

## **MWRA ADVISORY BOARD**

*Summary of*

### **MWRA BOARD OF DIRECTORS' MEETING**

October 11, 2006

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A meeting of the Board of Directors of the MWRA was held on October 11, 2006 at the Deer Island Wastewater Treatment Plant. Present: Chair Robert Golledge, Lucile Hicks and Rudolph Banks, Gubernatorial Appointees; John Carroll, Andrew Pappastergion and Joseph Foti, Advisory Board Representatives; Vincent Mannering and James Hunt III, City of Boston Representatives; Joseph MacRitchie, City of Quincy Representative. Absent: Kevin Cotter, City of Boston Representative; Marie Turner, Town of Winthrop Representative.

### **AGENDA**

#### **Report of the Chair**

Secretary of Environmental Affairs Robert Golledge, Chairman of the MWRA Board of Directors, designated the October 11, 2006 meeting as the official Annual Meeting of the Board of Directors. The Board voted to elect John Carroll as the Vice-Chairman of the Board; and appointed Joseph MacRitchie as Secretary of the Board, Ralph Wallace as Treasurer, Bonnie Hale and Rose Marie Convery as Assistant Secretaries of the Board and Seth Newton as Assistant Treasurer of the Board; and ratified the appointment of Board members to standing Committees.

#### **Report of the Executive Director**

MWRA Executive Director Fred Laskey reported the MWRA received a favorable decision yesterday in the Superior Court Civil Action filed by the Friends of the Blue Hills (FOB) regarding the Blue Hills Covered Storage Project. Judge Patrick F. Brady dismissed FOB's complaint, ruling that MWRA and the Department of Environmental Protection (DEP) have followed the law. Further, the Judge awarded costs of action be reimbursed by the plaintiffs to DEP and MWRA.

Mr. Laskey noted that the Capital Improvement Program document was mailed on October 6, the earliest distribution of this document in many years.

The Board may have seen news accounts of domicile vehicle usage for Commonwealth employees. Staff is preparing a report to bring the Board up-to-date on the 40 domicile vehicles that MWRA has identified from its fleet that have sound reasons for being allowed home with employees. The Authority has a clear policy that personal use of these vehicles is prohibited.

Mr. Laskey noted that a fifth MWRA employee, Carmen "Doug" Caponigro has been called to active duty. Mr. Caponigro, a Civil Engineer at Deer Island, will serve in Kosovo for a 14-month deployment.

Mr. Laskey informed the Board that Board Member Marie Turner underwent successful heart surgery on Tuesday, October 10, and extended his good wishes for a speedy recovery.

## APPROVALS

### **Approval of Section 1 and 2 of Chapter 157 of the Acts of 2005, “An Act Relative to Disability Retirement Benefits for Veterans”**

The Board voted to approve an increase to the benefits payable to veterans retired under Accidental Disability Retirement of \$15 per year for each year of creditable service or fraction thereof, but the total amount of this additional yearly retirement allowance shall not exceed \$300.00 as stated in Section 1 of Chapter 157 of the Acts of 2005. Further, to approve a retroactive payment to veterans retired under Accidental Disability Retirement noted in Section 1 above, if the provision had been in effect, and for which a member in service would have been eligible at the time of the member's retirement, as stated in Section 2 of Chapter 157 of the Acts of 2005.

On January 19, 2006, the Retirement Board voted to accept Section 1 and Section 2 of Chapter 157 of the Acts of 2005, which became effective on November 23, 2005.

Board Member Vincent Mannering asked how much this benefit will cost and how many people are affected. Retirement Board Director Brian Leahy stated the retirement system currently has five members who would benefit from this action at an anticipated cost of \$1,000 annually and a retroactive benefit of \$5,000.

### **Approval of the Fifty-First Bond Resolution (2006 Series C)**

The Board voted to adopt the fifty-first Supplemental Resolution authorizing the issuance of permanent financing of up to \$150,000,000.00 of Massachusetts Water Resources Authority Subordinated General Revenue Bonds and the supporting issuance resolution.

In Fiscal Year 2007, MWRA anticipates the receipt of up to \$150 million in subsidized financing from the Massachusetts Water Pollution Abatement Trust (MWPAT) for purposes of permanently funding costs related to several water and wastewater projects. Water projects funded with MWPAT financing may have a maturity schedule of up to 20 years; wastewater projects funded with MWPAT financing may have a maturity of up to 30 years depending upon the useful life of the assets financed. Nearly all of the loans (those with initial project approval after calendar year 2001) will have a fixed 2% interest rate.

Treasurer Ralph Wallace noted this is the least expensive source of funding to fund the MWRA's Capital Program.

### **Revised System Expansion and Emergency Water Use Policies**

The Board voted, with Rudolph Banks abstaining, to approve the following revised policies of MWRA substantially in the form presented: OP.04, Sewer Connections Serving Property Partially Located in a Non-MWRA Community; OP.05, Emergency Water Supply Withdrawals; OP.09, Water Connections Serving Property Partially Located in a Non-MWRA Community; OP.10, Admission of New Community to Waterworks System, but striking from Section “E” of that proposed revised policy, entitled “Legislation”, all provisions except for the first three sentences thereof; and OP.11, Admission of New Community to MWRA Sewer System and Other Requests for Sewer Service to Locations Outside MWRA Sewer Service Area. The revised policies incorporate policy recommendations of the Advisory Board regarding entrance fee payment provisions and fees for emergency water supply withdrawals and also reflect other policy refinements recommended by staff. Further, as recommended by the Advisory

Board, to eliminate the “One-Year O&M Rate for Temporary Increases in Water Purchases from MWRA Related to Safe Drinking Water Act Improvements in Partially Supplied Communities.

Additionally, the Board voted that each of the provisions of the version of Policy OP.10, Admission of New Community to Waterworks System, which was in existence just prior to its being amended by the foregoing vote of October 11, 2006, shall continue to apply in full to the entirety of the process by which the Towns of Reading and Wilmington and by which the entity South Shore Tri-Town Development Corporation, created under Section 3 of c. 301 of the Acts of 1998, may each continue to seek admission to the MWRA Waterworks System and service area.

Mr. Laskey urged that the proposed vote not be postponed as had been requested by the Water Supply Citizens Advisory Committee (WSCAC). WSCAC had expressed concern regarding language that had been included in the proposed changes. Mr. Laskey stated that a template for revisions to legislation had been included as an information packet; however, there was no intent to change the policy. The language was simply included as a sample of legislation that had been signed into law. This issue is “housekeeping” in nature and could be changed here without a delay of the vote. After much discussion from Board members, the revised vote above was agreed upon.

Eileen Simonson of WSCAC agreed with the changes made and asked that the vote not be deferred.

**Renewal of Needham and Wellesley Agreements for Continuation of Water Supply**

[Postponed to November 15, 2006 meeting.]

**Amendment to Memorandum of Agreement with the Massachusetts Department of Public Health**

The Board voted to authorize the Executive Director, on behalf of the Authority, to amend the Memorandum of Agreement with the Massachusetts Department of Public Health for an additional six months, from December 31, 2006 to June 30, 2007, without any increase in funding.

In July 1999, the Board authorized staff to enter into Memoranda of Agreements to design programs of waterborne disease surveillance and outbreak monitoring activities with the Massachusetts Department of Public Health (DPH) and Boston Public Health Commission. These agreements have been regularly renewed. Due to a staffing change in which one of the two full-time equivalents working on the surveillance project left, DPH would be able to extend the MOA for an additional six months, without a change in total funds. This extension would also allow time for more data to accumulate for the John J. Carroll Water Treatment Plant. Staff now anticipates a full review of any health related changes due to improved ozone treatment to be presented to the Board in summer 2007.

Chairman Golledge asked why the contract is in six month increments. Director of Planning Steve Estes-Smargiassi stated that the DPH requested six month intervals.

**Appointment of Project Manager, Wastewater Engineering Unit**

The Board voted to approve the Executive Director's recommendation to appoint Ms. Kathleen McCue Cullen to the position of Project Manager in the Wastewater Engineering Unit, Operations Division (Grade 25, Unit 9), at an annual salary of \$79,132.38, effective October 21, 2006.

Ms. McCue Cullen holds a Bachelor of Science degree in Mechanical Engineering from the University of Massachusetts, Amherst and a Master of Science in Civil Engineering from the University of Massachusetts, Lowell. She possesses more than ten years of civil engineering experience working on numerous MWRA wastewater and water projects.

**October PCR Amendments – FY2007**

The Board voted to approve amendments to the Position Control Register (PCR).

The PCR amendments included a title and grade change for a vacant position at the Deer Island Wastewater Treatment Plant (DIWTP) to meet the need for expertise in the area of electrical program management; and title/grade changes for four filled electrician positions to Medium Voltage Specialist at the DIWTP to meet the need for medium voltage electrical work.

The annualized budget impact of these PCR amendments will theoretically range from a cost of \$33,236 to \$57,014 and will likely be at the higher end of the theoretical range. Staff will ensure that any cost increase associated with this PCR amendment will not result in spending over the approved FY07 Wages and Salaries Budget.

**CONTRACT AWARDS**

**Upper Neponset Valley Replacement Sewer, MWRA Sewer Section 687: Albanese Brothers, Inc., Contract 6629**

The Board voted to approve the award of Contract No. 6629, Upper Neponset Valley Replacement Sewer, MWRA Sewer Section 687, to the lowest responsive bidder, Albanese Brothers, Inc., and to authorize the Executive Director, on behalf of the Authority, to execute and deliver said contract in the bid amount of \$8,334,000.00 for a term of 570 calendar days from the Notice to Proceed.

During wet weather, the capacities of these sewer lines are often exceeded, resulting in surcharging and overflows. The purpose of this project is to increase the capacity of the Upper Neponset Valley Sewer to the level of service provided to all MWRA sewer member communities.

Board Member Andrew Pappastergion noted that the Engineer's Estimate was \$13+ million and the winning bid was \$8+ million. Was the Engineer's Estimate high? Deputy Chief Operating Officer Charles Button stated this was not one of our better estimates. Despite the large variance from the original Engineer's Estimate, the bids received are appropriate and reflect the current competitive nature of the local construction market. The relatively tight grouping of the six bidders, a difference of \$1,530,710 between the highest and lowest, provides assurance that the bidders understand the nature of the project.

**CONTRACT AMENDMENTS/CHANGE ORDERS**

**Spot Pond Supply Mains, Contract 3, Sections 3, 4, 9, 10 and 11: R. Zoppo Corp., Contract 6382, Change Order 8**

The Board voted to authorize the Executive Director, on behalf of the Authority, to approve Change Order No. 8 to increase the amount of Contract No. 6382 with R. Zoppo Corp., Spot Pond Supply Mains, Contract 3, Sections 3, 4, 9, 10 and 11, in an amount not to exceed \$66,379.63. Further, to authorize the Executive Director to approve additional change orders as may be needed to Contract No. 6382 in amounts not to exceed the aggregate of \$250,000.

This change order consists of the following two items: 1) Removal and replacement of 17 Valves through Section 11 at a cost of \$39,911.61; and 2) Furnishing and installing a 48-inch Steel Pipe at a cost of \$26,468.02. Of the 17 inoperable valves to be replaced, seven were installed by the MBTA in the late 1970s and early 1980s. Because these valves were considered relatively new, Montgomery Watson and Harza, the Design Engineer, assumed during design that they did not need to be replaced. The cost for removal and replacement of seven valves, identified as an unforeseen condition, totals \$10,976.87. The

other ten valves were old and the Design Engineer should have included them for replacement in this contract at a cost of \$28,934.74 (identified as a design omission). For the installation of the 48-inch Steel Pipe, Montgomery Watson Harza erred by specifying a restrained coupling on piping encased in concrete.

The cumulative value of all change orders to this contract is \$313,516.36, or 2% of the original contract amount of \$16,776,900.00, for an adjusted contract total of \$17,090,416.36. Work on this contract is approximately 60% complete. The FY07 Capital Improvement Program budget includes \$17,101,000 for Contract 6382.

## INFORMATION

### **Orange Notebook, Fourth Quarter, FY06**

Staff presented the Board of Directors Report on Key Indicators of MWRA Performance (the Orange Notebook) for the Board's review.

### **Delegated Authority Report – August and September**

Staff provided the Board with a listing of delegated authority actions over \$25,000 for the period August 1 through September 30, 2006.

### **Wastewater Master Plan – Findings and Recommendations**

Director of Planning and Coordination Marian Orfeo stated that staff has identified over \$2 billion (in current dollars) in wastewater needs for the FY07-FY48 timeframe, including \$460 million for the court-approved CSO Control Plan.

The Master Plan includes all projects that are now included in the CIP, projects that had been eliminated from the CIP because of budget concerns and newly identified projects. All projects have been prioritized on a scale from 1 to 5 (1 – critical; 2 – essential; 3 – necessary; 4 – important; 5 – desirable). Highest priority projects will resolve critical threats to public health and prevent imminent system failure resulting in significant service loss. High priority projects will improve system reliability and maintain effluent/residuals quality. Lower priority projects will optimize system performance, assure future capacity and provide more efficient operation. Project ratings were assigned by MWRA senior managers in concert with Planning and Coordination Department staff. All MWRA projects (water, sewer and business support) will be further prioritized during the FY08 CIP development process.

Overall, the collection system sewers that transport wastewater received from the 43 sewer member communities to the headworks facilities are in reasonably good condition, given its average age of about 70 years. Approximately 33% of sewers are over 100 years old and another 25% are between 51 and 100 years old. Based on internal TV inspection ratings for gravity sewer pipe, approximately 18 miles (8%) of interceptors are severely damaged (C-rated), 139 miles (61%) are in fair to good condition with some damage (B-rated) and 52 miles (23%) are in very good condition (A-rated). As part of the Master Plan process, staff developed an interceptor renewal methodology to identify and then plan/design/construct sewer repair/rehabilitation projects targeting “C” rated (severely damaged) pipe.

Mr. Mannering suggested that staff add another category to the priority scale. Two pipes that are rated a “C”, with one pipe to be repaired in two years and the other pipe to be repaired in 15 years shouldn't be in the same category.

Ms. Orfeo noted that the “big ticket” item in the current approved FY07 CIP is the CSO Program at \$192 million (FY07-FY13). The Master Plan identifies a total of \$172 million in additional high priority needs in the FY08-18 timeframe. For the FY08 CIP, staff recommends the following projects for consideration:

\$80 million to restore previously programmed funding to complete the West Roxbury Tunnel rehabilitation (FY11-18); \$5 million to restore funding to rehabilitate Section 624 in North Weymouth (FY09-11); \$38.5 million to restore funding for a comprehensive program to address pipelines with known hydrogen sulfide deterioration (including \$1 million for a system-wide study to address odor/hydrogen sulfide problems in the entire collection system [FY09-13]).

Board Member John Carroll asked why the Authority waited so long to do a system-wide hydrogen sulfide study. Mr. Hornbrook stated the hydrogen sulfide study was taken out of the budget to reduce the CIP; staff will try to include the study in the FY08 budget.

Ms. Orfeo noted that the cost to maintain and rehabilitate the system is increasingly costly. Deer Island is aging. A large scale equipment replacement is scheduled for 2015. Staff anticipates new regulatory requirements but did not include any funds for it in the Master Plan at this point. Additionally, no rehabilitation funds have been budgeted for the cross-harbor tunnels, which are assumed to be in good condition; the timeframe for tunnel rehabilitation is beyond the master planning period.

Director of Field Operations Rick Trubiano reported that the Chelsea Creek, Columbus Park and Ward Street Headworks (all built in 1967) are nearly 40 years old; equipment upgraded in 1987 is now almost 20 years old. These facilities remain operational, but are only in fair condition. The highest priority need for the Headworks is a comprehensive facility plan and subsequent upgrades.

Mr. Hornbrook noted there is \$2 million in the current CIP for a facilities plan and \$25 million in construction changes and upgrades proposed for the period FY09-18.

DIWTP Director John Vetere stated that the Deer Island Wastewater Treatment Plant is the second largest plant in the country in terms of maximum daily capacity. Its multiple treatment processes, high level of automation and its uniquely-constructed technical and engineering systems present challenges to operating, maintaining and replacing the plant's equipment, structures and related support systems.

The Master Plan identifies \$210 million in treatment project needs for the FY07-18 timeframe, \$199 million for Deer Island and \$11 million for Clinton, including all projects currently in the FY07 CIP. In addition to the CIP budget, historically \$4 to \$5 million per year of the Deer Island Current Expense Budget is expended for equipment replacements. The FY08 to FY18 CEB is expected to include approximately \$50 million for equipment replacements.

MWRA's sludge-to-fertilizer plant in Quincy, also known as the Residuals Processing Facility, recycles sludge (residuals) to produce pellets marketed for beneficial reuse. This facility is operating and maintained under a long-term contract, which expires in December 2015, with the New England Fertilizer Company.

Since the contractor is responsible for all operations, maintenance and capital improvements for the term of the contract, MWRA has not budgeted for any major expenditures within the existing FY07 CIP; however, staff are currently undertaking a reliability assessment of the utilities that support the facility that may lead to recommendations for infrastructure upgrade projects. The most significant short-term need identified in the Master Plan is implementation of a comprehensive Facilities Plan to assess the condition and needs of the existing equipment and facility; and recommend a long-term approach for residuals management. For the long term, the current Residuals Processing Facility will likely need to be completely rehabilitated or replaced either in kind or with another technology beginning in FY14.

Mr. Hornbrook noted that technology is moving so fast that the Authority cannot get parts for its Variable Frequency Drives (VFD). The FY07 CIP includes \$14.6 million to complete replacement of the VFDs at

the North Main Pump Station, Winthrop Terminal Facility and throughout the DIWTP. VFDs on Deer Island are expected to have a ten-year replacement cycle.

Mr. Mannering asked why the Clinton Wastewater Treatment Plant has a staff from 7:00 a.m. to 3:00 p.m. and is placed on “automatic” for the late and night shifts. Wouldn't it be better to fully automate the plant? Mr. Hornbrook said the routine maintenance for this plant could be contracted out; however, the staff of five that are currently employed at the Clinton plant were originally MDC employees that transferred to the MWRA. Mr. Mannering noted that when this staff has reached retirement age, the Authority should look into automation.

Board Member Jay MacRitchie asked what condition the Deer Island digesters are in. Mr. Vetere stated that the egg-shaped digesters have worked out well and are in good shape because of the ease of operation and maintenance. The digesters were taken offline after the first five years of operation for internal inspection; there was not a significant amount of grit build up. MWRA does spend a significant amount of money (\$150,000 to \$200,000) on mixers to lessen struvite build up. Overall the digesters are working well.

Since 1993, MWRA has made a commitment to assist member sewer communities to finance infiltration and inflow (I/I) reduction and sewer system rehabilitation projects within their locally-owned collection systems. Funding of community projects through MWRA's I/I Local Financial Assistance Program is provided as 45% grant/55% interest-free loan. The loans are repaid to the Authority over five years. The program goal is to assist member communities in improving local sewer system conditions to reduce I/I and ensure ongoing repair/replacement of the collection system. This program is a critical component of MWRA's Regional I/I Reduction Plan.

Mr. Mannering asked if MWRA's maintenance is hurt by funding the I/I Program. Mr. Laskey said the Authority could use the \$30 to \$40 million elsewhere, but we set priorities; it is a good investment. If the Authority's system functions and the local systems don't, it affects the entire system.

Board Member Cile Hicks noted in the five years it takes to construct a facility, technologies change. Is staff keeping up with the latest technologies? Mr. Hornbrook said yes; some examples are the SCADA contract, automation and the remote controlled metering program. Another area is screen replacement. Staff has looked at all screens in the market and gone to other facilities to see their performance in the field to ensure cost effectiveness, reliability and maintenance. Mr. Vetere noted, as part of the Process Instrumentation and Control System contract, the manufacturer is required to give the Authority upgrades to keep the technology up-to-date.

### **Deer Island Wastewater Treatment Plant (DIWTP) Electrical Update**

The Board was previously briefed on the power loss events that occurred on Deer Island in April 2004, September 2005 and October 2005. A comprehensive study was completed by two independent consultants, Camp Dresser & McKee and Stone & Webster, resulting in 60 recommendations to address future power failures (60% of these recommendations have been completed to date). The remaining recommendations are in various stages of implementation.

To improve the reliability of NStar's electrical feed to Deer Island and NStar's response time to power failures, and to better anticipate further points of failure in Deer Island's electrical distribution system, monthly meetings with NStar representatives began on June 21, 2004.

Mr. Vetere noted that the staffing protocol during storm events has been modified. Additional operations management staff will be assigned to Deer Island before, during and after storm events; further, a

qualified NStar operator will be assigned to Deer Island (at the MWRA's expense) during storm events to cut down on response time should there be an electrical problem.

The MWRA may opt to run its Combustion Turbine Generators (CTG), on a case by case basis, along with electricity from NStar so that in the event of a power failure, the CTGs would provide an instantaneous source of power; however, this option is expensive. Board Member Joe Foti asked how expensive. Mr. Vetere responded that the cost is between \$35,000 to \$95,000 per day depending on the price of electricity. Without running the CTGs, startup could take an hour to an hour and one-half.

Mr. Hornbrook noted that a benchmark comparison between DIWTP and other facilities found that there are some deficiencies. The consultants have recommended that the MWRA have four additional medium voltage electricians (bringing the total to eight) on site, noting that more medium voltage training would decrease start up time. Staff will be trained for "black start" conditions.

**Industrial Waste Report #22: Industrial Pretreatment Program Annual Report to EPA for FY06**

MWRA Toxic Reduction and Control (TRAC) Manager Carolyn Fiore updated the Board on the FY06 Annual Report (Industrial Waste Report #22) to be submitted to the Environmental Protection Agency (EPA) on or before October 31, 2006 as required by the MWRA's NPDES permit.

Topics included: Significant Industrial Users; Enforcement Programs; Framingham Extension Sewer Odor and Corrosion Special Studies; Program Cost Recovery; and FY07 Initiatives.

TRAC's FY06 Current Expense Budget was \$2,853,754. In FY06, TRAC recovered approximately 70% of its budget through its permit charge and penalty collections totaling more than \$2 million (67% from permit charges and 3% from penalty collections).

**Wastewater Metering Replacement Project Update**

MWRA's new wastewater metering system, now in the three-year Product Support Agreement (warranty) phase, continues to consistently provide data in line with established uptime goals. From January to August 2006, approximately 95% of wastewater flow data was successfully captured (only 5% had to be estimated).

In general, the new wastewater metering system is operating well; however, staff continues to work with the meter manufacturers to help resolve various system issues that have been encountered, such as apparent defects in the MGD meter housing, connectors and cables (which have been corrected by the manufacturer); and erratic data collection from approximately 15% of the Marsh McBirney velocity sensors (although depth sensor readings are reliable). This typically happens at low-flow sites with unique hydraulic conditions (drop manholes, upstream pump stations, etc.) so data at these sites is properly adjusted via use of the standard flow calculations (using the depth reading) and/or editing available velocity data.

It should be noted that as staff continue to review new meter system data, the potential for assessment changes based on CY05 and CY06 data are possible. Staff anticipates that the largest changes have been identified and resolved.

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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 additional information.*