



MWRA Advisory Board Summary  
of the  
MWRA Board of Directors Meeting  
Wednesday, August 11, 2010

A meeting of the Board of Directors of the Massachusetts Water Resources Authority was held on July 15, 2010 at the Charlestown Navy Yard. **Present:** Chair Ian Bowles, Joel Barrera and Michael Gove, Gubernatorial Appointees; John Carroll and Andrew Pappastergion, Advisory Board Representatives; James Hunt III, City of Boston Representative; Jack Walsh, City of Quincy Representative; Marie Turner, Town of Winthrop Representative. **Absent:** Joseph Foti, Advisory Board Representative; Vincent Mannerling and Kevin Cotter, City of Boston Representatives.

REPORT OF THE CHAIR

MWRA Board Chairman Ian Bowles said that he was in attendance for the removal of the first half of the coupling at Shaft 5A, noting that staff has spent many long hours in search of the coupling and ensuring its safe removal. Staff has done fine work.

Chairman Bowles also recognized the presence of John Bambei, Chief of Engineering for Denver Water, who is a member of the expert panel appointed by the MWRA to examine what caused the loss of the insulating coupling for Shaft 5A. Chairman Bowles expressed his appreciation for Mr. Bambei's service.

REPORT OF THE EXECUTIVE DIRECTOR

MWRA Executive Director Fred Laskey stated that a significant milestone has been reached with the completion of the East Boston CSO Contracts, which had a combined total of \$90 million. The East Boston Combined Sewer is now operational.

DCR has located Asian Longhorned Beetles at portions of the Quabbin Reservoir. One tree has been cut down. Because of the long hot summer, the temperature of the water is higher. Staff has been seeing a flurry of activity related to the warm water.

Mr. Laskey offered congratulations to the staff of Deer Island for receiving its third gold award from the National Association of Clean Water Agencies for wastewater facilities with no permit violations in the preceding year.

The Authority has recently seen an increase in communities with water issues. The Town of Ashland has been working with Framingham for an emergency hookup.

CONTRACT AWARDS

STRUVITE, SCUM, SLUDGE AND GRIT REMOVAL SERVICES, DEER ISLAND TREATMENT PLANT: CLEAN HARBORS ENVIRONMENTAL SERVICES, WRA-3172

The Board 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, Clean

Harbors Environmental Services, and to authorize the Director of Administration and Finance, on behalf of the Authority, to execute and deliver said contract in the bid amount of \$855,150.00.

Struvite build-up (a by-product of anaerobic sludge digestion) typically requires the specialized services and industrial equipment of specialty contractors, often working in confined spaces. In addition to the struvite, staff has also found the need to use these specialized services to clean severe blockages and the build-up of scum, sludge and grit in a number of other process areas of the plant.

John Vetere, Director of the Deer Island Treatment Plant, said this is a two-year contract to remove materials above and beyond what in-house staff can remove. The contract has proven to be very effective.

Board Member Andrew Pappastergion asked how the struvite problem is. Mr. Vetere said it is like hardening of the arteries; it is magnesium ammonia phosphate, which can clog pipes and is cement-like. High pressure machinery is needed to get rid of the struvite. Chemicals can be added to the digesters to help prevent struvite from forming.

The FY11 Current Expense Budget (CEB) includes \$200,000 for the first year of this contract. The FY11 Capital Improvement Program (CIP) includes approximately \$180,000 for preparation of the primary clarifiers for grit, scum and sludge removal, an expense which will now not occur under the CIP contract. Appropriate funding will be included in the Proposed FY12 CEB for the remaining term of this contract.

## CONTRACT AMENDMENTS/CHANGE ORDERS

### JOINTLY-FUNDED COOPERATIVE RESEARCH AGREEMENT BETWEEN MWRA AND NATIONAL DATA BUOY CENTER FOR AUGMENTATION OF BUOY 44013 TO OBSERVE ADDITIONAL OCEANOGRAPHIC VARIABLES: CONTRACT S448,

#### AMENDMENT 1

The Board voted to authorize the Executive Director, on behalf of the Authority, to approve Amendment No. 1 to extend the term of Contract S448, Jointly-Funded Cooperative Research Agreement between MWRA and National Data Buoy Center, by two years to December 31, 2012, with no increase in contract amount.

The Outfall Ambient Monitoring Plan, which includes specific monitoring requirements for potential outfall effects, is attached to the MWRA's National Pollutant Discharge Elimination System (NPDES) permit for the Deer Island Treatment Plant. Continuous measurement of certain biological parameters such as the abundance of algae and the concentration of dissolved oxygen in surface waters are a required special study under MWRA's Ambient Monitoring Plan. Staff anticipates that MWRA will be required to continue to perform this monitoring when the new permit is issued.

MWRA has been addressing that requirement in the most cost-effective manner by partnering with the National Oceanic and Atmospheric Administration (NOAA) to add ocean sensors to NOAA's weather buoy located five miles southeast of the Deer Island outfall diffuser. The continuous data from the buoy supplements the data from ship surveys and together they provide information of water quality and water movement near the outfall and address concerns about potential environmental effects of the discharge.

For reasons beyond the control of the National Data Buoy Center, including Hurricane Ike in 2008, along with the loss of special funding promised by Congress for this and other related projects, work on this project fell behind by almost two years. Because of these delays, the contract is being extended by two years and since two payments were never made due to the delay in starting, there are sufficient funds remaining in the contract and no increase in contract amount will be necessary.

### CENTRIFUGE SERVICES, DEER ISLAND TREATMENT PLANT: ALFA LAVAL, INC., CONTRACT S471, CHANGE ORDER 1

The Board voted to authorize the Executive Director, on behalf of the Authority, to approve Change Order No. 1 to increase the amount of Contract No. S471 with Alfa Laval, Inc., Centrifuge Services, Deer Island Treatment Plant, in a lump sum amount of \$142,898.00.

To ensure proper efficiency of de-watering and operational performance, each of the MWRA's 12 centrifuge units require an overhaul after approximately 25,000 hours of run-time; staff rotate six to eight units in operation based on run-time and dewatering efficiency.

Under this contract, MWRA staff will remove each centrifuge's rotating assembly from its frame and place it onto a flatbed trailer truck for shipment to Alfa Laval's repair facility in Virginia where the inspection and repair work will be completed. In some instances, the gear boxes also require overhaul. Upon completion of the work, the units will be shipped back to Deer Island and MWRA staff will then reinstall the equipment.

During the first year of the contract, four rotating assemblies (instead of two) and three gearbox units required overhaul and repair work. The amount of the repair work required was more extensive than staff anticipated; the repairs were urgent because the equipment was unable to process sludge. The contract contains an allowance for replacement parts but the frequency of repairs was not anticipated so the original allowance for repair parts has been expended much sooner than expected.

The cumulative value of all change orders to this contract will be \$142,898.00, or 28% of the original contract amount of \$514,722.50, for an adjusted contract amount of \$657,620.50. The FY11 CEB contains \$150,000 for the second year of this contract. Adequate funding will be included in subsequent CEB requests for the remaining term of the contract.

#### **NORTH DORCHESTER BAY CSO PUMPING STATION AND SEWERS: WALSH CONSTRUCTION COMPANY, CONTRACT**

##### **6245, CHANGE ORDER 4**

The Board voted to authorize the Executive Director, on behalf of the Authority, to approve Change Order No. 4 to increase the amount of Contract No. 6245 with Walsh Construction Company, North Dorchester Bay CSO Pumping Station and Sewers, in an amount not to exceed \$107,545.88. Further, to authorize the Executive Director to approve additional change orders as may be needed to Contract 6245 in amounts not to exceed the aggregate of \$250,000.00 and 180 calendar days.

This change order will allow for additional work during installation of a 24-inch, ductile-iron force main along East Broadway. During installation, the Contractor encountered 20 separate locations where the work was impacted by existing gas and electric utilities, which crossed the trench excavation and were either not shown on the record drawings or in a deteriorated condition requiring immediate repair by the utility.

The Contractor has encountered a similar cluster of utilities on O Street in South Boston, with several unmarked. In this area, the Contractor will be jacking under the utilities; this work will be the subject of an upcoming change order.

The cumulative value of all change orders to this contract is \$270,010.81, or 1.04% of the original contract amount of \$25,871,994.00, for an adjusted contract amount of \$26,142,004.81. Work on this contract is approximately 41% complete.

The FY11 CIP budget includes \$26,037,000.00 for Contract 6245, resulting in the Contract being \$105,004.81 over budget. This amount will be covered within the five-year CIP spending cap.

## **INFORMATION**

#### **DELEGATED AUTHORITY REPORT – JULY 2010**

Staff presented a listing of actions taken by the Executive Director under delegated authority for the period July 1 through July 31, 2010.

#### **FY10 PRELIMINARY YEAR-END FINANCIAL RESULTS**

Total year-to-date expenses are lower than budget by \$6.9 million, or 1.2%, and total revenues are greater than budgeted by \$580,000, or 0.1%, for a net variance of \$7.5 million after the June 2010 defeasance of \$21.8 million.

The largest variances are for the favorable variable rate for Debt Service of \$18.7 million; lower Local Water Pipeline Commercial Paper of \$4.1 million; lower net direct expenses of \$3.5 million, mostly for maintenance, wages and salaries, and chemical spending; lower Pension expenses of \$2.8 million for not making the voluntary payment; and \$898,000 for delayed receipt of State Revolving Fund (SRF) funds. The underspending is offset by the FY10 defeasance of \$21.8 million and \$1.8 million in higher indirect expenses, mostly related to insurance claims for the Cottage Farm oil spill, Squantum Force Main repair, and damaged equipment during the wet weather events. The year-end surplus is \$29.3 million before the defeasance.

Board Member Jack Walsh asked if staff had done anything to resolve the workers' compensation item, other than adjust it upward. Budget Director Kathy Soni said yes; this year the severity of the cases was more pronounced than in prior years. Seven settlements were made this year, for which the benefit will be seen in the future. Human Resources Director Robert Donnelly added that it was a tough year medically because there were 21 significant surgeries, twice the amount of the previous year's. Staff is working toward settlements on several cases, working with a legal partner; after that process, hopefully there will be a reduction.

Mr. Laskey added that the Authority is aggressive in its management of these cases to confirm the validity of the claims.

Board Member Joel Barrera said variable rate debt has been dramatically lower; is that continuing still? Ms. Soni said yes; staff has seen the preliminary numbers in July and are looking at \$1.5 million under-spent on the debt side.

#### **UPDATE ON SHAFT 5 WATER MAIN BREAK**

*[In addition to Mr. Bambei, the Chairperson of the independent panel of experts that will examine the circumstances that led to the loss of the insulating coupling, Zorica Pantić, President of the Wentworth Institute of Technology, was included in the update via telephone.]*

MWRA Chief Operating Officer Michael Hornbrook reported that the first piece of the coupling was discovered on the north side of the pipe during excavation. This piece of coupling was found outside the originally constructed piles and lagging with the top approximately four feet lower than the invert of the ten foot diameter waterline. The rest of the piece of coupling was running downward toward and under the waterline. The top end of the coupling had no bolts or nuts in the four exposed bolt holes.

To continue the excavation to recover the coupling piece and to address the possibility that the excavation might compromise the support of the repaired water line and the safety of persons within the worksite, a trench support system was installed (due to the depth of the coupling, the soil conditions and the close proximity to the ten-foot water main and the Hultman Aqueduct), a well point dewatering system was also installed to lower the groundwater, and a ten-inch waterline between the Hultman and the MetroWest was cut and capped.

After installation of the excavation support and dewatering systems, excavation to recover the coupling piece continued. Hand digging began toward and under the ten-foot diameter water main. The end of the first piece of the coupling was discovered approximately seven feet below the invert of the water main (beneath the concrete collar poured around the welded steel strap used for the emergency repair of the pipe), twisting at times beneath the large thrust block and terminating at or near the sidewall of the water main.

The end of the first piece of coupling was found to be attached to the second piece of the coupling by one bolt and four nuts with washers (three bolts and nuts were missing). The two pieces of coupling were misaligned. The second piece (exposed by about 8 to 12 inches) appears to be running deeper and further beneath the water main, although its actual orientation is unknown. Ground water control continues to be a problem. The current system supplemented by sumps is just maintaining a groundwater level at the current bottom of the excavation. Soils under the water main were sliding into the excavation under the pipe requiring the need to install some timber lagging and rock to minimize soil loss under the pipe.

In addition to the one remaining bolt and nuts joining the two pieces of the coupling, an additional half bolt with two nuts that visually appeared to be the same as the one bolt and nut on the coupling was also found in the excavation. Previously, a half bolt with similar physical appearance had been discovered.

Mr. Hornbrook stated based on discussions with the Independent Panel, staff had the lab take a number of forensic photos of that condition and all items removed were sent to the lab.

Mr. Barrera said one of the key things is what risk is involved in getting the other piece of the coupling and how close this recovery would be to creating a risk that is unacceptable. Mr. Hornbrook said risks and options will be discussed in Executive Session and a decision will be made on how to proceed.

Mr. Hornbrook stated that the MWRA has asked Camp Dresser & McKee (CDM) to come up with some projections on where the other half of the coupling may be; there is only eight inches of the coupling exposed and these projections would be for the next 16 feet. CDM will also provide options for moving forward, including the risks and costs.

The CDM representative displayed the site plan and described the outlay to the Board of Directors and ran through different projections.

Board Member Michael Gove asked why the coupling could not just be pulled out. Mr. Hornbrook said staff does not know if the coupling is curved or what it is curved around (pipe, block, more soil); if we pull it out, it will pull out anything in front of it.

Mr. Hornbrook said the MWRA has asked CDM to provide both the best and worst case scenarios and what is necessary to move forward. Both MWRA and CDM agree that the pipe needs to be supported better and that more dewatering is needed.

Board Member John Carroll said it made no sense to him to pull the coupling out of the ground without a guarantee that it would help to resolve the issue. It will cost a tremendous amount of time and money. The CDM representative said there is no scenario to remove the coupling that would be fast, cheap or without risk.

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*This summary does not include every item discussed by the Board, nor the full extent of the discussions. Please contact Mary Ann McClellan at the Advisory Board office with questions, comments or requests for more information.*