

Massachusetts Water Resources Authority



**Combined Sewer Overflow
Control Plan**

**Quarterly Progress Report
June 13, 2002**

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1. Quarterly Progress Report

The Massachusetts Water Resources Authority (the "MWRA") hereby submits its second quarterly progress report for 2002. This report complies with the quarterly reporting requirement in the Federal District Court's Orders in the Boston Harbor Case.

For the combined sewer overflow (CSO) projects referenced in the Court's Orders and its schedule of milestones (Schedule Six), the report summarizes progress made during the second quarter of calendar year 2002 (March 15 - June 13, 2002). This quarterly report identifies the current project schedule in relation to relevant milestones. The report discusses issues that have affected or may affect compliance with Schedule Six. This report also identifies, relative to the second quarter, 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 Control Plan Annual Progress Report 2001*, dated March 2002.

MWRA continues to make substantial progress in implementation of its approved CSO Long-Term Control Plan. The overall status of program implementation at the end of this reporting period, is as follows:

- 13 (or 52% of all) CSO projects have been completed,
- 4 (or 16% of all) CSO project are in construction,
- 2 (or 8% of all) CSO projects are in design, with two additional projects ready to begin design in July 2002, and
- Completed closure of 21 out of 35 CSO outfalls scheduled to be closed.

The overall cost of the CSO Control Plan continues to grow considerably since the plan was approved and Schedule Six amended. Project costs have increased from \$480 million to \$620 million. Furthermore, future decisions on floatables control, determinations relative to the Charles River and Alewife Brook/Mystic River Variances, the South Boston CSO reassessment and more detailed designs and construction related impacts may further significantly increase the overall costs of the program.

CSO-related work in the period March 15 - June 13 included the following significant events (more information is provided in later sections of this report):

- Completed 100% draft design specifications and drawings for the Union Park Detention/Treatment facility.
- 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.

- Continued to make progress in the reassessment of the South Boston CSO control plan (North Dorchester Bay and Reserved Channel projects).
- In coordination with the City of Cambridge, continued preparation of the MEPA required Response to Comments on the Notice of Project Change ("NPC").
- Continued to make substantial progress in construction of South Dorchester sewer separation. BWSC still anticipates that it will complete this project ahead of the Schedule Six milestone.
- Continued to make substantial progress in construction of Stony Brook sewer separation. BWSC still anticipates that it will complete this project ahead of the Schedule Six milestone.

2. CSO Planning and Regulatory Review Activities

2.1 Charles River and Alewife Brook/Upper Mystic River Variances

Charles River

On May 20, 2002, MWRA met with EPA and DEP to discuss the status of the July 2002 submittals required by the Charles River variance. At the meeting, MWRA discussed delays in several ongoing work efforts that would make it impossible to submit the July 2002 submittals in accordance with the variance requirements. MWRA indicated that it did not receive a report prepared by USGS that assesses the effectiveness of Best Management Practices until May 2002, three months after it was due. This report will be the basis for developing different modeling scenarios for the July 2002 submittals. MWRA also indicated that it was unable to complete the start-up phase at the Cottage Farm CSO facility due to the drier than normal weather in the fall of 2001 and early spring of 2002. Because MWRA has not yet achieved a long-term, optimized operational condition at the Cottage Farm facility, it cannot complete the water quality sampling program necessary to assess treatment performance in the July 2002 submittals. To date, MWRA has completed three of the five start-up events at the Cottage Farm facility and anticipates that it will complete the remaining two events this summer or early fall 2002.

MWRA also noted that it had recently discovered new information indicating that a weir in the South Charles Relief Sewer is set one foot lower than in the model used for facilities planning and that flows that were previously thought to be separated in Brookline have been determined

to be combined and that both of these may affect the annual volume and activations predicted for the Cottage Farm CSO facility in MWRA's 1997 Final CSO Facilities Plan and Environmental Impact Report ("Final FP/EIR"). As a result, MWRA noted that it would need additional time to conduct further investigations.

Based on the need to complete the required water quality sampling program and to fully understand the impacts of the new information on flows tributary to Cottage Farm, MWRA now expects to request both a deferral of the submittal date for the July report and an extension to the overall variance period which expires on October 1, 2002. MWRA is currently reviewing this data in more detail and expects to submit a letter to DEP later this month requesting an extension to the Charles River Variance and indicating the length of time necessary to complete the required tasks.

Alewife Brook/Upper Mystic River

On May 8, 2002 DEP extended the Alewife Brook Upper Mystic River variance by 18 months, to September 2003. The extension was necessary to allow MWRA to prepare the Variance-required assessment report and for MWRA, Cambridge and Somerville to complete stormwater sampling. Work to accomplish that is ongoing.

Additional work, as well as related interactions with regulatory agencies and the public, is necessary before MWRA can 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 in April 2001.

If no significant issues that would preclude implementation of the proposed plan arise, MWRA and Cambridge will complete the Response to Comments document, now expected to be submitted to MEPA in late Fall 2002.

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.

3. Project Implementation

3.1 MWRA-Managed Projects

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

MWRA continued to make progress toward completing Phase I of its reassessment of CSO control alternatives for South Boston. MWRA was able to sample the three remaining storm events necessary to complete the originally scoped wet weather sampling program portion of Phase I. Although these events provided useful information regarding stormwater loadings, MWRA was not able to collect sufficient CSO data to calibrate the receiving water model. This is because the April 25 and May 2 events did not cause CSO activations, and the severe storm conditions on May 13 prevented the boat from safely maneuvering to collect receiving water samples in North Dorchester Bay. As a result, additional wet weather sampling is necessary. MWRA still anticipates that it will be able to complete Phase I of the reassessment in the fall of 2002.

MWRA met with the United States Department of Justice ("DOJ"), EPA, and DEP to discuss the range of alternatives and levels of control under consideration and the current reassessment schedule. MWRA also held its third public meeting on the reassessment, to update the public on the status of the preliminary alternatives evaluation.

MWRA also made considerable progress in the evaluation of control alternatives, tentatively identifying the most promising options to carry forward for further analysis. The status of the alternatives evaluation from the initial full list will be presented and discussed at a June 26, 2002 MWRA Board meeting, a June 27 public meeting, and at briefings with EPA, DOJ and DEP in July.

East Boston Branch Sewer Relief

In April, MWRA's Board of Directors authorized the suspension of certain design work related to relief of the East Boston Branch Sewer in order to perform a reassessment of the CSO control approach for the East Boston CSO outfalls. This decision was the result of new information indicating that the cost of the project had risen significantly and that the CSO control benefits of the project may not be fully achievable.

MWRA is now developing a detailed scope and schedule for the project reassessment, which MWRA expects to be completed by the end of the year. In the meantime, MWRA has suspended design work associated with most of the East Boston Branch Sewer relief work. Design work continues on a contract to reline and rehabilitate the MWRA's main trunk sewer serving the neighborhood, and MWRA expects to issue a notice to proceed on this contract by March 2003, in compliance with the Schedule Six milestone for commencement of construction.

Fort Point Channel and Boston 019 Storage Conduits

During the second quarter MWRA entered into contract negotiations with the selected design consultant and expects to issue a Notice to Proceed in July 2002 in compliance with Schedule Six. This contract concerns the CSO storage conduits at outfalls BOS072-073, which discharge to the Fort Point Channel, and outfall BOS019, which discharges to the Little Mystic Channel in Charlestown.

Union Park Detention/Treatment Facility

During this quarter, MWRA made significant strides in finalizing design planning for the air emission stack at the new Union Park facility. The air emissions stack design issues were addressed during this period, with significant input from the abutters and the neighborhood association. In June MWRA received 100% draft design plans and specifications for the Union Park Treatment/Detention facility. Project implementation remains in compliance with Schedule Six.

Upgrades to MWRA CSO Facilities - Cottage Farm

During the past quarter, MWRA completed three of the five start-up and optimization events referenced in footnote 35 of Schedule Six at the Cottage Farm CSO facility and anticipates that it will be able to complete the remaining two events this summer or early fall 2002.

Upgrades to MWRA CSO Facilities - Prison Point

Over the past quarter, MWRA completed the acceptance testing phase for the Prison Point CSO facility and commenced the start-up and optimization phase referenced in Footnote 35 of Schedule Six. To date, MWRA has completed two of the five start-up events and expects that it will be able to complete the remaining three this summer or early fall 2002.

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

MWRA completed the acceptance testing phase at the Commercial Point, Fox Point and Somerville Marginal CSO facilities in May and has commenced the start-up and optimization phase referenced in footnote 35 of Schedule Six.

3.2 Community-Managed Projects

South Dorchester Bay Sewer Separation

Construction work under four contracts continued during the second quarter: Contract 1 is 98% complete, Contract 2 is 62% complete, Contract 6 is 38% 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 and 8 is at 50% design and Contract 7 is at 90% design. Construction contract 10, sediment cleaning, was advertised on June 5 and bids are due July 2. BWSC plans to award a total of 16 construction contracts to complete South Dorchester Bay Sewer Separation. BWSC anticipates that it will complete the work ahead of the Schedule Six milestone.

Stony Brook Sewer Separation

Over the past quarter, BWSC completed an additional 10% of construction on Contract 1 and has now completed 30% construction. BWSC also completed design of Contract 2 and is preparing the contract for advertisement. BWSC anticipates that it will complete the work ahead of the Schedule Six milestone.

BWSC Floatables Control

Central Artery/Third Harbor Tunnel (CA/T) contractors completed construction work to install underflow baffles for floatables control at CSO regulators RE057-6 and RE064-5.

Cambridge Floatables Control

Floatables control is planned at seven Cambridge outfalls and one Somerville outfall along Alewife Brook, which is all part of the Cambridge/Alewife Brook sewer separation project. During the second quarter these projects continued 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)

MWRA and the City of Cambridge (the "City") continue to work on preparing responses to issues and questions raised in public comments on the NPC.

A considerable number of these comments related to the potential for increased stormwater discharges to exacerbate existing flooding along the Alewife Brook and the impacts to the Alewife Brook Reservation from the proposed wetland detention basin.

In addition on March 30, the City and MWRA held a technical workshop for interested parties to discuss the model construction and calibration. Since that time, the City has proceeded with model runs incorporating proposed project conditions to assess hydraulic scenarios and evaluate implications for detention basin design. Preliminary model results indicate that by reducing the size of the proposed stormwater outfall and modifying the detention basin design, the City would be able to implement the project without increasing existing flood conditions along the Alewife Brook. MWRA and the City will present the results of the model runs and discuss preliminary concepts for modifying the wetland detention basin design to interested parties at a follow-up technical workshop scheduled for June 13.

Efforts also proceeded in preparing responses to public comments related to other issues, particularly those associated with the proposed level of CSO control. At this time, MWRA and the City anticipate that, because preparation of the Response to Comments required significant additional technical evaluation as well as interagency and public coordination, they will not be able to meet the September 2002 MEPA submittal date previously reported and will need up to three additional months to complete and file the document.

The City and MWRA met with the Metropolitan District Commission ("MDC") on March 21 and May 15 to coordinate modifications to the design of the proposed wetland detention basin to comport with the ecological restoration objectives of MDC's Alewife Reservation Master Plan. MWRA and the City also met with EPA, DOJ, and DEP on March 26, to address the possibility of completing portions of the project on an accelerated schedule and to provide an update on the status of other activities.

In the meantime, the City is continuing with the construction of contract 2B (Fresh Pond Parkway sewer separation) and is still on schedule to complete this contract next month.

Dorchester Brook Conduit In-line Storage

MWRA and BWSC continued 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.

On June 11, MWRA sent a letter to EPA and DEP on the status of completing these optimization and maintenance measures. BWSC has completed its evaluation to determine the scope of work necessary to raise the weir, and had issued a notice to proceed for design services for weir raising and the new tide gate. The design work is underway, and BWSC expects to finalize the construction documents by July.

3.3 Region-wide Floatables Control and Outfall Closing Projects

MWR010 Outfall Closing

On January 24, 2002, MWRA field crew cleaned Brookline's dry weather connection and returned it to service. Since then, the crew have revisited the site and verified that the connection is still operating satisfactorily. MWRA maintains a permanent flow meter in the Brookline combined sewer (St. Mary's St. and Ivy St.), primarily for rates purposes. The hydraulic benefits of the pipe cleaning were clearly indicated from this upstream meter data, which showed a significant drop in average depth and a significant rise in average velocity immediately upon completion of the cleaning program. Meter data has since shown that the lower depth and higher velocity are still evident. The meter data has become a convenient and useful tool in verifying the continued operation of the dry weather connection. The meter data should also indicate when corrective action is again warranted.

MWRA has achieved a very high level of CSO control at MWR010, but continues to recommend that the outfall not be closed, to minimize upstream flooding in severe storms.

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 has completed all of the optimization and maintenance measures recommended in its reports submitted to EPA and DEP last year on the reassessment of CSO activation frequency and volume at outfalls MWR018, 019 and 020. These measures included reinstalling and raising overflow weirs at the outfalls, changing the operational procedures at Prison Point to reduce water surface elevations in the Boston Marginal Conduit (BMC), cleaning portions of the BMC where sediment build-up had been

observed, and installing and maintaining a depth sensor in the upstream end of the BMC.

The depth sensor has provided continuous depth data which MWRA has evaluated in an attempt to draw relationships between flow depths in the BMC, operations at Prison Point and the overflow weir elevations at MWR018, 019 and 020. However, because storm events have been few, and those that have occurred have been unusually short and of high intensity, more monitoring and evaluation is necessary before MWRA can draw conclusions and decide to make any additional system changes that may further reduce CSO discharges at the outfalls.

With the reinstallation and raising of outfall weirs at MWR018, 019 and 020, the revised operational procedures at Prison Point and the cleaning of the BMC, MWRA believes that it has achieved a high level of CSO control at these outfalls, with no activation in a typical rainfall year. MWRA believes that the reduction in CSO discharge levels has accomplished the necessary control of floatable materials and their impacts on the Charles River Basin and that no additional floatables control measures are necessary.