



MWRA Advisory Board Summary
of the
MWRA Board of Directors Meeting
Wednesday, June 30, 2010

A meeting of the Board of Directors of the Massachusetts Water Resources Authority was held on June 30, 2010 at the Charlestown Navy Yard. **Present:** Chair Ian Bowles, Joel Barrera and Michael Gove, Gubernatorial Appointees; John Carroll, Andrew Pappastergion and Joseph Foti, Advisory Board Representatives; Vincent Mannering, Kevin Cotter and James Hunt III, City of Boston Representatives; Jack Walsh, City of Quincy Representative. **Absent:** Marie Turner, Town of Winthrop Representative.

REPORT OF THE CHAIR

Chairman Ian Bowles stated that the Governor signed the budget, which unfortunately did not contain a consolidated energy management provision. The Executive Office of Energy and Environmental Affairs (EOEEA), however, is still moving forward on this and anticipates there will be a substantial savings opportunity for the Authority. He announced the appointment of the additional members of the special independent panel, Ronald G. Ballinger from MIT, and John H. Bambei, Jr., Chief of Engineering for Denver Water. The committee hopes to meet at some point in the next two weeks.

REPORT OF THE EXECUTIVE DIRECTOR

MWRA Executive Director Fred Laskey reported that there was still no success in locating the coupling. Staff will begin work on the river side of the pipe, which should be less complex. As the Chairman indicated, the two additional members have agreed to serve on the Pipe Break independent panel. Mr. Laskey also noted that the Quabbin stopped spilling on June 25. Flows from the reservoir had been spilling over the dam since mid-January.

APPROVALS

FINAL FY11 CURRENT EXPENSE BUDGET

The Board voted to adopt (1) the FY11 Final Current Expense Budget with current revenue and expenses of \$601.9 million; and (2) the FY11 Final Operating Budget (Trustee's Budget).

During the development of the FY11 Proposed Current Expense Budget (CEB), the MWRA recognized the unprecedented economic climate affecting its member communities and responded to the Advisory Board's challenge for FY11 by evaluating a variety of options to provide the lowest responsible rate increase.

The end result was a 1.49% rate increase for FY11, the lowest rate increase since 1996 and projected moderate, predictable increases of 3.9% in both FY12 and FY13.

Based on Board discussion and the Advisory Board concurrence, the combined wholesale rate remains at the 1.49% increase level in the FY11 Final Budget.

During the spring staff refined and updated the numbers in the FY11 Proposed Budget and presented the revised information at the June 9th budget hearings.

In comparison with the FY11 Proposed Budget presented to the Board in February 2010, the FY11 Final Budget was adjusted for the following major items:

- \$929,000 decrease of Debt Service as a result of lower State Revolving Fund (SRF) borrowing;
- \$860,000 increase in Investment Income as a result of investing more funds long term;
- \$580,000 net decrease for Indirect Expenses driven by a lower required contribution to the Pension fund based on a January 2010 actuarial evaluation; and
- \$570,000 net increase for Direct Expenses, mainly driven by higher health insurance rates offset by cuts in other line items to deliver level funding of Direct Expenses.

These changes allowed for \$1.8 million less use of Rate Stabilization funds, which will be preserved for rate relief in future years.

Board Member John Carroll credited MWRA and Advisory Board staff for working together to create a budget as tight as we have ever had.

Mr. Laskey said this is a very tight budget; traditionally we've given ourselves margins of error to deal with things that are beyond our control. We hope that current trends (that are assumed in the budget) continue.

Board Member Joel Barrera stated in terms of trends that might not continue; what are the concerns of things that could shift for a potential mid-year adjustment in FY11? Ms. Madden responded that staff has seen dislocations and spikes in the variable rate market before. Mr. Barrera asked if the MWRA has too much variable rate debt. Ms. Madden responded in the negative, saying that there is a good distribution of variable rate debt and the defeasance took some of that down further, slowly decreasing the amount of variable rate exposure – it is below 20%, which is a good place to be now.

Mr. Barrera asked about energy costs. Ms. Madden noted that energy costs are areas of exposure. Mr. Laskey stated that the electric portfolios have done well with the daily market, however if something disrupts the electricity market, risks could come. Ms. Madden noted that post-Hurricane Katrina, there was a Budget Amendment to deal with the swing because it is a key area of risk.

Board Member Jim Hunt stated that an update on legislation would be helpful; he stated that the MWRA is proactive and good at energy management, but there is some state legislation to establish a centralized approach; a briefing would be helpful. He also indicated an update on what else can be done – demand response and emergency response programs; we should have an update on the ISO New England Demand Response Strategy and how it is executed.

Mr. Hunt commended the MWRA staff; a lot of pressure is being felt from cities and towns and ratepayers due to economic times and the lowest rate increase in more than a decade is a great response. He commended MWRA staff and the Advisory Board on achieving that in response to the Board of Directors direction.

Mr. Laskey thanked the Joseph Favaloro and the Advisory Board staff for their hard work. Joseph Favaloro, Executive Director of the MWRA Advisory Board, stated that our approach this year was to jump start the process to the fall, pushing for final assessments to communities in February. He credited the Board of Directors and MWRA staff, saying that a goal was achieved: the lowest rate increase in 15 years without the benefit of Debt Service Assistance (DSA). He

stated that a new standard has been created and FY12 and FY13 will also benefit from this year's achievements.

FINAL FY11 WATER AND SEWER ASSESSMENTS

The Board voted to adopt the following effective July 1, 2010: (1) Water system assessments of \$180,219,815 and sewer system assessments of \$389,580,185 for Fiscal Year 2011; (2) FY11 sewer assessments of \$500,000 for the Town of Clinton and \$173,046 for the Lancaster Sewer District; (3) FY11 charge to the City of Worcester of \$122,473 which represents approximately 7.9% of the direct operating expenses for the Clinton Wastewater Treatment Plant; (4) FY11 water assessments of \$2,649,915 for the City of Chicopee, \$569,889 for South Hadley Fire District #1, and \$484,878 for the Town of Wilbraham; (5) A wholesale water rate of \$2,786.89 per million gallons; and (6) A retail sewer rate of \$5,654.59 per million gallons.

During the development of the FY11 Proposed Current Expense Budget (CEB), MWRA recognized the unprecedented economic climate affecting its member communities and strove to deliver the lowest responsible rate increase in FY11 and moderate predictable rate increases through FY13, in keeping with the Authority's multi-year rates management strategy.

Subsequently, based on Board discussions and the Advisory Board concurrence, it was agreed by all parties that the combined wholesale rate would remain at the 1.49% increase level in the Final FY11 Budget.

During the spring, staff refined and updated the numbers in the Proposed FY11 Budget and presented the revised numbers at the June 9th hearings. The revised budget figures and slight adjustments to water use and sewer flows resulted in minor differences in the Final version of the Proposed FY11 assessments.

FINAL FY11 CAPITAL IMPROVEMENT PROGRAM

The Board voted to approve the FY11 Capital Improvement Program (CIP) with a budget of \$218.3 million for FY11 and five-year (FY09-FY13) spending of \$1.091 billion, including a contingency of \$10.3 million and \$33.7 million, respectively, as presented and filed with the records of the meeting.

The FY11 Final Capital Improvement Program represents an update to the FY11 Proposed program presented to the Board in December 2009.

The FY11 Final CIP spending for the FY09-13 cap period is \$1.085 billion, a decrease of \$59.0 million or 5.2% from the Base-Line cap approved June 2008 and complies with both the annual and 5-year cap requirements.

On June 9th, the Board of Directors held a hearing on the Capital Improvement Program. Discussion and materials provided at the hearing highlighted the changes from the FY11 Proposed CIP.

The majority of the changes are pertaining to inclusion of a series of water redundancy projects. The May 1, 2010 Shaft 5A water pipe break re-emphasized the importance of water redundancy in general and the re-evaluation of major pressure points in particular. As a result, approximately \$221.0 million was included in the FY11 Final CIP for these projects, the majority of which were drawn from the Master Plan.

The effect of the newly added water redundancy initiatives on the FY09-13 cap is approximately \$15.0 million.

In addition to the water redundancy projects, a new sub-phase of the Local Water Pipeline Assistance Loan Program for Chicopee Valley Aqueduct (CVA) communities of \$10.0 million was

added in the FY11 Final CIP. Although this loan program has a net zero impact on the CIP after the loans are repaid, it represents an additional \$2.7 million of spending in the FY09-13 timeframe.

ELIMINATION OF VACANT POSITIONS

The Board voted to authorize the elimination of 21 vacant positions from the Position Control Register effective June 30, 2010.

In response to the Board's request and staff's commitment to reduce the overall number of vacant positions, MWRA management has continued its effort to review and eliminate less essential vacant positions. Historically, the Authority has maintained a Position Control Register containing a number of vacant positions above the fiscal year budgeted headcount. This approach has allowed for greater flexibility to respond to changing operational and business needs and to address those needs using available vacant positions from the Position Control Register.

Staff identified an additional 21 vacant positions that will be eliminated from the Position Control Register by June 30, 2010. With the elimination of these vacant positions the Position Control Register will contain 1250 positions as of July 1, 2010. The elimination of these 21 positions will not have a cost impact on the FY 11 CEB.

AMBIENT MONITORING PLAN FOR THE MWRA EFFLUENT OUTFALL, REVISION 2

The Board voted to authorize staff to submit the *Ambient Monitoring Plan for the MWRA Effluent Outfall, Revision 2* to the Environmental Monitor for public comment.

MWRA is proposing a second revision to its current required Ambient Monitoring Plan for the MWRA Effluent Outfall. If this revision is implemented, staff estimates that MWRA will save approximately \$800,000 annually in monitoring costs compared to the cost of implementing the existing plan, which is \$2.3 million. The revisions to the monitoring plan will provide a smaller, better-integrated and more focused program. The purpose of the monitoring is to continue to ensure that the discharge does not have unexpected impacts.

Staff estimates that the proposed revised monitoring plan will save approximately \$800,000 annually compared to the cost of implementing the existing plan, which is \$2.3 million. The FY2011 budget request of \$1.5 million for professional services assumes that these proposed monitoring plan revisions will be in effect for the entire fiscal year.

The redesigned plan is based on the results of the extensive monitoring performed to date and while using fewer sample stations and surveys, is a better integrated and more focused monitoring plan. The proposed changes are based on data collected and technical reports written since the monitoring began, including seventeen years of environmental monitoring (eight years of baseline and nine years of discharge monitoring). The revisions reflect that the original monitoring questions have been answered and the outfall and the Deer Island Wastewater Treatment plant are performing as well or better than predicted. Monitoring data support the understanding that the outfall has had only limited effects on Massachusetts Bay while the ecosystem of Boston Harbor continues to dramatically improve. The data are summarized in *Ambient Monitoring Plan for the MWRA Effluent Outfall, Revision 2*, and documented in MWRA's many technical reports, as well as in the peer-reviewed scientific literature. This revised plan builds on the scientific understanding gained to appropriately shift the focus and scale of the monitoring.

MWRA presented its proposed changes at OMSAP meetings held in June, August and October 2009. During this review process, MWRA made further revisions based on comments received from EPA, Coastal Zone Management, Stellwagen Bank National Marine Sanctuary, and the public. In December 2009, OMSAP recommended by letter that EPA approve MWRA's revised proposed changes. During spring 2010, MWRA and EPA resolved details of some remaining

issues with the monitoring plan. At the request of the National Marine Fisheries Services, EPA is preparing an evaluation of MWRA's monitoring results with regard to the conservation recommendations that resulted from the Biological Assessment and Biological Opinion that were issued in 1993.

This monitoring revision process is independent of the permit renewal process that has been ongoing since 2005.

LOCAL WATER SYSTEM ASSISTANCE PROGRAM – APPROVAL OF LOAN PROGRAM GUIDELINES

The Board voted to approve the Program Guidelines for the Local Water Assistance Program and to provide for the allocation of loan funds to new MWRA water communities as part of the admission approval process, as is current policy under the Local Pipeline Assistance Program.

Staff recommend that the Board of Directors approve the technical aspects of the Local Water System Assistance Program as unanimously adopted by the MWRA Advisory Board at its March 18, 2010 meeting and as updated at the June 11, 2010 Advisory Board Executive Committee meeting. At the June 9, 2010 Board meeting, members expressed concern regarding the mechanism for funding Tier Two projects. In response, the Advisory Board then developed an alternative mechanism.

The MWRA FY11 CIP includes \$210 million funding for the Local Water System Assistance Program. The CIP will also be presented for Board of Directors' vote at the June 30, 2010 Board meeting.

The Local Water System Assistance Program (LWSAP) will provide \$210 million in interest-free loans to 45 member water communities (about \$21 million per year over ten years, FY11-FY20) for local water system improvement projects. Community loans will be repaid to MWRA over a 10-year period.

The proposed program would expand MWRA's financial assistance for local water system improvements beyond the current \$257 million Local Pipeline Assistance Program (LPAP) scheduled to conclude in FY13. Through the LPAP, \$185 million has been distributed to fund 216 local water system rehabilitation projects. The remaining \$72 million is authorized for distribution through FY13. Through FY10, 12 communities have utilized 100 percent of their allocated loan funds and an additional ten communities have utilized more than 75 percent of their allocated loan funds.

MWRA's primary goal in providing financial assistance to member communities is to improve local water systems to help maintain high quality water as it passes from MWRA's facilities through local pipelines to customers' taps. Continued improvement of local water systems is a critical element of MWRA's Integrated Water Supply Improvement Program.

The FY11 CIP includes a budget of \$210 million for the proposed LWSAP, as well as the remaining \$72 million for the ongoing LPAP to provide interest-free loans to member water communities and offsetting loan repayments. The net budget impact of the proposed LWSAP during the FY09-FY13 cap period is an estimated expenditure increase of \$34.7 million. As community loans are repaid, the funds are deposited into the MWRA construction fund and the CIP will be credited accordingly. MWRA's exposure for FY11 to make an estimated \$11 million in new LWSAP community loans "interest free" is estimated at \$360,000 based on a commercial paper interest rate of 3.25 percent. Overall, including costs associated with both the proposed LWSAP and ongoing LPAP water loan program, MWRA's exposure for FY11 to make community water loans "interest free" is estimated at \$3.44 million. This expense is included in the Debt Service line in the Current Expense Budget.

JUNE PCR AMENDMENTS – FY10

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

The PCR amendment reflects organizational changes aimed at improving the cost- effectiveness, structural soundness and staffing patterns of the Office of Emergency Preparedness. The amendment is:

I. Title and location change for one filled position in Public Affairs to address the needs of the Office of Emergency Preparedness (OEP).

This amendment involves a change in title and location and requires the approval of the Personnel Committee. With this amendment, the position of Intergovernmental Affairs Manager will be re-titled to Manager, Emergency Planning, relocated to the Office of Emergency Preparedness (OEP) and will perform emergency planning duties. The amendment is being proposed in order to meet the need in OEP for the coordination and development of emergency response procedures and communications. Please note that at the June 9, 2010 meeting of the Board of Directors, intergovernmental affairs duties were transferred to another position through a PCR amendment.

There are no costs associated with this change.

CONTRACT AWARDS

REMOTE HEADWORKS UPGRADES: MALCOLM PIRNIE, INC., CONTRACT 7206

The Board voted to approve the recommendation of the Consultant Selection Committee to select Malcolm Pirnie, Inc. to provide design and construction administration services for Remote Headworks Upgrades and to authorize the Executive Director, on behalf of the Authority, to execute Contract 7206 with Malcolm Pirnie, Inc. in an amount not to exceed \$6,682,531.00 for a term of 2,494 calendar days from the Notice to Proceed.

Wastewater flow from MWRA's Northern Service Area is collected at one of three remote headworks facilities before reaching the Deer Island Treatment Plant. Flow at these headworks facilities is controlled, preliminarily treated, and measured before dropping into deep rock tunnels where it is transported to Deer Island for full treatment. Preliminary treatment at the headworks facilities includes grit and screenings removal, which prevents excessive wear and maintenance, and protects the cross-harbor tunnels from filling with debris.

The three remote headworks facilities were placed in operation in the 1960s and in 1987 were upgraded with replacement of mechanical equipment and associated structural, electrical, and instrumentation improvements. In 2009, Conceptual Design Reports prepared by Malcolm Pirnie, Inc., found that the equipment and systems in the three headworks were in fair to poor condition and required replacement. More than 1,000 improvement recommendations were made. Additional improvements have also been identified.

Mr. Laskey noted that this is an area that needs a substantial upgrade. This is a major initiative for us. It represents the shift from the big court-ordered projects to finally taking care of our infrastructure. It will lead to opportunities for improving the energy systems at the facilities. The current construction estimate is at \$80 million.

Mr. Carroll questioned plans to have one construction contract for all three headworks facilities. Kevin O'Brien, Director, Wastewater Engineering, stated that the current plan is to have one large contract to achieve savings due to economies of scale, but those plans could change. There will be a construction manager separate from the design contractor.

Contract 7206 will provide design and construction administration services for the complete upgrade of the Chelsea Creek, Columbus Park, and Ward Street headworks. This upgrade will

include replacement and automation of all solids handling equipment including screens, grit collector systems, and solids conveyance systems; odor control and HVAC systems will be replaced and redundancy added; ancillary systems, including emergency generators and fuel oil tanks, will be replaced; and instrumentation and control systems will be upgraded. The upgrade of the remote headworks will be one of the most complex MWRA projects in a number of years, both from a design and construction perspective.

MWRA received four proposals; Malcolm Pirnie proposed the lowest cost and the proposal reflected a highly experienced project team, with responsive, local management.

The FY10 CIP includes a budget of \$8,000,000 for Contract 7206; the contract award amount is \$6,682,531.

SELECTION OF UV EQUIPMENT FOR THE ULTRAVIOLET DISINFECTION SYSTEM AT THE WARE DISINFECTION FACILITY: CALGON CARBON CORPORATION, CONTRACT 6776A

The Board voted to approve the selection of Calgon Carbon Corporation to provide ultraviolet disinfection equipment for the Ware Disinfection Facility and to authorize the Executive Director, on behalf of the Authority, to execute a Memorandum of Agreement with Calgon Carbon Corporation that will contain the terms and conditions under which ultraviolet equipment will be furnished.

The preliminary design for the addition of ultraviolet disinfection for the treatment of Quabbin water at the Ware Disinfection Facility is being completed. Due to the differences in ultraviolet equipment between manufacturers, the next phase of design must be based on the actual ultraviolet equipment to be installed. MWRA's selection of this equipment is based on a competitive bid process that considers both equipment and operating costs. The Memorandum of Agreement with Calgon Carbon Corporation, which will guarantee the cost of the equipment, as well as its operational performance.

Calgon Carbon Corporation submitted the lowest price proposal. MWRA staff and AECOM reviewed the pricing and have determined that Calgon Carbon Corporation's proposal is reasonable and in conformance with the specifications. References reported that Calgon Carbon Corporation's UV equipment has performed well.

Selection of the UV equipment and execution of the MOA have no immediate fiscal impact. The cost for the UV equipment will be included in the construction contract for Ultraviolet Disinfection Facilities at the Ware Disinfection Facility, Contract 6776. The UV system supplier will be paid directly by the construction contractor. The Proposed FY11 CIP contains \$5.6 million for this construction.

TECHNICAL ASSISTANCE CONSULTING SERVICES – CARROLL WATER TREATMENT PLANT: FAY, SPOFFORD & THORNDIKE, LLP, CONTRACT 7315 AND DEWBERRY-GOODKIND, INC., CONTRACT 7316

The Board voted to approve the recommendation of the Consultant Selection Committee to select Fay, Spofford & Thorndike, LLC and Dewberry-Goodkind to provide technical assistance consulting services for the John J. Carroll Water Treatment Plant and to authorize the Executive Director, on behalf of the Authority, to execute Contract 7315 with Fay, Spofford & Thorndike, LLC and Contract 7316 with Dewberry-Goodkind, each for an amount not to exceed \$750,000.00 and a term of two years from the Notice to Proceed.

The purpose of these technical assistance contracts is to make available, on a continuing, as-needed basis, the services of qualified, professional engineering firms to assist MWRA staff with engineering and/or design initiatives for the Carroll Water Treatment Plant (CWTP). Any resulting construction will be bid under the CWTP Ancillary Modifications project. These contracts provide services in multiple engineering disciplines including, architecture, corrosion control, civil,

structural, geotechnical, environmental, sanitary, mechanical, process, fire protection, instrumentation and controls, chemical and security.

It should be noted that both Consultants hold the current Technical Assistance contracts for the CWTP, which expire in September 2010; staff report that both firms have performed satisfactorily.

The proposed FY11 Capital Improvement Program contains \$750,000 for Contract 7315 and \$750,000 for Contract 7316.

CONTRACT AMENDMENTS/CHANGE ORDERS

EAST BOSTON BRANCH SEWER INTERCEPTOR RELIEF: BARLETTA HEAVY DIVISION, INC., CONTRACT 6257, CHANGE ORDER 11

The Board voted to authorize the Executive Director, on behalf of the Authority, to approve Change Order No. 11 to increase the amount of Contract No. 6257 with Barletta Heavy Division, Inc., East Boston Branch Sewer Interceptor Relief, in an amount not to exceed \$617,560.00. Further, the Board voted to authorize the Executive Director to approve additional change orders as may be needed to Contract No. 6257 in amounts not to exceed the aggregate of \$250,000.00, in accordance with the Management Policies of the Board of Directors.

Under Contract 6257, the Contractor is installing approximately 2.5 miles of 24-, 36-, 48- and 66-inch-diameter combined sewers on Chelsea, East Eagle, Condor, Border, Marginal, Orleans, Gove, Bremen and Porter Streets in East Boston, primarily by micro tunneling.

Contract 6257 is the second contract of the East Boston Branch Sewer Interceptor Relief Project. The first contract, Contract 6840, was completed in 2005 and involved the rehabilitation of approximately 6,000 feet of existing East Boston Branch Sewer. The third and final contract, Contract 6841, awarded in April 2009, will replace approximately one mile of existing 12- and 15-inch-diameter combined sewers on Marginal, New, Maverick, Border and Jeffries Streets in East Boston, primarily by pipebursting.

Together, Contracts 6257, 6840 and 6841 comprise the East Boston Branch Sewer Interceptor Relief project recommended in the 1997 Final CSO Facilities Plan/EIR and will significantly reduce the frequency and volume of combined sewer overflows from outfalls BOS003-014 in East Boston. As reported to the Court, all construction of the East Boston Branch Sewer Interceptor Relief project will be substantially complete by July 2010.

Change Order 11 consists of the following three items:

Increased Quantity of Group IV Excavated Materials	\$272,000
Clean, Inspect and Install Cured-In Place Pipe Liner in Siphon	\$196,553
Provide Additional Support to Utilities	\$149,007

The cumulative total value of all change orders to this contract will be \$2,647,140.60 or 4.4% of the original contract amount. Work on this contract is approximately 96% complete.

The FY10 CIP includes a budget of \$61,861,000 for Contract 6257. Including this change order for \$617,560, the adjusted subphase total is \$62,547,140.60 or \$686,140.60 over budget. This amount will be covered within the five-year CIP spending cap.

Staff shared with the Board the complexities of this project. With only ten feet remaining to go, the contractor has encountered a maze of gaslines and power lines, making micro tunneling impossible. They have been forced to revert to the old-fashioned approach of hand shoveling.

SECTION 50 TO SECTION 51 SEWER CONNECTION – MELROSE: P. GIOIOSO & SONS, INC., CONTRACT 7248, CHANGE ORDER 3

The Board voted to authorize the Executive Director, on behalf of the Authority, to approve Change Order No. 3 to increase the amount of Contract No. 7248 with P. Gioioso & Sons, Section 50 to Section 51 Sewer Connection – Melrose, in an amount not to exceed \$95,250.00.

MWRA currently owns and maintains two parallel sewer interceptor systems, referred to as the Metropolitan System. These interceptors convey flow from Wakefield, Stoneham and Melrose. During extreme wet-weather events, sanitary sewer overflows (SSOs) have occurred along Section 51 of the Metropolitan System, specifically near the Roosevelt Elementary School in Melrose.

A study was conducted and it was determined that disconnecting the Section 51 segment from the main line of Section 51 and constructing a new connection to Section 50 from Section 51 would help to alleviate the SSOs at the Roosevelt Elementary School.

Contract 7248 includes the construction of approximately 660 feet of new 18-inch PVC sewer, a new 18-inch gate valve, and removal and replacement of approximately 35 linear feet of 20-inch-diameter, cast-iron pipe with new ductile-iron pipe.

Change Order 3 consists of the following two items:

Remove & Construct a New Water Main Crossing at the Intersection of Vinton Street & Melrose Street	\$41,950
Construct a Sewer Bypass between Sewer Line at Section 50 to Section 60	\$53,300

The cumulative value of all change orders to this contract will total \$182,510 or 38.7% of the original contract amount. Work on this contract is approximately 75% complete.

The FY10 CIP includes a budget of \$600,000 for Contract 7248. Including this change order for \$95,250, the adjusted subphase total will be \$654,510 or \$54,510 over budget.

HULTMAN AQUEDUCT INTERCONNECTIONS: BARLETTA HEAVY DIVISION, INC., CONTRACT 6975, CHANGE ORDER 5

The Board voted to authorize the Executive Director, on behalf of the Authority, to approve Change Order No. 5 to increase the amount of Contract No. 6975 with Barletta Heavy Division, Inc., Hultman Aqueduct Interconnections, in an amount not to exceed \$1,400,000.00 and to decrease the contract term by 155 calendar days from September 2, 2014 to March 31, 2014.

Further, the Board voted to authorize the Executive Director to approve additional change orders as may be needed to Contract No. 6975 in amounts not to exceed the aggregate of \$250,000.00.

On July 15, 2009, the Board approved the award of Contract 6975, Hultman Aqueduct Interconnections, to Barletta Heavy Division, Inc. in the amount of \$47,542,388. The Notice to Proceed was issued on September 2, 2009 with a completion date of September 2, 2014.

The ongoing Hultman Aqueduct rehabilitation contract is divided into two phases - rehabilitation of the middle section of the Hultman, which extends from Shaft 4 of the Southborough Tunnel to the Norumbega open reservoir in Weston (Phase 1), and rehabilitation of the lower section of the Hultman, which extends from the Norumbega Covered Storage Facility to Shaft 5/5A in Weston (Phase 2). The upper section of the Hultman, which begins at the John J. Carroll Water Treatment Plant in Marlborough and extends to Shaft 1 of the Southborough Tunnel in Southborough, will be rehabilitated under a separate future contract.

The ongoing construction contract includes rehabilitation of the middle and lower sections of the Hultman Aqueduct and construction of interconnections between the Hultman and the MetroWest Tunnel. This work is necessary to complete the redundancy initiative that was undertaken by the Board in 1989 when it awarded the contract to plan and design redundancy for the Hultman Aqueduct. Construction of the MetroWest Tunnel was one component of that redundancy. This work will also interconnect the Hultman Aqueduct with the Norumbega Covered Storage Facility and will allow the Hultman Aqueduct to be reactivated without using the old open Norumbega Reservoir.

This Change Order authorizes extended hours to shorten by sixteen months the time required to bring the Hultman Aqueduct back online earlier than previously scheduled.

Change Order 5 consists of the following single item:
Construction Sequencing and Schedule Acceleration \$1,400,000

The cumulative total value of all change orders to this contract will be \$1,453,211 or 3.1% of the original contract amount. Work on this contract is approximately 21% complete.

The FY11 CIP includes a budget of \$47,842,000 for Contract 6975. Including this change order for \$1,400,000, the adjusted subphase total is \$48,995,599 or \$1,153,599 over budget. This change will be incorporated during the development of the Proposed FY12 CIP. It should be noted that MWRA will be receiving \$3.6 million in American Recovery and Reinvestment Act funding for this project.

INFORMATION

FY10 THIRD QUARTER ORANGE NOTEBOOK

MWRA Chief Operating Officer Michael Hornbrook provided the Board with the third quarter update for FY10 on key performance indicators for operational, financial, workforce and customer service parameters tracked by MWRA management each month.

Chief Operating Officer Michael Hornbrook stated that the overriding theme of the Orange Notebook is the February/March storms and the impacts on the system.

Board Member Joel Barrera asked, in regard to the Community Water Leak Detection program, what is the one community that is out of compliance? Carl Leone, Senior Program Manager responded that it is the Town of Northborough; they have done leak detection themselves and purchased their own equipment, although they have not done it in recent years due to budget constraints. He noted that MWRA helped to put together a grant proposal for leak detection. Mr. Barrera asked why 20% of MWRA communities are out of compliance (if judged individually). Mr. Hornbrook responded that as a whole - which is the criteria for measuring compliance - the system is in good shape.

INTERNAL AUDIT DEPARTMENT ACTIVITIES REPORT

Internal Audit annually reports to the Board to present the results of completed assignments, and the objectives and status of active and planned assignments. Quarterly, Internal Audit utilizes the Orange Notebook to briefly discuss recently issued reports, and to report on the status of open audit recommendations and cost savings. This report to the Board includes a discussion of activities since Internal Audit's last report to the Board in February 2009.

Internal Audit's goal is to provide sufficient audit coverage to give reasonable assurance that internal and management controls are functioning as intended, and that only reasonable,

allowable and allocable costs are paid to consultants, contractors, and vendors. Audit coverage is provided through performance audits that analyze and evaluate MWRA programs and activities to determine if they are being carried out effectively and efficiently, compliance audits that focus on adherence to MWRA policies and procedures, contractual requirements, rules or regulations, and advisory services undertaken at the specific request of management.

The development of the annual Work Plan assignments is based on Internal Audit's risk assessment of programs and management controls, and input from the Advisory Board and senior managers across the Authority. The actual scheduling and completion of audit assignments is dependent on staff availability which can be impacted by control issues needing immediate attention, or by unscheduled special requests for management advisory services.

Board Member Joel Barrera asked how many people are part of the internal audit division? John Mahoney, Director Internal Audit, responded that there are seven auditors and one support person; two auditors are part-time.

Board Member Jim Hunt asked if Internal Audit was engaged with the emergency work that Clean Harbors was called in to do. Mr. Mahoney responded in the affirmative, noting that Internal Audit helped to negotiate a lower price. Mr. Laskey stated that Internal Audit was very helpful and they do a nice job. Mr. Hunt stated that Internal Audit [at the City of Boston] does a lot of work on energy management; is that a focus for this department? Mr. Mahone responded that staff has been asked to look at the Constellation energy billings and evaluate if the prices are good/accurate.

DELEGATED AUTHORITY REPORT – MAY 2010

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

Mr. Barrera asked for an explanation of the emergency repairs between Shafts 5 and 5A. Mr. Hornbrook responded that during the Shaft 5A event, there was an immediate response to the issue. Barletta was contacted; they came to the site and staff made estimates of the cost to do emergency work and issued a contract for a not-to-exceed amount of \$800,000 (awarded under the Executive Director's authority).

FY10 FINANCIAL UPDATE AND SUMMARY AS OF MAY 2010

Staff provided a financial update through May 2010, comparing actual spending to the FY10 budget, and preliminary year-end projection based on year-to-date May spending.

Total year-to-date expenses are lower than budget by \$26.3 million or 4.8% and total revenues are greater than budgeted by \$322,000 for a net variance of \$26.6 million.

The largest variances are for the favorable variable rate for Debt Service of \$17.7 million; lower direct expenses of \$6.6 million mostly for maintenance, wages and salaries, and chemical spending; lower Pension of \$2.8 million for deferring the voluntary payment; and \$1.4 million for delayed receipt of State Revolving Fund (SRF) funds. The under spending is offset by \$1.9 million in higher insurance claim expenses related to the Cottage Farm, Squantum, the Shaft 5 water pipe break, and damaged equipment during the wet weather events.

At the June 9th meeting, in conjunction with discussions on the most advantageous use of surplus funds, the Board instructed staff to redirect the \$2.8 million voluntary pension payment to a reserve account.

Staff now projects the year-end surplus to be approximately \$29.5 million, \$5.9 million more than presented in the April staff summary. The main reasons for the changes are:

- \$2.8 million for not making the voluntary pension payment;
- \$2.1 million for not receiving the projected SRF funding this year, and lower water pipeline rates; and
- \$1.1 million lower than anticipated timing related spending on direct expenses.

Mr. Laskey stated that the financial staff has done a great job and this is a classic example of long-term rates management. He stated that the Authority is taking advantage of economic trends to provide a multi-year benefit to rates. Director of Administration and Finance Rachel Madden stated that the most important thing was that the surplus has increased; it was closer to \$24 million according to the prior projections, now it is closer to \$29.5 million.

She noted that the staff successfully executed a defeasance on June 17; the cost was \$1.8 million as a result of earnings on escrow.

UPDATE ON WACHUSETT RESERVOIR ALGAE MONITORING AND TREATMENT PROGRAM

Summer is typically the time of year that algae levels increase in the Wachusett Reservoir and present potential water quality problems - the presence of some types of algae can cause taste, odor or other nuisance problems. Only certain species within these families are of concern in Wachusett Reservoir and these are monitored and their levels quantified. The primary nuisance algae causing taste and odor in MWRA's water supply are *Anabaena* and *Synura*. Other potential nuisance algae include *Dinobryon*, *Chryso-sphaerella* and *Uroglenopsis*. Since 1997, MWRA uses the targeted addition of copper sulfate at the early stages of exponential algae growth - when levels are just starting to increase and an algae bloom is considered to be imminent. Control of algae blooms early in the exponential growth phase is most successful in limiting taste and odor impacts.

DCR staff collects algae samples one to two times per week, depending on the season. In addition MWRA Quality Assurance staff monitor algae levels during the summer (twice per week and more frequently if needed). Monitoring and identification of algae is a critical aspect of MWRA's "Algae Response Plan" - algae treatment planning depends on the numbers of the specific nuisance algae measured. The timing of copper sulfate treatment is critical. Algae will "bloom," or enter a period of exponential growth, when conditions are optimum. Exponential growth may occur over a short period of time, typically one to two days. It is important to time the treatment so that levels of taste and odor compounds are low.

Betsy Reily, Senior Program Manager Quality Assurance, noted this is the time of year algae is normally seen. This year, so far so good.

METROPOLITAN WATER TRANSMISSION SYSTEM REDUNDANCY PLAN

The Metropolitan area water transmission system does not currently have redundancy for the City Tunnel, the City Tunnel Extension or the Dorchester Tunnel. The loss of these tunnels would be catastrophic.

As part of a contract with the engineering firm of Fay, Spofford and Thorndike that is studying redundancy for the overall transmission system, a plan has been developed that will provide redundancy for the transmission system within the Metropolitan area. This plan, when combined with the Cosgrove Tunnel Redundancy Pump Station and rehabilitation of the Hultman Aqueduct, will provide redundancy from Wachusett Reservoir to the heart of the distribution system within the Metropolitan area.

The need for transmission system redundancy is driven by two compelling interests. First, MWRA must be able to swiftly respond to a disruption in service. Failure of the deep rock tunnels is unlikely. However, a more likely failure is of surface piping or surface connection valves. This scenario may require isolation of the entire tunnel system, repair of customized equipment at

specific locations and take weeks or months to complete. In general, water systems across the United States use a range of strategies to eliminate such single points of failure. The general goal is to transition to a back-up system that is unnoticeable by the consumer.

Another reason for redundancy is the need to inspect, maintain and rehabilitate these tunnels and key valves on a regular basis. At this time, the Metropolitan tunnels, ancillary valves and equipment are as much as 60 years old and there is currently no way to schedule inspection or maintenance work with an alternate means of providing water supply. Thus, a redundant means of providing service will allow scheduled system rehabilitation as needed and also reduce the risk associated with an emergency event disrupting service.

Fifteen alternatives were evaluated; four alternatives, including a tunnel loop alternative, were developed for various demand scenarios and 11 alternatives were developed to meet average demands. Alternatives meeting average demands allow maintenance to be scheduled and completed during three seasons but cannot meet normal summer demands if routine work were to extend beyond the spring or in the event of an emergency during higher-demand periods. Under such circumstances, demand reductions through mandatory restrictions and possible supply limitations to some partial-user communities would be necessary.

The 15 alternatives were evaluated for a range of criteria and then narrowed down to three key alternatives:

1. A Tunnel Loop to Provide Maximum Day Demands
2. Surface Mains to Provide Average Day Demands
3. Surface Mains with a Tunnel Segment to Provide High Day Demands

Further review of these three alternatives shows that although the tunnel alternative provides full redundancy for maximum day demands, it is extremely expensive and is considerably over-designed for normal operations.

Alternative 2 has the lowest cost but would require water use restrictions in the event of extended repairs or during a seasonally occurring emergency. It also does not adequately consider potential additional water demand due to either new customers or to partial users impacted by drought or emergencies. Additionally, this alternative connects to the system at the Shaft 5 area, which is very congested and could be impacted by flooding or construction activities under certain failure scenarios.

Staff plan to initiate the procurement process for a Concept Design and Environmental Review phase of the Sudbury Aqueduct pressurization work during FY11 and carry out Concept Design and alternatives evaluations before returning to the Board for a detailed presentation of the recommended alternative prior to formal MEPA review in late-fall 2011.

An estimated net cost of \$229 million was added for the water redundancy projects to the Draft FY11 CIP for the Alternative 3, Option A proposal.

The Board engaged in a spirited discussion regarding what is the best median (right) level for redundancy. John Carroll asked if this is a reaction to the Shaft 5A Pipe Break. Mr. Laskey responded that these programs have been developed over the last several years and were always planned to have been done.

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.