

UNITED STATES DISTRICT COURT

for the

DISTRICT OF MASSACHUSETTS

.....

UNITED STATES OF AMERICA, .

Plaintiff, .

CIVIL ACTION

v. . No. 85-0489-MA

METROPOLITAN DISTRICT COMMISSION, .

et al., .

Defendants. .

.....

CONSERVATION LAW FOUNDATION OF .

NEW ENGLAND, INC., .

Plaintiff, .

CIVIL ACTION

v. . No. 83-1614-MA

METROPOLITAN DISTRICT COMMISSION, .

Defendants. .

.....

MWRA QUARTERLY COMPLIANCE AND

PROGRESS REPORT AS OF MARCH 14, 2003

The Massachusetts Water Resources Authority (the "Authority") submits the following quarterly compliance report for the period from December 16, 2002 to March 14, 2003, and supplementary compliance information in accordance with the Court's order of December 23, 1985, and subsequent orders of the Court.

I. Schedule Six

A status report for the scheduled activities for the month of January 2003 on the Court's Schedule Six, certified by Frederick A. Laskey, Executive Director of the Authority, is attached hereto as Exhibit "A."

A. Activities Completed.

1. Commence Design of Hydraulic Relief for BOS017 and Storage Conduit for BOS019.

In accordance with Schedule Six, the Authority met the January 2003 milestone for the commencement of design of the combined sewer overflow ("CSO") storage conduit for BOS019 by issuing a Notice to Proceed with design in July 2002 (seven months ahead of schedule). The design contract combines design and engineering services during construction for both the storage conduit for BOS019, which discharges to the Little Mystic Channel in Charlestown, and the storage conduit for BOS072 and BOS073, which discharges to Fort Point Channel in South Boston.

The Authority not only commenced design but completed construction of the hydraulic relief project for BOS017 in July 2000 (six years ahead of schedule) in conjunction with the hydraulic relief project for CAM005.

## B. Progress Report.

### 1. State of the Harbor Report.

The Authority recently published its latest "State of the Harbor" report, a copy of which is attached as Exhibit "B." [\*The State of Boston Harbor: Mapping the Harbor's Recovery\*](#) (the "Harbor Report") focuses on both dramatic and subtle changes in the waters, sediments and living natural communities of this urban marine ecosystem, as it recovers from centuries of receiving metropolitan Boston's sewage.

The Harbor Report uses a decade of environmental monitoring data and maps created by geographic information system analyses to show how the Harbor has changed since the beginning of the Boston Harbor Project. The data gathered to date on the quality of sediments, water and marine life in Boston Harbor and Massachusetts Bay show that the new outfall has been functioning as anticipated, by providing rapid dilution to the effluent, with no significant adverse impacts.

The Harbor Report also describes changes in water quality following the reduction of combined sewage discharges and the elimination of treatment plant discharges (both sludge and effluent) to the harbor. Monitoring results demonstrate continued improvements as nutrients decrease to levels more typical of a natural estuary. The quality of the harbor floor environment has improved, with greater oxygenation of sediments, and harbor-wide biodiversity of sediment animal communities increasing. Water clarity has improved, especially in areas immediately around the former outfalls. Bacteria counts have dropped dramatically throughout most of the harbor, but problem areas along the shoreline reveal the effects of other sources of coastline contamination. Results of monitoring at Boston Harbor beaches indicate that beaches are generally swimmable and bacteria counts typically are well within standards. High bacteria counts, when they do occur, may result from a variety of different sources, which can include illicit connections, storm drain and street runoff, illegal boat discharges, bird and animal waste and CSO discharges, but the causes of variation in bacteria counts are not always obvious. For example, Carson Beach in South Boston is the second cleanest beach in the harbor (after Pleasure Bay Beach), but has seven CSO outfalls and storm drains. On the other hand, Wollaston Beach in Quincy, one of the most contaminated beaches in the harbor, has no CSO or other sewage discharges, but eight storm drains discharge along its shoreline. Identifying and eliminating other non-wastewater sources of contamination and maintaining local storm and sewer systems are essential to realizing the full benefits of the Boston Harbor Project.

Monitoring in Massachusetts and Cape Cod Bays insures that these improvements to the harbor are not coming at a cost of environmental degradation in the Bays. The first two years of monitoring the new outfall have shown that the presence of the outfall can be detected as an area of increased ammonia concentration, as predicted, but that indicators of ecosystem health, such as dissolved oxygen, community diversity and fish and shellfish health show no adverse impacts.

The Authority's investment in environmental quality continues, as the CSO plan is implemented, infiltration and inflow are addressed and projects to maintain and improve the interceptor and pumping system are built. Continued efforts by cities and towns, advocacy groups, local, state and federal regulatory agencies to understand and address water quality problems will ensure that the recovery of the harbor and its watershed continues.

## 2. Combined Sewer Overflow Program.

### (a) Annual CSO Progress Report.

Pursuant to Schedule Six, the Authority submits as Exhibit "C" its [Annual CSO Progress Report](#) (the "Annual Report"). The Annual Report identifies CSO planning, design and construction progress and accomplishments during 2002, describes delays or potential delays in completing projects on schedule, and sets forth important activities for 2003.

The Annual Report for 2002 also reviews the considerable progress the Authority and its CSO communities have made over the past ten years since the Authority began efforts in 1992 to develop and implement a revised long-term plan for CSO control. Significant accomplishments, as well as significant obstacles, hurdles and risks are addressed, with particular emphasis on the risks the Authority could face in completing the plan and bringing CSO discharges into compliance with federal and state regulations.

To date, the Authority has spent almost \$200 million on planning, design and construction of CSO projects. With the cooperation of its CSO communities, the Authority has completed 14 of the 25 projects the plan recommends. Three additional projects are well into construction, and two more are expected to move into construction this spring. Of the 84 CSO outfalls addressed in the plan, 21 have been closed to CSO discharges (of the total 35 recommended to be closed). CSO discharges to Constitution Beach and the Neponset River have been eliminated.

On page five of the 2002 CSO Annual Report, the Authority presents a chart that lays out the CSO control progress achieved to date. Improvements to the Authority's wastewater transport and treatment systems over the last 15 years have produced huge reductions in CSO discharges, with dramatic improvement in water quality, especially in waters where CSO discharges were a major contributor of pollutants, such as Boston Harbor and the Charles River. The chronic dry weather combined sewer overflows of the past have been eliminated in all areas. The average annual volume of CSO discharge has been reduced from 3.3 billion gallons in 1988 to 0.8 billion gallons today, with 58 percent of the remaining overflow receiving treatment at the Authority's five CSO facilities. As a result, CSO impacts to water quality have been greatly reduced.

Of the ten beach postings at Carson Beach in 2002, only one was attributable to rainfall conditions that may have triggered a CSO activation; the remaining postings were either precautionary<sup>1</sup> or occurred during dry or damp weather. In the Charles River, water quality has improved dramatically since monitoring began in the late 1980s. Geometric mean bacteria counts decreased nearly ten-fold between 1989 and 2001. For Boston Harbor, a decrease in bacteria counts harbor-wide since the late 1980s show the cumulative effect of the Boston Harbor Project and CSO control projects. Water quality samples collected at Carson Beach in South Boston in dry and wet weather in the period from 1996-2000 show 94-percent compliance with swimming standards. The counts in the outer harbor are now at or below detection limits and well within the swimming standard. Problems remain along some shoreline areas in the harbor, the Mystic and Neponset Rivers and Alewife Brook, primarily caused by urban stormwater discharges, which occur every time it rains, as well as remaining, less frequent CSO discharges in the harbor, Alewife Brook and Mystic River.

The total cost of the CSO plan (planning, design and construction) has risen from \$411 million when the Final CSO Conceptual Plan was issued in 1994, to \$481 million when the Final CSO Facilities Plan and Environmental Impact Report was approved in 1997, to \$651 million in the Authority's Proposed Fiscal Year 2004-2006 Capital Improvement Program. Depending on the outcomes of ongoing reassessments and future regulatory decisions, there is a risk that the cost could climb as high as \$950 million. All of these revised assessments and regulatory decisions are expected to be made in late 2003 (Charles River, Alewife Brook) and early 2004 (East Boston, South Boston).

In 2002, the Authority continued to make progress with design and construction of the CSO projects. The Authority completed the design work on the Union Park Detention and Treatment facility and on the first construction contract for the East Boston Branch Sewer Relief project. The Authority also commenced design

efforts on the Fort Point Channel (BOS072 and BOS073) and Charlestown (BOS019) Storage Conduits in July 2002.

Boston Water and Sewer Commission ("BWSC") continued to make substantial progress in moving more of the sewer separation work for South Dorchester Bay and Stony Brook into construction in 2002. BWSC awarded three new construction contracts (\$21 million) for South Dorchester Bay and one large construction contract (\$9 million) for Stony Brook in 2002. Also, the City of Cambridge completed a large sewer separation contract (Contract 2B) in the Fresh Pond Parkway area. Other work on the Alewife Brook sewer separation project in 2002 involved planning and preliminary design efforts to complete MEPA review and obtain regulatory approvals for the revised plan.

The Annual Report also highlights project milestones and key work activities scheduled in 2003. The Authority plans to commence construction of the detention and treatment facility at the Union Park Pump Station and interceptor relief for BOS003-014 this month, in accordance with Schedule Six. In addition, the Authority plans to commence Phase II of its South Boston Reassessment this month and to submit its Response to Comments for the Cambridge Sewer Separation Notice of Project Change to MEPA in April 2003.

(b) North Dorchester Bay and Reserved Channel Consolidation Conduits and CSO Facility.

The Authority acknowledges the United States' Response to its December quarterly Compliance and Progress Report and wishes to assure the United States and the Court that it is working diligently to complete the South Boston CSO reassessment. With the Authority's inability to implement its previously recommended plan for South Boston CSO control, it recognized that in order to build a CSO control alternative, it was important to attempt to develop a consensus among the various stakeholders. The Authority continues to believe that it must undertake a thorough reassessment to identify the most viable options for CSO control in South Boston. Assessing the economic and environmental implications of each option, as required by the MEPA process, is a principal consideration. In so doing, the Authority has used an open public process, involving the South Boston neighborhood, environmental agencies and other stakeholders.

The Authority is convinced, through its discussions with the various groups, that reaching consensus on a long-term plan to comply with the Clean Water Act will depend in part on a common, informed understanding of the water quality benefits of the options and the remaining water quality conditions following implementation of any plan. Even though the Authority already has several years of water quality data available to it, it needs to update this data (a) to reflect the hydraulic effect of the new Deer Island Treatment Plant outfall on the CSO outfalls, (b) to show the impacts of the repair of several illegal connections to the storm drains that were recently discovered by the Boston Water and Sewer Commission, (c) to measure *Enterococcus* rather than fecal coliform bacteria in CSO and other sources as required by the Department of Public Health and (d) to calibrate a more precise model of the receiving water. Without this data, the Authority will not be able to describe the stormwater and CSO impacts to the receiving water in larger storms or to compare the three remaining CSO control options in terms of hours of violation of the swimming standard.

Since last reporting, the Authority has completed Phase I of its reassessment of CSO control alternatives for South Boston pursuant to the Secretary of Environmental Affairs' Certificate on the Notice of Project Change (the "NPC") for the North Dorchester and Reserved Channel Conduits and Reserved Channel CSO Facility project.<sup>2</sup> The Authority plans on commencing Phase II of the reassessment later this month. Phase II, at a cost of \$1.2 million, will include the completion of the water quality program that was hampered by the lack of sufficient rainfall during Phase I, a detailed layout and evaluation of the CSO control alternatives that fall within the three CSO control options identified in Phase I, the development of approaches that phase in CSO control over several years, the selection of a recommended plan and implementation schedule, and the preparation of a Supplemental Environmental Impact Report ("SEIR"). In addition, extensive communication and coordination with the community, environmental advocacy organizations and other interested parties will continue to be a critical component of the reassessment, in parallel with the water quality and alternatives evaluation components. The Authority anticipates that the Phase II work will take approximately 12 months to complete and that it will be able to submit the SEIR to MEPA in March 2004.

While the Authority has been progressing with the reassessment, BWSC, in cooperation with the United States Environmental Protection Agency ("EPA"), has been working to identify and correct pollution problems along the beaches in South Boston, with emphasis on dry weather problems, in response to high bacteria counts in North Dorchester Bay in the vicinity of the outfalls. The investigations initially focused on the storm drainage systems tributary to outfalls BOS087 and BOS083, where inspections identified dry weather flow in the drains and outfall pipes. BWSC dye tested 60 houses on the drainage system tributary to BOS087 and found three illicit sanitary connections. BWSC also dye tested 20 houses on the drainage system tributary to BOS083 and identified two illicit sanitary connections. BWSC has corrected all of these illicit connections, removing an estimated 780 gallons of wastewater that had been released through the outfalls daily, even during dry weather. In addition, BWSC found a leak in a sanitary sewer that was causing a flow of approximately 10,800 gallons per day into outfall BOS084, which discharges to Carson Beach. BWSC repaired the leak by installing a liner within the sewer. BWSC is currently developing a program to investigate additional storm drainage pipes that discharge to the South Boston beaches.

The Authority continues to hope that by working together with all parties it can develop and secure broad acceptance of a project that will improve water quality at the South Boston beaches at an affordable cost.

(c) Cambridge Sewer Separation.

Since last reporting, the Authority and the City of Cambridge have intensified their efforts toward preparing, reviewing and producing a Response to Comments to address issues and questions raised in public and regulatory comments on the Notice of Project Change filed on April 30, 2001.<sup>3</sup> The Authority and the City of Cambridge anticipate that they will be able to file the document with MEPA in April 2003. Upon submission, the Authority expects that MEPA will notice the document in the Environmental Monitor, commencing a public comment period.

In addition, on February 10, Authority staff met with the *tri-community working group*, which includes members from the City of Cambridge and the Towns of Arlington and Belmont, to discuss relationships between sewer overflows and flooding along Alewife Brook. Staff plan to participate in a public presentation on flooding issues, with officials from the City of Cambridge and the Towns of Arlington and Belmont this spring.

(d) Interceptor Relief for BOS 003-014.

On March 12, 2003, the Authority's Board of Directors approved the award of the first construction contract for the East Boston Branch Sewer Relief project, which is intended to reduce CSO discharges to Boston Inner Harbor and Chelsea Creek at outfalls BOS003-014. The Authority expects to execute the contract and issue a notice to proceed to the contractor by March 31, 2003, in compliance with Schedule Six. As reported last quarter, this first contract involves relining the main trunk sections of the Authority's East Boston Branch Sewer to improve hydraulic conditions and provide long-term structural integrity. The work of this contract alone, at a cost of \$5.1 million, should lower CSO discharges at many of the upstream outfalls.

Work beyond this first contract is necessary to re-evaluate the CSO control plan for BOS003-BOS014 recommended in the Authority's 1997 CSO Facilities Plan and Environmental Impact Report. The Authority suspended final design work associated with the remaining two construction contracts for this project in June 2002 pending a reevaluation of the costs and benefits of engineering options for completing the project due to an error in the initial engineering analysis that over estimated the reduction in CSO associated with the recommended plan. The Authority intends to evaluate various combinations of interceptor relief and sewer separation in East Boston with the goal of recommending an optimum plan that provides an appropriate level of CSO control at an affordable cost. Although the Authority had completed a draft scope of services for the reevaluation work in late 2002, it has not yet finalized that scope or commenced the study. Instead, the Authority has met with BWSC, on more than one occasion, and with others to understand the hydraulic benefits of a sewer separation project that may significantly lower CSO discharges in East Boston and change the sewer system conditions that form the baseline for the Authority's proposed reevaluation.

BWSC and the Authority are discussing the feasibility and benefits of separating some of BWSC's combined sewers in the Jeffries Point area, primarily along and near Marginal and Cottage Streets. BWSC anticipates that the work will significantly reduce CSO discharges at BOS006 and BOS007, with the potential of closing these outfalls. The Authority will evaluate the potential for hydraulic benefits and CSO reduction in the collection system downstream of this separation work. The sewer separation may also reduce wet weather flows and affect the cost and/or benefits of the Authority's relief plan.

BWSC has discussed site improvements with the developer of a large waterfront project known as "Portside at Pier One." The discussions focused on building new storm drain outfalls across the development parcel. The new storm drains would help the developer meet the Commission's requirement that new development offset the impact of new wastewater flows with a reduction in inflow to the collection system. The Authority will continue to work with BWSC and the developer as they finalize their plans. The developer expects to submit a Final Environmental Impact Report on the development project to MEPA this spring. The Authority is interested in determining the impacts of BWSC's and the developer's projects on baseline sewer system flows and on CSO overflows before proceeding with the reevaluation of CSO control alternatives for East Boston. The Authority now expects to commence the reevaluation work by June 2003 and to complete the study by the end of this year.

(e) Dorchester Brook Conduit In-line Storage.

Since last reporting, BWSC awarded the construction contract for the system optimization plans recommended by the Authority to reduce CSO discharges to the Dorchester Brook Conduit, which includes raising an overflow weir and installing a tide gate. The Authority expects that BWSC will complete this work in May 2003.

(f) Union Park Detention and Treatment Facility.

On March 6, 2003, the Authority received general bids for the construction contract for the detention and treatment facility at Union Park Pump Station, and the Authority's Board of Directors approved the award of the contract in the amount of \$37.2 million at its March 12 meeting. The Authority expects to issue the Notice to Proceed with construction by March 31 in compliance with Schedule Six. However, as previously reported, the Authority determined that the 24-month duration for construction prescribed in Schedule Six was insufficient to complete the work and estimated that the construction duration would be 30 months.<sup>4</sup> The Authority plans to meet with EPA and the Massachusetts Department of Environmental Protection to present its current construction schedule in April.

By its attorneys,

Dated: March 14, 2003

**Notes:**

1. Metropolitan District Commission beach managers sometimes post swimmers' advisories immediately after a significant rainstorm without waiting for laboratory analysis of a sample, which is not available until the day after the sample is taken. If the analysis shows that the sample, in fact, met water quality standards, the beach posting is tabulated as "precautionary." If the sample did not meet water quality standards, that would be tabulated as a wet weather exceedance of beach water quality criteria.

2. See Compliance and Progress Reports for December 16, 2002, pp. 4-12; September 16, 2002, pp. 2-10; June 13, 2002, pp. 2-4; March 15, 2002, pp. 2-4; and December 17, 2001, pp. 4-6.

3. On April 30, 2001, the Authority and the City submitted an NPC describing the revised plan to separate sewers to control CSO discharges to Alewife Brook. On June 15, 2001, the Secretary of Environmental Affairs issued a Certificate on the NPC, which required the Authority and the City to prepare responses to comments.
4. See Compliance and Progress Report for December 16, 2002, pp. 19-20.