)

Sudbury Aqueduct Pressurization and Connections Alternatives Analysis and MEPA Review: CDM Smith Inc., Contract 7352

Upon a motion duly made and seconded, it was

Voted to approve the recommendation of the Consultant Selection Committee to select CDM Smith Inc. to provide consulting services to the Authority for Sudbury Aqueduct Pressurization and Connections Alternatives Analysis and MEPA Review and to authorize the Chief Operating Officer, on behalf of the Authority, to execute Contract 7352 with CDM Smith Inc. in an amount not to exceed \$3,405,107.00 for a term of 1,095 days from the Notice to Proceed.

(Mr. Laskey returned to the meeting.)

CONTRACT AMENDMENTS/CHANGE ORDERS

Ultraviolet Disinfection Facilities at the John J. Carroll Water Treatment Plant: Daniel O'Connell's Sons, Inc. Contract 6924, Change Order 8

Upon a motion duly made and seconded, it was

Voted to authorize the Executive Director, on behalf of the Authority, to approve Change Order No. 8 to increase the amount of Contract No. 6924 with Daniel O'Connell's Sons, Inc., Ultraviolet Disinfection Facilities at the John J. Carroll Water Treatment Plant, in an amount not to exceed \$506,994.00 with no increase in contract term; and to authorize the Executive Director to approve additional change orders as may be needed to Contract No. 6924 in amounts not to exceed the aggregate of \$250,000.00 in accordance with the Management Policies of the Board of Directors.

EXECUTIVE SESSION

It was moved to enter executive session to discuss litigation, real estate and collective bargaining.

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

<u>Yes</u>	<u>No</u>	<u>Abstain</u>
Barrera		
Cotter		
Foti		
Mannering		
Swett		
Walsh		
Sullivan		

Voted to enter executive session for the purpose of discussing strategy with respect to litigation and collective bargaining and to consider the purchase, exchange, lease or value of real property, in that such discussion may have a detrimental effect on the litigating and negotiating positions of the Authority.

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

\* \* \* \*


EXECUTIVE SESSION

\* \* \* \*

The meeting returned to open session at 2:25 p.m. and adjourned.

IIA  
10/17/12

**STAFF SUMMARY**

**TO:** Board of Directors  
**FROM:** Richard K. Sullivan, Jr., Chairman   
**DATE:** October 17, 2012  
**SUBJECT:** Annual Meeting: Election and Appointment of MWRA Officers and Committee Assignments

**RECOMMENDATION:**

That the Board of Directors (1) designate this October 17, 2012 meeting as the Annual Meeting which, as provided in the Authority's by-laws, will be deemed a special meeting of the Board for the purpose of election of officers; (2) elect a Vice-Chairman of the Board; and (3) appoint a Secretary of the Board, an MWRA Treasurer, and such Assistant Secretaries and Assistant Treasurers of the Board as the Board deems appropriate. New Committee Chairs will be appointed approximately every two years.

To ratify the following appointments of Board members to standing Committees:

Administration, Finance and Audit	Wastewater Policy and Oversight	Water Policy and Oversight	Personnel and Compensation
Chair: J. Foti Vice Chair: J. Barrera	Chair: J. Walsh Vice Chair: P. Flanagan	Chair: A. Pappastergion Vice Chair: B. Swett	Chair: V. Mannering Vice Chair: K. Cotter
J. Carroll K. Cotter V. Mannering A. Pappastergion B. Swett J. Walsh	J. Carroll M. Gove A. Pappastergion B. Swett	J. Carroll J. Foti M. Gove V. Mannering J. Walsh	J. Barrera J. Carroll J. Foti A. Pappastergion J. Walsh

**DISCUSSION:**

Article IV, Section 1, of the by-laws, which specifies the officers to be elected, provides that:

“The Board of Directors shall annually elect one of its members as Vice-Chairman and shall annually appoint a Secretary and a Treasurer, who need not be members of the Board of Directors.”

The by-laws also provide that:

“Upon the recommendation of the Executive Director, the Board of Directors may also elect one or more Assistant Secretaries and Assistant Treasurers.”

The provisions of G.L. c. 32 § 20 (4 7/8 D), provide that:

“ . . . the secretary of the Authority shall be a member *ex officio*. . . .”

That same section of that statute further provides that a second member of the Retirement Board “. . . shall be appointed by the board of directors of the authority for a term of 3 years . . . .” Thomas J. Durkin is recommended for appointment as a member of the Retirement Board for a three-year term.

Currently, the following individuals serve as the MWRA’s officers:

Vice-Chairman: John J. Carroll  
Secretary: Joseph C. Foti  
Treasurer: Thomas J. Durkin  
Assistant Secretaries: Bonnie Hale  
Rose Marie Convery  
Assistant Treasurer: Matthew Horan  
Kathy Soni

The Chairman wishes to request that a motion be made to nominate the following as officers, and the Executive Director also recommends appointments of Assistant Secretaries and Assistant Treasurers as follows:

Vice-Chairman: John J. Carroll  
Secretary: Joseph C. Foti  
Treasurer: Thomas J. Durkin  
Assistant Secretaries: Bonnie Hale  
Rose Marie Convery  
Assistant Treasurers: Matthew Horan  
Kathy Soni

There are no special procedures for election of officers, except as governed by Robert’s Rules of Order. Thus, any Board member may make a nomination to elect an officer, and the nomination will carry upon a majority vote of the quorum.

V. A.  
10/17/12

Arlington • Ashland • Bedford • Belmont • Boston • Braintree • Brookline  
Dedham • Everett • Framingham • Hingham • Holbrook • Leominster  
Medford • Melrose • Milton • Nahant • Natick • Needham • Newton  
Revere • Saugus • Somerville • South Hadley • Southborough • Stoughton  
Watertown • Wellesley • Weston • Westwood • Weymouth • Wilbraham



Burlington • Cambridge • Canton • Chelsea • Chicopee • Clinton  
Lexington • Lynn • Lynnfield • Malden • Marblehead • Marlborough  
Northborough • Norwood • Peabody • Quincy • Randolph • Reading  
Stoughton • Swampscott • Wakefield • Walpole • Waltham  
Wilmington • Winchester • Winthrop • Woburn • Worcester

October 12, 2012

Richard K. Sullivan, Secretary  
Executive Office of Energy and Environmental Affairs  
100 Cambridge Street, Suite 900  
Boston, MA 02114-2534

Dear Secretary Sullivan:

With the words "to ensure public confidence in the stewardship of these forests, DCR will convene a team of scientists to conduct field visits, review and revise the principles guiding the watershed forestry program and hold public meetings to get input on the new guidelines," you, as DCR Commissioner, placed a moratorium on watershed forestry.

From there a 13-member Science and Technical Advisory Committee (STAC), chaired by U- Mass Amherst Professor Paul K. Barten, was assembled; 28 months later, we are still without a report. More importantly, we are still without an active forestry program.

Numerous deadlines have passed and communication with the committee's chairman has been sporadic. This cannot continue. A critical element of Judge Stearn's waiver of filtration was based on the watershed management plan; a critical element of that plan was a Forestry Management Plan. (See Attachment I.)

In addition, a secondary benefit of an active forestry program is revenue generated from logging, which offset watershed expenses. Ratepayers have lost potentially a million dollars in revenue. (See Attachment II.)

This past June, Chairman Barten called a STAC meeting and circulated a draft (which your staff is in receipt of), charged members with assignments and set a date of July 30<sup>th</sup> for the committee to reconvene and the report to be finalized. Another missed deadline has passed. (See Attachment III.)

The Advisory Board would offer the following recommendations to assist you in moving the process forward:

- Provide the committee 30 days to finalize and turn over this draft to start the public process/hearing phase.
- If this fails, remove Professor Barten as chair, circulate the draft report, reconvene the committee to ensure their edits and assignments were incorporated (they had until July 30<sup>th</sup> to submit their changes) and release the report to start the public process/hearing phase.

The Advisory Board offers its support in any way you believe appropriate.

Sincerely,

*Katherine H. Dunphy*  
Katherine Haynes Dunphy  
Chairman, MWRA Advisory Board

cc: John Carroll, MWRA Board of Directors  
Andrew Pappastergion, MWRA Board of Directors  
Joseph Foti, MWRA Board of Directors  
Fred Laskey, MWRA Executive Director  
Jonathan Yeo, Director, Division of Water Supply Protection  
Kathleen Baskin, Director of Water Policy, Executive Office of Energy and Environmental Affairs

UNITED STATES DISTRICT COURT  
DISTRICT OF MASSACHUSETTS

CIVIL ACTION NUMBER 98-10267

UNITED STATES OF AMERICA

v.

MASSACHUSETTS WATER RESOURCES AUTHORITY,  
and METROPOLITAN DISTRICT COMMISSION

MEMORANDUM AND ORDER ON A MOTION BY  
THE UNITED STATES FOR AN ORDER OF INJUNCTIVE RELIEF

May 5, 2000

STEARNS, D.J.

On February 12, 1998, the United States, on behalf of the federal Environmental Protection Agency ("EPA"), brought this enforcement action against the Massachusetts Water Resources Authority ("MWRA") and the Metropolitan District Commission ("MDC")<sup>1</sup>, alleging violations of the Safe Drinking Water Act ("SDWA"), 42 U.S.C. §§ 300f, et seq., and EPA's Surface Water Treatment Rule ("SWTR"), 40 C.F.R. Part 141. The United States seeks injunctive relief in the form of an order requiring the MWRA to build a filtration plant to treat the water that it draws from the Wachusett Reservoir to supply the metropolitan Boston area.

---

<sup>1</sup>The United States has named the MDC as a party because of its control of the Wachusett Reservoir and portions of the adjacent watershed. The United States maintains that the MDC is a necessary party within the meaning of Fed.R.Civ.P. 19 because without it "complete relief cannot be accorded." The Complaint does not allege that the MDC is in violation of any federal or state statute or regulation. On April 11, 2000, the MDC filed a "post-trial" motion to dismiss maintaining that "the evidence adduced at trial negates any notion that its presence [in this lawsuit] is either necessary or indispensable for the resolution of the single issue before this court." MDC's Memorandum, at 1 n.1.



XI. ULTIMATE CONCLUSIONS OF FACT AND LAW

(1) The story of Wachusett water quality in the last decade has been one of continuing improvement, in some respects gradual, in others dramatic, as MWRA management has sought to renovate the MWRA's system to avoid filtration. The milestones in this progress I identify as: (a) the passage by the Legislature of the 1992 Watershed Protection Act; (b) the strong public support generated by conservation groups for the MDC's largely successful efforts (to date) to preserve and protect the Wachusett watershed; (c) the full implementation of the gull harassment program; (d) the interim reconfiguration of primary and residual disinfection treatment and corrosion control; (e) the replacement of open storage reservoirs with covered storage facilities; (f) the implementation of an aggressive program to clean and/or replace mainline pipes; (g) the institution of a program to encourage rehabilitation of community distribution systems; and (h) the sewerage of septic systems in the Towns of West Boylston and Holden.

✓ (2) The Wachusett Watershed Protection Plan, as conceived and implemented, has been effective in maintaining the integrity of the watershed as a barrier against contamination of the Wachusett Reservoir.

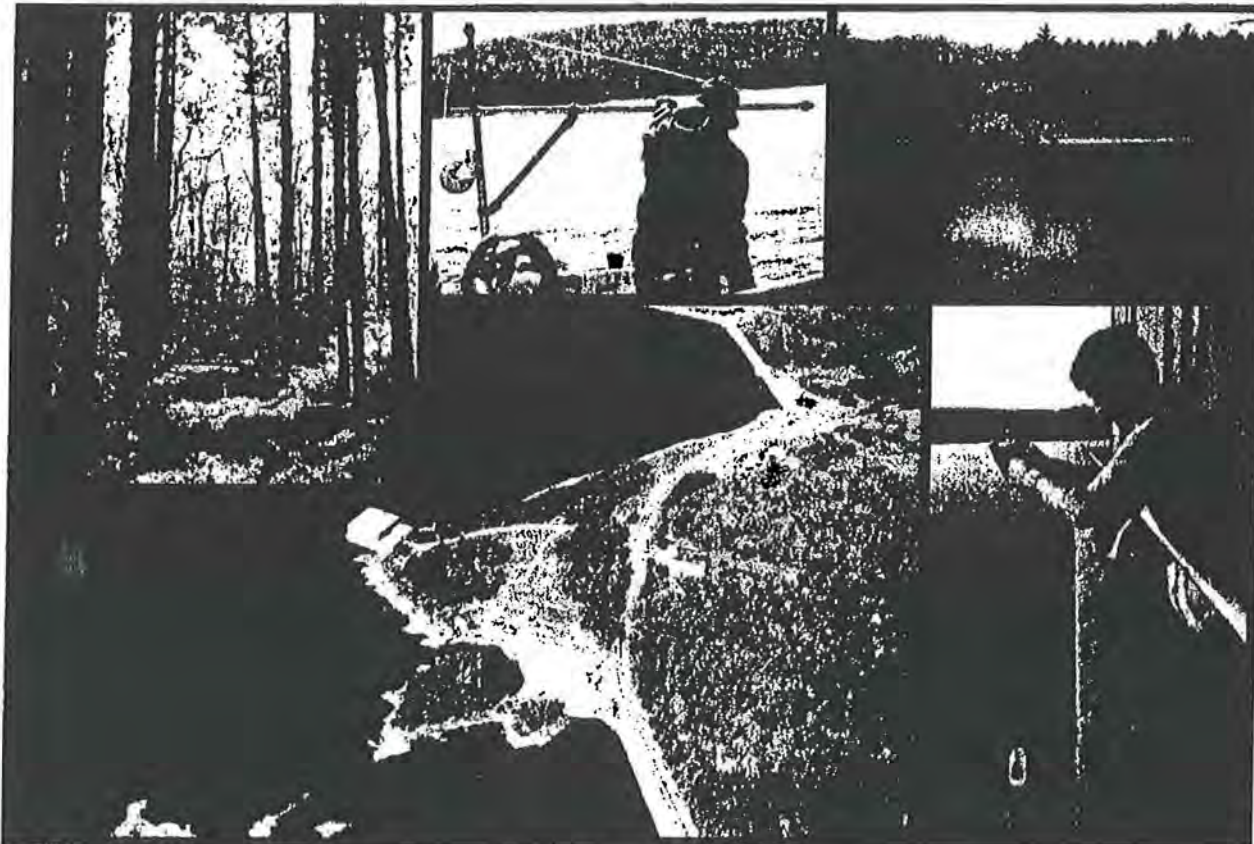
(3) I find credible the testimony of MWRA officials that the installation of filtration will diminish public support for the Watershed Protection Plan and will lead to increased public pressure to open restricted MDC lands to general recreational uses.

(4) There are no issues affecting the quality of Quabbin Reservoir water.

(5) There is no present threat posed by *Cryptosporidium* to the quality of Wachusett Reservoir water.



# Watershed Protection Plan Update



## for Metropolitan Boston Water System Wachusett Reservoir

Prepared by  
**Metropolitan District Commission/Division of Watershed Management**  
with assistance from  
Massachusetts Water Resources Authority  
and Camp Dresser & McKee Inc.

December 1998

#### 4.1.3.2 Five-Year Objectives

DWM has identified specific objectives for the coming five-year period.

1. Maintain the existing, efficient methods and processes for acquiring land (including MDC Real Property Office assistance).
2. Continue to acquire lands for all three watersheds with the \$8 million/year open space funds.

#### 4.1.3.3 Activities

1. Continue to conduct the Land Acquisition Program and acquire lands in the three watersheds. Generally 25% of funds are projected to be applied to Quabbin, 5% to Ware, and 70% to Wachusett. Specific purchases will be based on the annual budget, GIS models, and guidance from the Land Acquisition Policy Panel.
2. Continue to update GIS land acquisition model for Wachusett watershed and use the model with site walks and advice from the Land Acquisition Policy Panel to identify and set priorities for acquisitions. Incorporate information on the cost of maintaining properties that will be available from the land management plan. Continue to use the services of the MDC Real Property Office to complete survey, title, appraisal, engineering, and negotiation activities for new parcels.

## 4.2 Management of MDC Lands (including Forestry)

### *Accomplishments:*

- MDC established professional forest staff at Quabbin and Wachusett watersheds to plan and manage forests to improve long-term water quality protection.
- MDC conducts active silviculture on Quabbin, Ware, and Wachusett watersheds to effectively maintain healthy and diverse forests.
- DWM's silviculture practices follow BMPs stricter than the Massachusetts Forest Cutting Practices Act.
- MDC recently completed an inventory of Wachusett holdings.

### *Assessment:*

- The majority of the Wachusett forest is over 70 years old, and originates from plantation establishment during the first half of the century and from natural regrowth.
- The 15,000 acres of MDC-owned forests and fields provide a significant level of long-term water quality protection to Wachusett Reservoir.
- With the success of the Land Acquisition program, DWM has many new parcels, requiring assessment, analysis, and management.
- Although most MDC-owned land in the Wachusett watershed is forested, the number of non-forested MDC properties has increased due to the land acquisition program. DWM has identified the need for coordinated management of these fields, lawn and shoreline areas.

since 1992, including \$2.9 million in FY1998. PILOT disbursements since 1992 for the Wachusett Reservoir watershed communities of Boylston, West Boylston, Princeton, Sterling, Holden, Clinton and Rutland (Rutland is in both the Wachusett Reservoir and Ware River watersheds) totaled \$6.7 M, including \$1.1 million in 1998.

Monitoring Conservation Restrictions. 1,150 acres of the land owned by MDC is held with conservation restrictions. MDC monitors on a regular basis to ensure that the conditions set by these restrictions are achieved and maintained.

Leases. Historically, a limited amount of MDC lands were leased through the Department of Food and Agriculture. At present, only 196 acres or 1% of MDC Wachusett watershed lands are under lease; all represent continued use as hayfields. The historical policy set forth that when MDC purchases active agricultural land, DWM must notify DFA. DFA's policy is to encourage continuation of agriculture on that property via a lease. Recently, this policy was modified, and now DFA will consult with DWM and, when appropriate, allow continued haying only under a one-year duration special permit. The new permit includes an annual inspection by DWM.

Article 97. MDC is held to EOEA Article 97 Land Disposition Policy (February 19, 1998). This policy establishes as a general rule that EOEA agencies shall not sell, transfer, lease, or change the control or use of any interest of the Commonwealth in its open space land. MDC cannot, without demonstrating exceptional circumstances and the lack of any other option, effect (1) any transfer of ownership or interest, (2) any change in physical or legal control, or (3) any change in use whether by deed, easement, or lease. A revocable permit is allowed as long as there is no transfer of interest in real property, and there is no change in use in conflict with the agency's mission.

The MDC adopted its own land disposition policy for Division of Watershed Management Lands on April 30, 1998. This policy further defines the exceptional circumstances that must be met and the procedures to follow to help ensure that any potential disposition does not have an adverse impact on the Division of Watershed Management's statutory mandate to assure the availability of pure water for future generations and to protect, preserve and enhance the environment of the Commonwealth.

Management of New Acquisitions. As a result of the land acquisition program, MDC has many newly acquired parcels. For each new acquisition, DWM staff perform an initial assessment of the property, identification of any hazardous waste issues (including location of underground storage tanks), evaluation of forest stands, and decisions regarding demolition or maintenance of any structures on the parcel.

Management of Non-Forested Lands. MDC is responsible for management and maintenance of all its lands, including the shoreline areas, lawn areas, and fields, which do not fall under the Silviculture/Forestry program. In recent years, DWM has increased its use of different management techniques to aid related goals; for example, decreasing mowing frequency and keeping grass taller in key lawn areas along the shoreline to discourage Canada geese.

#### Silviculture (Forestry)

To improve long-term water quality protection, DWM deliberately manages the structure of the forest cover on these watersheds using silviculture. Silviculture is distinct from "logging".

Logging, or timber harvesting, is one component of silviculture, and the means for deriving income from a forest. In the context of silviculture, harvesting is also the means for bringing about regeneration of the forest and restructuring age/size classes to benefit watershed protection or habitat diversity, among other objectives.

The managed, diverse forest will be both more resistant and resilient to natural disturbances such as wind storms or insect infestations. In particular, maintaining a component of young to middle-aged forest within the overall forest retains vigorous nutrient uptake and preserves a "reserve forest" to immediately replace lost overstory trees.

DWM's forest management program encompasses the following activities:

- New acquisitions - Conducting site walk, boundary flagging, and qualitative assessment for forested areas of each newly acquired property. Assessment includes map of cover type using aerials and field walkover, and sample plots for species, diameter, and vigor class.
- Annual planning - Determining where and what requires harvesting due to diversity planning, storm damage, etc.
- Operations - Cutting (through permits), maintaining fire roads.

DWM conducts active silviculture on approximately 1,500 - 2,000 acres per year on the Quabbin watershed, 500 - 1,000 acres on the Ware River watershed, and 200 - 500 acres on the Wachusett and Sudbury watersheds. Each of these figures represents about 2 - 3% of the MDC ownership per year.

For any given forest stand under management, the frequency of return trips to harvest again (the "cutting cycle") seldom occurs more often than once every 15 - 30 years, once established as a diverse stand.

While active management is beneficial for the long term, it is possible that the activity itself could cause short-term problems. During 35 years of active silviculture on MDC watershed lands, no water quality degradation has been associated with these practices. Potential water quality threats associated with silviculture on the MDC watersheds are primarily controlled through the implementation of BMPs specified by the Massachusetts Forest Cutting Practices Act and by additional DWM water quality specifications in timber harvesting permits (see **Table 4-5**). Applied carefully, BMPs have been demonstrated to eliminate significant water quality threats associated with silviculture.

---

#### **Silviculture BMPs**

BMPs include specifications for erosion control in road and stream crossing designs, the maintenance of filter strips along water courses, limitations on equipment size and type, requirements for petroleum-absorbing pads to contain spills, and restrictions on logging when ground conditions will not support equipment.

DWM implements BMPs through its timber harvest permits and careful supervision by DWM forestry staff of operations on its own holdings. During active timber harvesting operations, DWM foresters may visit operations as often as once a day, and both reserve and exercise the right to shut down operations either for non-compliance or due to extremes in weather that increase the risks of detrimental effects on water quality.

---

DWM forestry activities also include protecting the forest from wildfires, maintaining woods access roads (used for forest management, surveillance of public access, water sampling, and fire protection), and using BMPs.

DWM recently completed an inventory of its Wachusett holdings and plans to complete a ten-year land management plan similar to the Quabbin MDC Land Management Plan (1995). The Quabbin management approach was evaluated by the Smart Woods green certification program in 1997.

Table 4-5  
DEM (Ch. 132) and DWM Forestry BMPs

Item	DEM	DWM
Filter Strips	50 feet; variable width along streams >25 feet in width, ponds >10 acres in size and along Outstanding Resource Waters	same; but also variable width along all streams, river and water bodies adjusted for soil drainage characteristics
Buffer Strips	50 feet; 100 feet along designated scenic roads	same
Stream Crossings	Allows for the unbridged crossing of continuously flowing streams unless within 1,000 feet of a public water supply reservoir	All crossings of permanently flowing streams will be bridged
Wetlands	Allows machinery to operate on deep muck soils when dry or frozen conditions will support the equipment	No equipment allowed on muck soils
Vernal Pools	Regulations only apply to Certified vernal pools	Regulations and recommendations applied to all vernal pools
Logging Equipment	No regulations	Weight and width of equipment are restricted based on site conditions

Smart Woods is an internationally certified program to evaluate forest management operations for sustainability and state-of-the-art BMPs. The MDC Quabbin holding became the first public land in the U.S. to achieve the status of "green certified", after an extensive independent evaluation by the team of Smart Woods experts. Part of the process involved comparing MDC BMPs to three other large water supply forests in the Northeast. MDC's BMPs compared very favorably in comparison to the other water suppliers. Forest management at the Wachusett watershed follows the same management approach and BMPs that were evaluated at Quabbin.

#### 4.2.2 Assessment

Ownership Policies. DWM policies regarding its ownership all have been re-evaluated in recent years and modified as necessary. With the increase in the number of conservation restrictions, DWM will incorporate monitoring needs into the planned Land Management Plan.

Management of New Acquisitions. DWM has in place a system to evaluate and address newly acquired parcels. Through the planned Land Management Plan, DWM will formalize relevant

Attachment II

**DCR Forestry Sales History FY05- FY12 Actuals and FY13 Budget**

<b>Line Item</b>	<b>FY05 Actual</b>	<b>FY06 Actual</b>	<b>FY07 Actual</b>	<b>FY08 Actual</b>	<b>FY09 Actual</b>	<b>FY10 Actual</b>	<b>FY11 Actual</b>	<b>FY12 Actual</b>	<b>FY13 Budget</b>
Forestry Sales	\$892,390	\$592,367	\$558,059	\$573,005	\$348,028	\$238,723	\$135,432	\$42,549	\$150,000
<b>Forestry Sales Averages</b>									
FY05-FY12 Average	\$422,569								
FY05-FY10 Average	\$533,762		Before moratorium						
FY11-FY12 Average	\$88,991		After moratorium						
Projection for FY13:	\$150,000								



Trees harvested through a select cutting method in the Quabbin Watershed area in Hardwick. (T&G File Photo/TOM RE

By Bradford L. Miner TELEGRAM & GAZETTE STAFF

Add a comment

**BELCHERTOWN** — A panel of 13 experts reviewing forest management practices at the Quabbin, Ware River, Wachusett and Sudbury watersheds will soon wrap up its two-year study and recommend resumption of some timber harvesting to ensure continued water quality for 2.2 million residents.

During that period limited logging occurred on the watersheds, based on timber contracts that pre-dated a moratorium imposed by the state Department of Conservation and Recreation in response to a public outcry over clear-cut logging on state land.

At a review of draft recommendations Friday by the Science and Technical Advisory Committee on the University of Massachusetts at Amherst campus,

Receipts & Rewards Gift With Purchase  
Present \$200\* worth of receipts at  
Simon Guest Services dated between  
8/24/12 and 9/27/12 from our two  
signature stores and

Receive a FREE Coach®  
Miranda also hangs a tag

**SOLOMON POND MA**  
Exit 25B off I290 / I495 in Marlboro  
Shopping Line 508.303.8255



Jonathan Yeo, director of Water Supply Protection for DCR said the division's own tweaking of forest management practices, combined with the panel's recommendations, should result in new timber cc awarded within the next six months or so. Mr. Yeo said DCR Commissioner Edward M. Lambert Jr. h say and protocol for forest management at Quabbin, Ware River, Wachusett and Sudbury will follow watershed advisory committees, the Massachusetts Water Resources Authority and the public.

Paul K. Barten, chairman of the panel and a forestry professor at UMass, said water quality had been overarching priority for the panel in weighing the pros and cons of active and passive watershed ma The draft recommendations take into account the history of watershed management from Quabbin e Boston, and the fact if there was no forest filtration system in place, the alternative would be a mult filtration plant in Marlboro adjoining the Carroll Treatment Plant.

The goal of the recommendations is the maintenance of a diverse forest that would be resilient to m disasters.

William E. Pula, regional director of Quabbin and Ware River, noted that protection of sensitive area place at Quabbin with a 200-foot zone along the Swift River tributaries and a 400-foot zone along th shoreline.

Mr. Barten noted that Quabbin was no stranger to management practices designed to protect the wi citing the deer hunt that was instituted in 1991 in Pelham to counter the heavy deer browse across reservation that was preventing forest regeneration. The draft also cites the active management of l and Canada geese by DCR personnel to maintain water quality.

Robert O'Connor, director of Land and Forests for the Executive Office of Energy and Environmental the report should highlight what kind of forest best ensures water quality.

"That's already happening at Quabbin, but it needs to be articulated," Mr. Barten said.

Specific recommendations will be forthcoming once review comments from the panelists have been and the document is submitted to DCR. As a nod to the reason the panel first established in 1996 w reconvened in 2010, Mr. Barten said the final report and recommendations would have to be not on compilation of the best watershed science, but socially acceptable and politically viable.

Add a comment



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