Massachusetts Water Resources Authority

Combined Sewer Overflow Control Plan

Quarterly Progress Report
December 17, 2001

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1. Quarterly Progress Overview

The Massachusetts Water Resources Authority ("MWRA") has prepared this document to comply with the quarterly reporting requirement in the Federal District Court Order in the Boston Harbor Case. For the CSO projects referenced in the Court's Order and its schedule of milestones (Schedule Six), the report summarizes progress made during the last quarter (September 14 – December 17, 2001), identifies the current project schedule in relation to relevant milestones, and discusses issues that have affected or may affect compliance with Schedule Six. This report also identifies the status of certain planning and regulatory efforts that relate to state and federal approval of MWRA's CSO plan.

A full description of each project, as well as corresponding Court milestones for design and construction, is not presented in this report, but can be found in MWRA's *CSO Annual Progress Report 2000*, dated February 2001.

CSO-related work in the period September 14 – December 17 included the following (more information is provided in later sections of this report):

- Continued to comply with the conditions of regulatory variances for CSO discharges to the Charles River, Alewife Brook and Upper Mystic River and continued to coordinate related watershed planning activities with others. Received from DEP a one-year extension to the term of the Charles River variance (to October 2002). Submitted a request to DEP for an 18-month extension of the Alewife Brook/Upper Mystic River variance (to September 2003).

- Continued the discussion of NPDES Phase II Permit Modifications with EPA and DEP.

- Continued to make progress on Phase I tasks in the reassessment of the South Boston CSO control plan (North Dorchester Bay and Reserved Channel projects). Lack of rainfall has prevented the water quality sampling program and delayed completion of the reassessment.

- In coordination with the City of Cambridge, continued to work with the Metropolitan District Commission ("MDC"), the Arlington and Cambridge Conservation Commissions and various regulatory agencies towards obtaining permits and licenses necessary to construct the sewer separation project. Commenced additional modeling work to further investigate the potential for flooding impacts due to separated stormwater flows. The MDC indicated that in their opinion Article 97 legislation is required to construct the stormwater detention basin on MDC park land. If Article 97 legislation is required, it may impact MWRA's ability to implement the current CSO recommended control plan for Alewife Brook.

- Completed 50% design of the Union Park Detention/Treatment Facility and the Value Engineering Study for the East Boston Branch Sewer

Relief project. Completed negotiations with the Boston Water and Sewer Commission ("BWSC") on a Memorandum of Agreement between MWRA and BWSC regarding joint ownership, design, construction, operations and maintenance of the Union Park pumping and treatment facilities. Completed the draft RFQ/P and scope of services for design of the Fort Point Channel (BOS072-73) and Charlestown (BOS019) CSO storage conduits.

- In cooperation with Boston Water and Sewer Commission and the City of Cambridge, continued to make design and construction progress on community-implemented sewer separation and floatables control projects.

2. CSO Planning and Regulatory Review Activities

2.1 Charles River and Alewife Brook/Upper Mystic River Variances

Charles River

On October 22, 2001, DEP issued a second one-year extension on the Charles River variance, with the new end date of October 1, 2002. This extension includes a corresponding one-year deferral of the deadline for submitting the report on Cottage Farm CSO Facility evaluations, which MWRA now must submit by July 1, 2002. Extension of the term of the variance was necessary to allow the United States Geological Survey (USGS) to complete certain remaining tasks in its ongoing Charles River Study, including assessment of the potential for stormwater pollution reduction through Best Management Practices. The extension also allows MWRA to sample effluent from the now upgraded Cottage Farm Facility during six facility activations. Sampling has been hampered by a lack of significant rainfall and facility activation over the last several months.

In the meantime, MWRA is continuing to coordinate with EPA and DEP on the outline of the July 2002 Cottage Farm report and expects to meet with these agencies in January to discuss MWRA's progress in upgrading and calibrating the Charles River receiving water model.

Alewife Brook/Upper Mystic River

On December 14, MWRA submitted a letter to DEP requesting an 18-month extension of the Alewife Brook/Upper Mystic River variance, to September 2003. The extension is necessary to allow MWRA and the City of Cambridge to complete a report, required as a condition of the original variance, summarizing and assessing the information developed during the variance process and reassessing the recommended levels of CSO control for Alewife Brook and Mystic River. Stormwater sampling and analysis necessary to

prepare this report have been delayed due to insufficient storms and must be completed. Additional work, as well as related interactions with regulatory agencies and the public, is also necessary to allow MWRA to prepare and submit the Response to Comments document to MEPA. That document must address issues raised in public comments on the Notice of Project Change filed last April. Work to accomplish this is ongoing and is described below, under "Cambridge Sewer Separation (CAM002 and CAM004)."

If no significant issues that would preclude implementation of the proposed plan arise, MWRA and Cambridge will then prepare the Response to Comments document, now expected to be submitted to MEPA in Fall 2002. In addition, MDC has indicated that Article 97 legislation is required for construction of the stormwater detention basin. If Article 97 legislation is required, the Authority expects to file the legislation following public review of the Response to Comments document.

In the meantime, MWRA continues to coordinate these efforts with the regulatory agencies and continues public outreach, including a public meeting scheduled for next month.

2.2 Floatables Control

Work activities related to floatables control, including interaction with regulatory agencies, are described under "Region-wide Floatables Control and Outfall Closing Projects," in Section 3.3.

2.3 NPDES Phase II Permit Modifications

MWRA continued to review NPDES Permit modifications proposed by EPA and DEP, primarily to incorporate Phase II CSO requirements. MWRA expects that EPA and DEP will issue the Draft Permit Modification for public review in January 2002.

3. Project Implementation

3.1 MWRA-Managed Projects

North Dorchester Bay and Reserved Channel Consolidation Conduits and Reserved Channel CSO Facility

As previously reported, Phase I of the MEPA reassessment of CSO control in South Boston involves efforts to update planning assumptions and water quality information and to identify and screen potential CSO control alternatives. In September, MWRA initiated Phase I efforts including updating baseline conditions. Updated baseline water quality information, supported by data from the new wet weather sampling program, will be critical in evaluating CSO control alternatives. Due to lack of rainfall, MWRA was unable to complete the sampling program as scheduled

and will have to resume it next Spring. (It is not feasible to conduct wet weather sampling during winter conditions.) While other Phase I efforts, including those to *develop* CSO control alternatives, will continue, the delayed sampling program will delay efforts to evaluate the identified alternatives, thereby resulting in a delay in completing Phase I. Staff are currently developing a revised schedule.

East Boston Branch Sewer Relief

MWRA's design consultant for this project continued to make progress towards 50% design completion. The consultant has submitted the final geotechnical and hazardous materials report, and the Value Engineering ("VE") Study Team has submitted the VE Report, which is now undergoing review by the design consultant.

The Final Preliminary Design Report ("PDR") was distributed in November. The construction cost estimate in the PDR is $50 million, almost twice the project estimate in the 1997 Final CSO Facilities Plan. The increase is primarily due to an increase in the estimated unit cost for microtunneling, based on the actual costs of similar microtunnelling projects recently constructed by MWRA (e.g. Chelsea Branch Sewer Relief project).

In response to this cost increase, MWRA is conducting a "due diligence" review, involving an evaluation of alternative construction methods that might be feasible and a reassessment of the cost-effectiveness of the project against other CSO control alternatives that were considered in the Facilities Plan. Notwithstanding these evaluations, the current project schedule and progress of work targets commencement of construction by March 2003 and completion of construction by September 2005, in compliance with Schedule Six.

Fort Point Channel and Boston 019 Storage Conduits

MWRA has completed the draft Request for Qualifications/Proposals (RFQ/P) and attendant scope of services to procure one design contract for the CSO storage conduits at outfalls BOS072-073, which discharge to the Fort Point Channel, and at outfall BOS019, which discharges to the Little Mystic Channel in Charlestown. MWRA expects to advertise the RFQ/P in January 2002 and issue the notice-to-proceed for design services by July 2002, in compliance with Schedule Six.

Union Park Detention/Treatment Facility

Final design work began in September, and MWRA received the 50% design plans and specifications during the first week of December. MWRA plans to complete its review of the 50% design submittal by the end of the year, allowing work towards the 90% design stage to proceed. The design

work is progressing on schedule for commencement of construction by March 2003, in compliance with Schedule Six.

Upgrades to MWRA CSO Facilities – Cottage Farm

The Contractor has completed all punch list items, and MWRA is closing out the construction contract. MWRA has completed its acceptance testing and has commenced the period of start-up and optimization referenced in footnote 35 of Schedule Six. No significant rainfall occurred during the last quarter, and there has not been an activation of the Cottage Farm facility meeting the criteria of footnote 35 or otherwise allowing facility start-up optimization.

The pilot testing of sampling systems using self-cleaning strainers, for automated chlorine residual analysis and enhanced process control (referenced in last quarter's report), has not yet commenced at the Caruso Pump Station in East Boston, but is still planned to be conducted over the next several months.

Upgrades to MWRA CSO Facilities - Prison Point

Construction is essentially complete. MWRA continues to be ready to conduct one more acceptance test before entering the period of start-up and optimization referenced in footnote 35 Schedule Six. No significant activation of the facility allowing for such testing occurred in the last quarter.

There was a brief activation of the facility on September 29, which lasted approximately two hours, with no apparent system failures while operating the facility in a manual mode. The storm that caused this activation was not forecasted, and it was not feasible to mobilize the General Contractor, Control System Subcontractor and MWRA Construction and Operations Support personnel for an acceptance test of the system. Even though the contractor has been working with operators to review automatic control system procedures, it is critical that the Control System Subcontractor be on-site to work with the operators to assess the performance of the automatic control system. All pertinent systems are ready for use and testing during the next acceptance testing event.

Upgrades to MWRA CSO Facilities - Commercial Point, Fox Point and Somerville Marginal

Construction is substantially complete at all three facilities and the contractor has been completing punch list items. Instrumentation and control system testing has been performed at all three facilities. The Contractor continues to be ready to perform functional acceptance testing, but has been unable to do so because of the lack of significant

rainfall and facility activation. Training of MWRA operations staff is complete on most systems.

At the Fox Point facility, there were recently three break-ins and thefts. The MWRA has replaced the computer equipment and is now testing the equipment. At the Commercial Point Facility, the MWRA is in the process of replacing one of the sodium hypochlorite pumps. This is a redundant pump, and the need for replacement should not affect acceptance testing.

3.2 Community-Managed Projects

South Dorchester Bay Sewer Separation

BWSC earlier completed construction under two sewer separation contracts (Contracts 5 and 5A). Construction work under four additional contracts is underway: Contract 1 is 98% complete, Contract 2 is 36% complete, Contract 6 is 10% complete and Paving Contract 1 is 65% complete. BWSC is also making design progress on three additional contracts: design of Contract 3 is at the 90% design stage, Contract 4 is at 50% design and Contract 7 is at 75% design. BWSC plans to award a total of 16 construction contracts to complete South Dorchester Bay Sewer Separation by November 2008, on schedule.

Stony Brook Sewer Separation

BWSC earlier completed construction under the first sewer separation contract (Contract 4) and work under construction Contract 1 is 20% complete. BWSC continues to make design progress on Contracts 2 and 3, which are both at the 90% design stage. BWSC plans to award a total of seven construction contracts to complete South Dorchester Bay Sewer Separation by September 2006, on schedule.

BWSC Floatables Control

Construction work to install underflow baffles for floatables control at CSO regulators RE057-6 and RE064-5, which is being performed by Central Artery/Third Harbor Tunnel (CA/T) contractors, has commenced and will be completed this month.

Cambridge Floatables Control

Floatables control is planned at seven Cambridge outfalls and one Somerville outfall along Alewife Brook, which are all part of the Cambridge/Alewife Brook sewer separation project. These projects continue to be delayed pending approval of the revised CSO plan for Alewife Brook.

Cambridge continues to make progress in designing floatables controls at Charles River outfalls CAM007, CAM009, CAM011 and CAM017. Construction is scheduled for 2002.

Cambridge Sewer Separation (CAM002 and CAM004)

The Secretary's Certificate on the Notice of Project change required MWRA and the City of Cambridge to prepare a Response to Comments document. As noted last quarter, the project team anticipated completing the Response to Comments document ("RTC") this fall. However, due to the need for performing significant additional engineering and modeling and coordinating with regulatory agencies regarding project requirements, that goal was not met. Much of the ongoing MEPA work relates to concerns raised by the public and agencies relative to the potential for the separated stormwater to aggravate flooding along Alewife Brook and the impacts of proposed construction of a stormwater detention basin within the Metropolitan District Commission ("MDC") Alewife Brook Reservation. On these issues, MWRA and Cambridge continue to work with the Arlington and Cambridge Conservation Commissions, the MDC, the Department of Environmental Management, the Department of Environmental Protection, local elected officials and others parties. Staff have developed a revised schedule for submission of the document, which defers submission to the fall of 2002. MWRA expects to conduct an informational public meeting next month, to update interested parties on the status of preparing the RTC.

Upon submission of the RTC, MWRA expects MEPA to notice the document in the Environmental Monitor, commencing a 30-day comment period. At the close of this comment period, MEPA is expected to issue a second Certificate verifying that the project proponents have fulfilled the Certificate requirements and have completed the MEPA process. At that time, MWRA and the City of Cambridge will resume the construction permit application processes. These permitting processes will provide additional avenues for public review.

In the meantime, Cambridge is evaluating the feasibility of moving forward with certain portions of the revised CSO plan that may be amenable to being constructed while MWRA and Cambridge continue to work towards obtaining approvals on the overall plan, especially the stormwater detention basin.

As previously reported, Cambridge commenced construction of sewer separation in January 1997, in compliance with Schedule Six, and has completed four construction contracts since then. At this time, MWRA and Cambridge anticipate that additional construction contracts will not commence until the MEPA requirements established in the recent Certificate are satisfied.

Dorchester Brook Conduit In-line Storage

MWRA and BWSC continue to coordinate efforts to implement system optimization plans (SOPs), namely the raising of a weir, the installation of a tide gate and the inspection and cleaning of a sediment-laden interceptor connection necessary to further reduce CSO discharges to the Dorchester Brook Conduit, as recommended in previous reports submitted to DEP and EPA. MWRA and BWSC expect to complete the work by April 2002, in compliance with Schedule Six.

3.3 Region-wide Floatables Control and Outfall Closing Projects

MWR010 Outfall Closing

MWRA operations and maintenance crew have scheduled an inspection this month of the obstructed dry-weather connection between the Town of Brookline combined sewer and MWRA's Charles River Valley Sewer. Based on the inspection findings, and in coordination with the Town of Brookline, MWRA will develop a work plan and schedule for returning the dry weather connection back to service and maintaining the connection in an operable condition. Bringing this connection back into service will further reduce already infrequent CSO discharges at outfall MWR010, as reported to EPA and DEP earlier this year. MWRA plans to seek EPA and DEP approval not to close this outfall under the long-term CSO control plan, as had been recommended in the 1997 CSO Facilities Plan.

Floatables Control Upstream of MWR018, 019 and 020

MWRA operations and maintenance crew have scheduled an inspection this month of sediment conditions in MWRA's Boston Marginal Conduit. Based on the inspection findings and earlier observations, MWRA will develop a work plan and schedule for removing any accumulated sediment. A report submitted to EPA and DEP earlier this year predicted that infrequent CSO discharges at outfalls MWR018, 019 and 020 could be further reduced if the Boston Marginal Conduit were cleaned to maximize transport capacity.

MWRA continues to be prepared to operate the Prison Point CSO Facility in a manner that will reduce backup of flows along the Boston Marginal Conduit and CSO overflows at the three outfalls, as recommended in the report. MWRA also continues to collect depth of flow data at the depth sensor it installed at the upstream end of the Boston Marginal Conduit, although the lack of significant rainfall has limited the flows in the conduit and the importance of the collected data.