

UNITED STATES DISTRICT COURT

for the

DISTRICT OF MASSACHUSETTS

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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.

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MWRA QUARTERLY COMPLIANCE AND

PROGRESS REPORT AS OF SEPTEMBER 16, 2002

The Massachusetts Water Resources Authority (the "Authority") submits the following quarterly compliance report for the period from June 13, 2002 to September 16, 2002, 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 July 2002 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 Storage Conduit for BOS 072 and BOS 073.

In accordance with Schedule Six, the Authority awarded the contract for design of the storage conduit for BOS 072 and BOS 073 and issued the Notice to Proceed with design. The design contract combines design and engineering services during construction for both the storage conduit for BOS 072 and BOS 073, which is located at Fort Point Channel in South Boston, and the storage conduit for BOS 019, which is adjacent to the Little Mystic Channel in Charlestown.

B. Progress Report.

1. Combined Sewer Overflow Program.

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

The Authority is continuing to make progress toward completing the first of two phases of its reassessment of combined sewer overflow ("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.¹ The scope of work for the Phase I efforts includes updating the baseline planning assumptions and collection system model, updating the baseline water quality conditions and receiving water model, evaluating siting throughout the study area, including the feasibility of Conley Terminal siting (at the direction of MEPA) and identifying a manageable number of CSO control alternatives for a detailed comparative evaluation in Phase II.

Since last reporting, the Authority has identified four CSO control options (each of which at a minimum would eliminate CSO discharges to the beaches in a typical year²) that appear most promising for further investigation and screening. Authority staff presented these four control options to its Board of Directors on June 26. Each of these options is described briefly below and is depicted in the attached figures and summarized in Table 1 in Exhibit "B." These control options represent a range of costs and levels of CSO control, have varying potential for the inclusion of separate stormwater control,³ and consider siting zones but do not yet identify specific sites within the zones.

Option 1 ♦ North Dorchester Bay Interceptor Relief and Reserved Channel Sewer Separation

This option would include providing relief of the South Branch of the South Boston Interceptor along North Dorchester Bay, and separating the combined sewer areas upstream of outfalls BOS 076 to BOS 080 along the Reserved Channel. (See Exhibit "B" - Figure 1). The interceptor relief project would involve construction of a relief pipe approximately five feet in diameter running parallel to the existing South Branch of the South Boston Interceptor. The relief pipe would start at the intersection of Farragut Road and East First Street, and run more or less parallel to Day Boulevard and Marine Road all the way to the Columbus Park Headworks. This project would also include optimizing the size of the dry weather flow connections between the interceptor and the CSO regulators. The project would eliminate CSO discharges in the typical year from outfalls BOS 081 to BOS 087 along the beaches (a one-year level of control), and would neither increase nor decrease existing stormwater discharges to the beaches. The CSO outfalls would remain active in storms greater than the one-year, 24-hour storm. Sewer separation along the Reserved Channel outfalls would involve constructing new storm drains and sewers in most of the streets with areas tributary to the Reserved Channel outfalls. Following the sewer separation, approximately two CSO activations would still occur in the typical year (approximately a six-month level of control) at Reserved Channel. Sewer separation would remove stormwater from the sewer system and redirect this stormwater to the Reserved Channel, thereby increasing the separate stormwater pollutant load to the Reserved Channel. No above-ground facilities would be required as part of this option. The planning-level estimated capital cost for this option is \$100 million.

Option 2 ♦ North Dorchester Bay Storage Conduit and Reserved Channel Sewer Separation (Option 2a soft-ground tunnel and Option 2b deep rock tunnel)

This option would involve constructing a storage conduit to capture CSO and separate stormwater from outfalls BOS 081 to BOS 087 along the beaches, and separating the combined sewer areas upstream of outfalls BOS076

to BOS 080 along the Reserved Channel. (See Exhibit "B" - Figure 2). The storage conduit would involve construction of either a 13-foot diameter soft-ground tunnel, or up to a 19-foot diameter deep rock tunnel depending on the targeted level of CSO and stormwater control. The tunnel would be constructed approximately along the route of Day Boulevard between outfalls BOS 087 and BOS 081. The storage conduit would have a 10-million gallons per day ("mgd") pump-out facility at the downstream end, and an odor control facility at the upstream end. Stored flows would be pumped back to the interceptor system for conveyance to Deer Island after a storm. When the storage capacity of the conduit is exceeded, excess flows would continue to discharge to North Dorchester Bay from the seven existing outfalls. Depending on the selected diameter, the conduit could provide between a one-year and five-year level of CSO control, with up to a one-year to five-year level of stormwater control. Sewer separation along the Reserved Channel outfalls would be the same as described for Option 1. The planning-level estimated cost range for this option is \$130 million to \$230 million, depending on the size of storage conduit selected and the location of the pump-out facility.

Option 3 Storage Conduit with Subsequent Sewer Separation for North Dorchester Bay and Sewer Separation for Reserved Channel

As with Option 2, this option would involve construction of a storage conduit to capture CSO and stormwater from outfalls BOS 081 to BOS 087 along the beaches, but would then be followed by sewer separation of the combined sewer areas upstream of outfalls BOS 081 to BOS 087, and separation of the combined sewer areas upstream of outfalls BOS 076 to BOS 080 along the Reserved Channel. (See Exhibit "B" - Figure 3). Similar to Option 2, the storage conduit would involve construction of either a 13-foot diameter soft-ground tunnel, or up to approximately a 19-foot diameter deep rock tunnel depending on the targeted level of CSO and stormwater control. The conduit would initially provide between a one-year and five-year level of CSO and stormwater control, depending on the diameter. Once the storage conduit was completed, sewer separation of the combined sewer areas upstream of outfalls BOS 081 to BOS 087 would be phased in over a number of years. Upon completion of the sewer separation, the storage conduit would provide between a one-year and 25-year level of CSO control and a six-month level of stormwater control, depending on the tunnel diameter. Sewer separation along the Reserved Channel outfalls would be the same as described for Option 1. The planning-level estimated cost range for this option is \$190 million to \$270 million, depending on the size of storage conduit selected and the location of the pump-out facility.

Option 4 CSO Relocation for North Dorchester Bay and CSO Consolidation with 600 MGD Pumping/Screening/Disinfection Facility for Reserved Channel (Previously-Recommended Plan)

This option would consist of a 13-foot diameter soft-ground tunnel along Day Boulevard and East First Street, leading to a 600 mgd pumping station that also provides screening and disinfection. (See Exhibit "B" - Figure 4). This is the only option that would permanently eliminate CSO discharges at outfalls BOS 081 to BOS 087 (along the beaches). This option could also control stormwater discharges to the beaches up to the five-year storm. Untreated discharges to Reserved Channel would be controlled up to the five-year storm, and the facility would discharge treated CSO in the two-year storm and greater. In addition to the 600 mgd facility, odor control facilities would be required at the upstream ends of the relocation and consolidation conduits. The planning-level estimated cost range for this option is \$220 million to \$330 million, depending on the location of the 600 mgd facility.

Critical to the comparative evaluation of the costs versus benefits of the four options is the collection and analysis of updated CSO and stormwater water quality information. Efforts to update the baseline water quality conditions are ongoing. The Authority intended to take additional wet weather samples over the past quarter to obtain sufficient data to update the receiving water model and assess the relative impacts of CSO and separate stormwater discharges on the water quality of the North Dorchester Bay. However, the Authority was unable to obtain the required number of samples because of the lack of heavy rainstorms. If the sampling program is not completed by the end of September, it is likely that the schedule for completing Phase I will be extended beyond December 2002. Based on the current schedule for Phase I, the Authority anticipates that it will be able to commence Phase II efforts in January 2003 and complete Phase II in Spring 2003.

During the past quarter, the Authority also held its fourth public meeting in South Boston on June 27 to present and discuss the four main options for CSO control. In addition, the Authority met with the United States Environmental Protection Agency ("EPA") and the Massachusetts Department of Environmental Protection ("DEP") on July 18 to provide them with an update on water quality sampling and to discuss the four options. At this meeting, the Authority also presented water quality data for Carson Beach, which is based on five years of beach monitoring data (1996-2000).

During this five year period, 1,005 samples were taken during the swimming season. Of these, 58 samples exceeded the bacteria limit for swimming. Approximately 22 of these high bacteria counts occurred during rain events that could have caused CSO activations. On average, therefore, Carson Beach was closed approximately four times per year after a CSO event. It is important to note that this data was gathered prior to the new outfall's coming on-line (September 2001) and prior to the Boston Water and Sewer Commission's ("BWSC") locating and removing illegal sanitary connections to the storm drains that discharge to Carson Beach, an ongoing effort. The data indicate that Carson Beach was one of the cleanest beaches in Boston Harbor and that it was well within EPA's guidelines and the Massachusetts Department of Public Health's ("MADPH") regulations for average (geometric mean) indicator bacteria levels, which are used to determine if a beach is safe for swimming.⁴ Carson Beach also met DEP's water quality criteria for swimmable waters.⁵ As described above, individual samples occasionally exceed MADPH's regulations for single sample limits causing the beach to be posted.

The Court may have noted recent press coverage on beach water quality and CSO control options in South Boston. The Authority welcomes public debate that contributes to the understanding of the state of the water quality in North Dorchester Bay in both dry and wet weather and public review of the cost and benefit associated with different levels of CSO control. To that end, the Authority submitted water quality data information and information on the four CSO control options referenced above to the *Boston Globe* in order to address the misperception that Carson Beach was "Dirty Water" as depicted in the *Boston Globe*'s editorial dated August 7. A letter to Ms. Beth Daley of the *Boston Globe* from Frederick A. Laskey, the Authority's Executive Director, includes some of this additional information and is attached as Exhibit "C." However, most of the information was not included in the September 4 *Boston Globe* follow up article. It is also important to note that, of the ten beach closings referenced in the September 4 article for this summer, only one may have been associated with a CSO activation. This fact raises important public policy questions regarding the feasibility of achieving the standard of fishable and swimmable water 100 percent of the time in an urban area. Copies of Ms. Daley's article, published on September 4, 2002 and the editorial published on August 7, 2002 are attached as Exhibit "D."

Over the next quarter, the Authority expects to complete the water quality update, which is needed to evaluate the performance and water quality benefits of each alternative, and to select specific alternatives from within the four options to carry forward into the Phase II evaluations. The Authority also expects to distribute its second newsletter next week outlining the status of the reassessment and to hold its fifth public meeting on September 26 to present and discuss siting considerations. The Authority is continuing to obtain data and perform necessary evaluations. No decisions on the level of CSO control, stormwater control or siting have been made. The Authority remains committed to performing a complete and thorough public reassessment of CSO control alternatives and will continue to provide updates to EPA, DEP and the public in an effort to reach consensus and move forward with CSO improvements in North Dorchester Bay.

(b) Cambridge Sewer Separation.

The Authority and the City of Cambridge (the "City") continue to make progress toward completing their response to issues and questions raised in public comments on the NPC.⁶ The Authority and the City conducted a technical workshop on June 27 to discuss the results of hydraulic model runs related to the potential for increased stormwater discharges to exacerbate existing flooding along the Alewife Brook and the impacts to the Alewife Reservation from the proposed stormwater wetland detention basin. Participants included the Cambridge and Arlington Conservation Commissions, DEP, and technical representatives from advocacy groups. The Authority and the City also prepared and distributed a memorandum on the status of the proposed CSO

project for Alewife Brook and their written response to comments and met with the Metropolitan District Commission ("MDC") to ensure that the design of the proposed stormwater wetland detention basin for the project is consistent with the ecological restoration objectives of MDC's Alewife Reservation Master Plan. In addition, the City completed construction of Contract 2B (Fresh Pond Parkway sewer separation) in July.

The Authority and the City plan to hold additional public meetings this fall to present and discuss preliminary responses to the NPC comments, in order to allow opportunity for public input prior to submitting their formal response to comments. Currently, the Authority plans to submit this response to comments in December. The Authority and the City also plan to continue to meet with MDC about the proposed stormwater wetland detention basin.

(c) Interceptor Relief for BOS 003-014.

The Authority continues to make design progress toward meeting the March 2003 milestone for commencement of construction of Interceptor Relief for BOS 003-014 project (East Boston Branch Sewer Relief), although it has experienced delays in commencing a reevaluation of the costs and benefits of engineering options for completing the project.⁷ As the Authority noted in its last quarterly report, it expects that the reevaluation work will focus on the costs and benefits of various levels of CSO control provided by combinations of hydraulic relief and sewer separation. The Authority has not yet commenced the reevaluation work or established a detailed schedule, and now expects that more time will be necessary to complete the study than previously reported. At this time, the Authority anticipates commencing the reevaluation work before the end of this year and completing the study early next year.

The contract with which the Authority proposes to meet the milestone for commencement of construction is unaffected by the proposed reevaluation. It primarily involves rehabilitating (i.e. relining) main sections of the Authority's interceptors in East Boston to ensure structural and operational integrity for the long-term and to improve hydraulic conveyance capacity. The work of this contract alone, estimated to cost approximately six million dollars, is expected to lower CSO discharges at many of the upstream outfalls. The Authority received the 100-percent design submission for this contract on June 28 and expects to advertise the contract for bids next month.

(d) Charles River Variance.

As anticipated, the Authority submitted a letter to DEP on June 28 requesting that the Charles River Variance be extended for one year, from October 1, 2002 to October 1, 2003.⁸ On August 1, in response to this request, DEP issued a Tentative Determination to extend the Charles River Variance by one year. DEP noticed its Tentative Determination in the August 24 MEPA *Environmental Monitor* with a request for public comments to be submitted to DEP by September 20, 2002.

(e) Dorchester Brook Conduit In-line Storage.

In August, one month later than expected in last quarter's report, BWSC completed preparation of the construction contract documents for the system optimization plans ("SOPs") recommended by the Authority to reduce CSO discharges to the Dorchester Brook Conduit.⁹ BWSC is now reviewing the documents and expects to pursue construction soon, with contracted services. BWSC estimates the construction duration to be approximately two months.

The Authority still anticipates that BWSC will complete all of the work related to raising the weir and installing the new tide gate this fall. Once this work is completed, BWSC will have implemented all of the improvements recommended by the Authority to maximize the wet weather performance of the sewer system and lower CSO discharges to the Dorchester Brook Conduit. To verify the predicted CSO discharge levels, the Authority continues to plan to include flow metering at the most active regulator tributary to the Dorchester Brook Conduit in its temporary flow metering program in 2003.

(f) CSO Quarterly Progress Report.

Pursuant to Schedule Six, the Authority submits as Exhibit "E" its Quarterly CSO Progress Report (the "Report"). The Report summarizes progress made in the design and construction of the CSO projects during the past quarter and identifies issues that have affected or may affect compliance with Schedule Six. The Report also notes the status of certain planning and regulatory efforts.

By its attorneys,

Dated: September 16, 2002

Notes:

1. See Compliance and Progress Reports for June 13, 2002, pp. 2-4; March 15, 2002, pp. 2-4; and December 17, 2001, pp. 4-6.
2. A "typical year" represents one full year of actual rainfall events and is based on the average of data from forty years (1949-1987 plus 1992) of rainfall records.
3. The Authority is not required, by statute or regulation, to control separate stormwater discharges it does not own. In the CSO plan area, publicly owned stormwater systems are typically the separate responsibility of the community. However, during preparation of the 1997 Final CSO Facilities Plan and Environmental Impact Report ("Final FP/EIR"), the Authority agreed to evaluate the potential for adding separate stormwater control along the South Boston beaches to the plan for North Dorchester Bay CSO control in response to public comments. At that time, the Authority determined that adding stormwater control to the Final FP/EIR for tunnel storage and relocation of CSO discharges from North Dorchester Bay could be done at relatively small additional cost, and therefore the Authority voluntarily included a level of separate stormwater control in its recommended plan. To be able to compare CSO options in the ongoing reassessment to the level of control and water quality improvement provided by the Final FP/EIR, the Authority is evaluating the potential for, as well as the cost and benefit of, separate stormwater control along with CSO control for each option.
4. See USEPA, Office of Water, 1986. Ambient Water Quality for Bacteria -- 1986. Washington, D.C.; Office of Water. EPA440/5-84-002. See also 105 C.M.R. 445.
5. See 314 C.M.R. 4.05.
6. 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 a response to comments document. See September 17, 2001 Compliance and Progress Report, Exhibit "B", pp. 7-8.
7. As reported in its April 26, 2002 Special Report of the MWRA Concerning Construction of Interceptor Relief for BOS 003-014, the Authority will not be able to meet the milestone for the completion of construction of this project by September 2005 in accordance with Schedule Six because of the need to conduct the reevaluation.
8. See June 13, 2002 Compliance and Progress Report, pp. 9-11.
9. On July 31, 2001, the Authority filed a motion to amend Schedule Six by deleting the milestones relating to design and construction of the Dorchester Brook Conduit in-line storage project, and the Court allowed the motion on August 8, 2001. In that motion, the Authority noted that it could reduce the annual activation frequency and volume of CSO discharges to only three activations per year (the Final FP/EIR predicted four per year) by implementing a System Optimization Project ("SOP") raising the elevation of a weir at CSO regulator RE-070/10-5. BWSC and the Authority have also pursued the installation of a new tide gate and pipe cleaning to further improve hydraulic conditions.