

STAFF SUMMARY

TO: Board of Directors
FROM: Frederick A. Laskey, Executive Director
DATE: March 10, 2004
SUBJECT: Supplemental Facilities Plan and Environmental Impact Report on the Long-Term CSO Control Plan for North Dorchester Bay and the Reserved Channel

COMMITTEE: Wastewater Policy & Oversight

 INFORMATION

 X VOTE

Ralph Wallace, Director, CSO Program/Energy
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Preparer/Title

Michael J. Hornbrook
Chief Operating Officer

RECOMMENDATION:

To authorize staff to submit a Supplemental Facilities Plan and Environmental Impact Report (SFP/EIR) on the long-term CSO control plan for North Dorchester Bay and the Reserved Channel to MEPA and the court parties.

The SFP/EIR will recommend a 17-foot diameter storage tunnel and ancillary facilities to effectively eliminate CSO discharges to North Dorchester Bay and collect separate stormwater in up to a one-year storm event. It will recommend sewer separation to significantly reduce CSO discharges to Reserved Channel. Finally, it will recommend construction of a new storm drain to redirect certain separate stormwater discharges to South Dorchester Bay (including separate stormwater generated by the ongoing South Dorchester sewer separation) to achieve a higher level of stormwater control along the beaches of North Dorchester Bay. The estimated cost of the recommended plan, exclusive of site acquisition costs, is \$257 million in 2004 dollars.

DISCUSSION:

Background

In July 1997, MWRA filed a CSO facilities plan and environmental impact report that included projects to eliminate CSO discharges to North Dorchester Bay and significantly reduce CSO discharges to the Reserved Channel. This project was part of the overall Long Term CSO Control Plan that MWRA was ordered to implement as part of the Federal Court Schedule in the Boston Harbor Case.

After completing extensive design work, a notice of project change (NPC) was filed in June 1999 that outlined a detailed plan to achieve these objectives. At that time, the control plan recommended construction of 13-foot diameter foot soft ground tunnels parallel to North Dorchester Bay and Reserved Channel both connected to a 600-mgd pump station. The project was designed to completely eliminate CSO discharges to North Dorchester Bay, but also

accommodate stormwater discharges along North Dorchester Bay in up to a five-year storm. Stormwater control was included in this single CSO project because the incremental cost of handling separate stormwater was comparatively small and there was a water quality benefit to a sensitive receiving area (public beach and shellfishing area).

The plan sited the large pump station at “Site J” on the Reserved Channel and this generated significant opposition from the local community. Elected officials representing South Boston informed MWRA’s Board of Directors at its December 15, 1999 meeting that the project would be blocked by their unwillingness to support needed Article 97 legislation.

After extensive discussions with the community, elected officials, regulatory agencies and the other court parties, MWRA concluded that the recommended plan could not be implemented. MWRA then prepared and filed a second NPC in April 2001, recommending a reassessment of CSO control options for North Dorchester Bay and Reserved Channel. The MEPA Certificate for this NPC was issued in June 2001. The Certificate required preparation of an SFP/EIR that would evaluate other CSO control alternatives and recommend a new plan. The Certificate required that “any revised proposal for CSO control should be consistent with the nature and extent of water quality improvements” of the previously approved plan. On August 15, 2001, the Board of Directors authorized staff to commence the reassessment.

The reassessment identified and evaluated a full range of alternatives that might lead to a plan that could gain public and regulatory acceptance. More than 160 alternatives to control CSO discharges, ranging from a 1-year level of control to CSO elimination in North Dorchester Bay, were identified and reviewed. The Board has been briefed on the reassessment, most recently on the two most promising control alternatives, interceptor relief and a soft-ground storage tunnel. The result of the reassessment is a recommendation to construct a 17-foot diameter tunnel that will provide a 25-year level of CSO control for North Dorchester Bay (the functional equivalent of elimination) without the need to site, build and operate a large permanent pumping station.

Recommended Plan

Plan Summary

- 17-foot diameter 2.1 mile storage tunnel mined beneath Day Boulevard with a pump station at Conley Terminal and odor control facility behind the State Police building.
- Operable gates at outfalls BOS081 through BOS086 to allow the tunnel to collect separate stormwater in most storms.
- A 12x12-foot storm drain along Morrissey Boulevard to divert stormwater from BOS087 to Patten’s Cove in South Dorchester Bay.
- Relocation of separate stormwater from Pleasure Bay to Reserved Channel (BOS080).
- Sewer separation of a 300-acre area north of East Fourth Street that is tributary to the four Reserved Channel outfalls.

Costs (2004 dollars without site acquisition costs)

▪ Storage tunnel	\$186 million
▪ Stormwater gates	\$2
▪ Morrissey Blvd. Storm drain	\$18
▪ Pleasure Bay stormwater diversion	\$3
▪ Reserved Channel sewer separation	<u>\$48</u>
Total	\$257 million

Impacts

- North Dorchester Bay – 25-year level of CSO control and 5-year level of separate stormwater control.
- Pleasure Bay – Eliminate stormwater discharges.
- Reserved Channel – Reduce CSO discharges from 37 to 3 in a typical year.
- South Dorchester Bay – Roughly 15% increase in stormwater discharges in a typical year compared to current volumes through existing stormwater outfall, BOS088, BOS089 and BOS090.

Construction

About four acres would be required on a temporary basis at Conley Terminal to accommodate the mining shaft and support tunnel construction (vertical hoist, ventilation, power, tunnel soil removal, dewatering, and handling of the tunnel lining segments). Following completion of the tunnel, a 10-mgd pump station would be constructed on the site of the mining shaft. A discharge force main would also be installed within the streets of South Boston to connect the pump station to the existing interceptor system. A receiving shaft to remove the TBM would be necessary at the other end of the tunnel, near the State Police Station. After removal of the TBM, construction of the odor control facility would proceed. At seven locations along the alignment, drop shafts and diversion structures would be constructed to connect the existing outfalls to the new tunnel.

The estimated duration of construction is approximately four years. With the exception of the tunnel drive, construction would occur during normal working hours. During mining and lining of the tunnel, which is expected to take 16 to 20 months, operations at the mining shaft and associated truck traffic would occur 24 hours per day. When construction is completed, the 10-mgd pump station would occupy about a three-quarter acre site at Conley Terminal and the odor control facility would occupy about a half-acre site near the State Police Station.

CSO control for the Reserved Channel would be provided through sewer separation of a 300-acre area of South Boston roughly bounded by Reserved Channel and East Broadway. It is

anticipated that this work would be funded by MWRA and managed by BWSC and would be phased over a multi-year period.

The current cost estimate *does not* include the cost of acquiring the necessary construction and permanent easements at Massport's Conley Terminal or DCR lands along the tunnel alignment and at the State Police Station. It should also be recognized that the tunnel would be constructed in soft, unconsolidated ground. The tunnel will be mined through a range of soil types. As a result of the increased tunnel diameter, at its shallow end, there will only be one diameter of cover over the crown of the tunnel. While the cost estimate has been adjusted to reflect additional grouting along portions of the tunnel's alignment, the reduced cover increases the construction risk associated with the recommended tunnel versus a 13-foot diameter tunnel. Based on current estimated construction schedules and an annual inflation rate of 2.5 percent, the estimated cost of the recommended plan escalated to the mid-point of construction is \$285 million.

Stormwater Control

Throughout the reassessment, MWRA has stressed its obligation to develop and implement a plan that provides a high level of CSO control for the beaches. As the reassessment progressed, it became clear that to reach consensus with the regulatory agencies and court parties and satisfy the commitments within the existing court order, the new recommended plan would have to provide some level of stormwater control.

Reasons for the original plan calling for the accommodation of separate stormwater control (i.e. low incremental cost and water quality benefits) have not changed. Analyses of additional water quality data collected during the reassessment support earlier assumptions that separate stormwater and dry weather conditions in the CSO outfalls contribute to beach closings even more frequently than CSO discharges. In addition, EPA, the Conservation Law Foundation and the Federal Court have strongly urged MWRA to meet the water quality benefits of the original plan, including benefits derived from stormwater management. In the most recent compliance order, dated February 20, 2004, the Court stated the following:

I share the concerns expressed by the United States and the Conservation Law Foundation with regard to the Authority's lack of attention to the issue of stormwater discharge, which is an issue that should be addressed in addition to CSO control.

Finally, staff believe that public acceptance will hinge on a plan that extends use of the large storage volume provided by the tunnel to the many storm events that do not cause CSO discharges but clearly contribute to beach closings.

The storage tunnel alternative has the capability to accept stormwater flows, but at the risk of reducing or otherwise compromising CSO control. With the installation of control gates that could remain open during smaller storms to accept stormwater, but be closed when larger storm events are forecast to dedicate the tunnel to CSO control, the 17-foot diameter tunnel could accommodate all CSO and separate stormwater flows up to a one-year storm event while still providing a 25-year level of dedicated CSO control. This approach is part of the recommended

plan that will be presented in the SFP/EIR. Under this plan, in a typical year there would be no CSO discharges or stormwater discharge to the beaches, compared with 21 CSO discharges and about 108 stormwater discharges now.

Recently, the court parties have asked MWRA to explore implementing a project, previously proposed by BWSC, to redirect separate stormwater from the BOS087 tributary area through an enlarged stormwater drain along Morrissey Boulevard and discharge it to South Dorchester Bay at an existing stormwater outfall near the entrance to the University of Massachusetts campus. Modeling indicates that outfall BOS087 accounts for about half of the separate stormwater entering North Dorchester Bay. By redirecting this stormwater, the 17-foot tunnel may be capable of controlling separate stormwater discharges to North Dorchester Bay in up to a five-year storm event, as provided in the previously approved plan. As part of the revised recommended plan MWRA will agree to fund this project. It is anticipated that this work would be managed by BWSC. MWRA would also evaluate the performance and operation of the new stormwater outfall in an effort to reduce the volume of stormwater discharges from this outfall to South Dorchester Bay and agree jointly to implement any feasible optimization strategies with BWSC.

Board members and the Advisory Board have expressed concern that by managing separate stormwater as part of the revised recommended plan for North Dorchester Bay, MWRA is creating a precedent based on which MWRA could be required to assume the financial responsibility for managing stormwater in CSO control plans for other receiving waters. The context for MWRA's proposal to include the costs of certain stormwater management facilities in the revised recommended plan for CSO control for North Dorchester Bay is MWRA's request for relief from that portion of the current Federal Court Schedule which requires it to construct the original plan for North Dorchester Bay, namely the plan which included construction of a 600 MGD pump station on Site J. Approval of this request for relief is governed not only by the requirements of the Clean Water Act, but is subject to the court's discretion to fashion an appropriate remedy based on the specific factors in the case before it, including the views of other parties to the litigation. Parties to litigation settle claims for a variety of reasons. Consequently, agreements reached in settlement of litigation disputes are not considered as legal precedent in future actions. Recent discussions with the EPA Region I administrator and senior staff have confirmed that the agreement to handle separate stormwater in North Dorchester Bay in the original plan, as well as any agreement to handle separate stormwater as part of the revised plan, was made in the context of a settlement agreement reached under the Boston Harbor case litigation. It has not changed MWRA's responsibilities as defined by the Clean Water Act or National CSO policies or created any obligations to manage separate stormwater as part of CSO control plans for other areas. MWRA's in-house and outside counsel have reviewed this issue and concur with this conclusion.

Remaining Challenges and Next Steps

The reassessment's evaluation of a full range of control alternatives, in parallel with intensive discussions with interested parties, has yielded an alternative for CSO control for the South Boston beaches and Reserved Channel that is consistent with MWRA's obligations under the Clean Water Act and the Federal Court Order, provides substantial environmental benefit for the

region and can garner public acceptance. Staff believe that the 17-foot storage tunnel is the most cost-effective option for attaining the goals of eliminating CSO discharges to the beaches and minimizing impacts to the community.

However, staff recognize that any recommendation requires a fine balance among competing interests. Obtaining all necessary approvals and agreements to construct the project remains a challenge. Concurrence from EPA and DEP that a 25-year level of CSO control is the functional equivalent of elimination is necessary. Private and public property owners and abutters in those areas where facilities are proposed must be prepared to accommodate the necessary construction impacts and permanent facilities. Not insignificantly, negotiations of site acquisition costs must be finalized with Massport. The community and its elected officials must be prepared to support the project, including the necessary Article 97 legislation.

A public meeting has been scheduled for March 8, 2004 to present and discuss the new recommended plan, prior to submitting the SFP/EIR to MEPA. At this time, staff expect there will be a 60-day comment period to provide an opportunity for thorough public and agency review. Staff will continue coordinating with regulatory agencies and other interested parties and will hold another public meeting in May during the MEPA comment period. Issues related to long-term operation of the facilities, including stormwater management strategies, will require coordination among various responsible parties and regulatory agencies.

In parallel with MEPA's environmental review process, EPA and DEP will conduct their regulatory review of the project's compliance with requirements of the Clean Water Act and national and state CSO policies. MWRA's recommended plan offers the functional equivalent of CSO elimination to the beaches and does not seek a change to water quality standards for North Dorchester Bay. With EPA and DEP concurrence on this matter, a Use Attainability Analysis would not be necessary.

Once the MEPA and regulatory review processes are successfully completed, MWRA will then renegotiate design and construction milestones with court parties for incorporation into Schedule Six of the Federal Court Order replacing the 1997 plan milestones.

BUDGET/FISCAL IMPACT:

The FY04-06 CIP includes \$225.1 million for design and construction of the previous North Dorchester Bay and Reserved Channel CSO Conduit and Reserved Channel CSO Facility of which \$211.5 million remained unspent at the start of the FY04. The proposed FY05-07 CIP added an additional \$373,000 for design amendments authorized by the Board in June and December 2003. The cost of implementing the recommended plan is anticipated to require a further increase of at least \$46 million to the CIP, plus site acquisition costs. As the estimated cost of the plan is refined, staff will update the Board and reflect the updated cost and cashflow in the final FY05-06 CIP budget.