

Massachusetts Water Resources Authority



Combined Sewer Overflow Control Plan



Annual Progress Report 2006

March 2007

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1. **Introduction**

The Massachusetts Water Resources Authority (MWRA) files this CSO Annual Report for 2006 in compliance with the Federal District Court Order in the Boston Harbor Case. Annual and quarterly CSO reports are required by the Court and describe the progress of work to complete MWRA's long-term CSO control plan relative to milestones in the Court-ordered schedule. This annual report reviews key accomplishments, compliance milestones, regulatory and court actions, and design and construction progress in 2006 and in the quarterly period from December 16, 2006 to March 15, 2007. Like previous annual reports, it also discusses issues that may affect MWRA's ability to complete the CSO projects on schedule.

MWRA's long-term CSO control plan was recommended in the Final CSO Facilities Plan and Environmental Impact Report (the "1997 Facilities Plan/EIR"), which MWRA filed with federal and state regulatory agencies in August 1997. Together with plan modifications MWRA recommended in subsequent Notices of Project Change, Supplemental Environmental Impact Reports and other regulatory filings, the plan comprises 35 wastewater system improvement projects to bring CSO discharges at 84 outfalls in the metropolitan Boston area into compliance with the Federal Clean Water Act and State Water Quality Standards.

The projects and their locations are shown in Figure 1. Figure 2 summarizes the scope, schedule and predicted benefits of the overall plan. Design and construction milestones for each of the 35 projects are mandated by the Federal District Court Order in the Boston Harbor Case (U.S. v. M.D.C, et al., No. 85-0489-MA) and are set forth in Schedule Seven.

The report focuses attention in two areas that characterize most of the progress made in 2006: 1) long-term regulatory approval and Federal Court acceptance of MWRA's CSO control plan, including project changes and schedule changes recommended by MWRA since the final plan was released in 1997, and 2) a high level of design and construction activity to continue implementing the long-term plan.

2. **Key CSO Accomplishments in 2006**

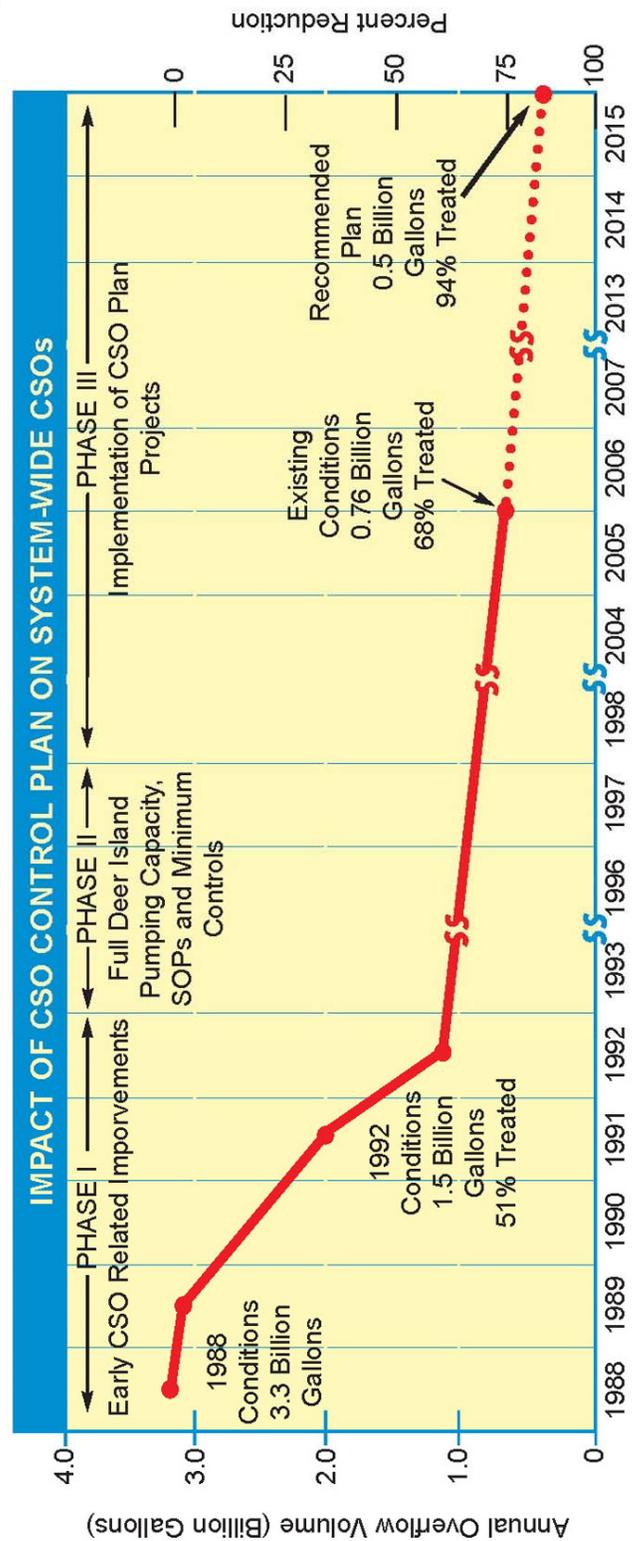
Regulatory and Compliance Decisions

In March 2006, MWRA reached agreement with the U.S. Environmental Protection Agency ("EPA"), the Massachusetts Department of Environmental Protection ("DEP") and the U.S. Department of Justice ("DOJ") on the scope and schedule for CSO projects that MWRA recommended modifying in the CSO plan or adding to the plan to gain long-term federal and state approvals. The agreement was filed with the Court as part of a joint motion to amend the court schedule.

In April 2006, the Court allowed the joint motion and issued an Order with a new schedule. Under the Order, MWRA has until the year 2020 to complete the remaining CSO work and subsequent monitoring to verify that the long-term CSO control goals are achieved. In addition, the United States and MWRA agreed to withdraw the February 27, 1987 Stipulation of the United States and the Massachusetts Water Resources Authority on Responsibility and Legal Liability for Combined Sewer Overflows and replace it with a Second Stipulation that requires MWRA to implement the CSO requirements set forth in the court schedule and to meet the levels of control described in MWRA's long-term CSO control plan.

In July, 2006, Judge Stearns accepted revisions to Schedule Six incorporating a new Schedule Seven. The revisions include modified or additional milestones for projects in the Alewife Brook, Charles River and East Boston CSO plans.

Figure 2. CSO Control Recommended Plan Benefits



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CSO Project Implementation and Schedule Compliance

In 2006, MWRA continued a high level of design and construction activity to meet its Federal Court ordered obligations, as defined by Schedule Seven. MWRA spent \$45.3 million implementing the long-term CSO control plan in 2006, of which \$44.0 million was for construction related costs, including construction contracts, engineering services during construction, acquisition of land and easements, and construction permit fees.

Planning and design:	\$ 1.3 million
Construction contracts:	38.1 million
Construction related services:	4.2 million
<u>Land/easement/permits:</u>	<u>1.7 million</u>
Total CSO capital spending in CY06:	\$ 45.3 million

- On August 31, 2006, MWRA issued the Notice to Proceed with the \$145.7 million construction contract for the North Dorchester Bay storage tunnel, in compliance with Schedule Seven.
- MWRA completed the \$3.2 million construction contract for Pleasure Bay Storm Drain Improvements in March 2006, in compliance with Schedule Seven. The work eliminated stormwater discharges to Pleasure Bay beach (no CSO discharges existed), thereby making Pleasure Bay one of the cleanest urban beaches in the nation. This was also the first contract implementing MWRA's revised CSO plan for the South Boston beaches.
- Boston Water and Sewer Commission (BWSC) completed construction of the \$45.1 million Stony Brook Sewer Separation project in September 2006, in compliance with Schedule Seven, greatly reducing CSO discharges to the Stony Brook Conduit which in turn discharges to the Charles River Basin.
- In December 2006, BWSC issued the Notice to Proceed with the first of two planned construction contracts for the Morrissey Boulevard storm drain project, in compliance with Schedule Seven. The first contract involves construction of the diversion chamber that will allow stormwater flows now discharging to the South Boston beaches at outfall BOS087 to be diverted to Savin Hill Cove in storms greater than the 1-year design storm. BWSC is still in the permitting phase for the majority of the Morrissey Boulevard storm drain project in the second construction contract.
- MWRA continued to make progress with the \$46.1 million construction contract for the Union Park detention/treatment facility, and the work is now 98% complete. On December 31, MWRA brought the new treatment facility into partial beneficial use by activating the fine screens and detention tanks to store up to 1.5 million gallons of CSO entering BWSC's Union Park Pumping Station and thereby lower the frequency and volume of discharges from the pumping station to Fort Point Channel. Flows stored in the six detention tanks are pumped back to the interceptor after each storm for treatment at Deer Island. MWRA expects to complete construction and commence full operation of the detention/treatment facility by April 2007, 19 months later than the September 2005 milestone in Schedule Seven due to numerous construction delays.
- MWRA continued to make progress with the \$10.9 million construction contract for the BOS019 CSO storage conduit, and the work is now 96% complete. The storage conduit will greatly reduce the frequency and volume of CSO discharges to the Little Mystic Channel in Charlestown at outfall BOS019. MWRA expects to complete construction in March 2007.

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- BWSC continued to make progress with construction of the South Dorchester Bay sewer separation project. Total project cost is \$118.2 million. All of the major construction contracts are substantially complete, and BWSC has installed more than 135,000 feet of new storm drain in Dorchester. BWSC has commenced flow monitoring and other system performance evaluations to determine whether the CSO regulators can be closed.
- BWSC continued to make progress with construction of the Fort Point Channel sewer separation project, now 98% complete. BWSC expects to complete the work in March 2007, in compliance with Schedule Seven. The total project cost is \$7.7 million.
- MWRA issued the Notice to Proceed with the \$3.4 million contract to complete design of the East Boston Branch Sewer Relief project (outfalls BOS 003-014), in June, 2006, in compliance with Schedule Seven. The total project cost, including an earlier design contract and a construction contract MWRA completed in 2004, is \$73.5 million.
- MWRA issued the Notice to Proceed with the \$1.3 million design contract for the Brookline Connection, Cottage Farm overflow chamber interconnection and Cottage Farm gate control in September 2006, in compliance with Schedule Seven. The total project cost is \$4.3 million.
- BWSC issued the Notice to Proceed with the design contract for the Reserved Channel sewer separation project in July 2006, in compliance with Schedule Seven. The total project cost is \$59.2 million.
- BWSC issued the Notice to Proceed with design of the Bulfinch Triangle sewer separation project in August 2006, in compliance with Schedule Seven. The total project cost is \$4.4 million.
- The Town of Brookline issued the Notice to Proceed with the design contract for the Brookline sewer separation project in November 2006, in compliance with Schedule Seven. The total project cost is \$9.0 million.
- In March 2006, in accordance with Schedule Seven, MWRA began a study intended to optimize operation of the Prison Point CSO facility and related structures to minimize treated discharges from the facility to the Inner Harbor. MWRA plans to submit a report on its findings and recommendations and begin to implement recommended optimization measures by March 31, 2007, in compliance with Schedule Seven.
- Cambridge continued to make progress with design of floatables controls for its CSO outfalls on the Charles River and plans to complete construction of the controls by December 2007, in compliance with Schedule Seven. Construction of these controls will complete the region-wide floatables control recommendations that are independent of other CSO control projects. The total cost of Cambridge floatables control, for both the Charles River and Alewife Brook, is \$2.9 million.
- Cambridge also continued its efforts to respond to the citizens' appeal of the Superseding Order of Conditions that was issued by DEP pursuant to the Wetlands Protection Act for the wetland basin and stormwater outfall associated with the Alewife Brook CAM004 sewer separation project. While partial decisions were issued by the Administrative Law judge, resolution of the appeal was not realized in 2006. The on going appeal process has so far delayed implementation of the Alewife Brook CSO control projects by one year beyond the related milestones in Schedule Seven.

3. Long-term CSO Control Plan

In 1987, through a Stipulation entered in the Boston Harbor Case (U.S. v. M.D.C., et al., No. 85-0489 MA), MWRA accepted responsibility for developing a control plan to address CSO discharges from all CSOs hydraulically connected to the MWRA sewer system, including outfalls owned by its member communities. Under a Court-ordered schedule, MWRA developed a CSO conceptual control plan, recommending more than 25 site-specific CSO projects located in Boston, Cambridge, Somerville and Chelsea. The CSO Conceptual Control Plan was later refined in the July 1997 Final CSO Facilities Plan/Environmental Impact Report. The recommended plan included the following major, phased components:

- Through extensive inspections, system monitoring and modeling, MWRA prepared a detailed, field-calibrated assessment of its planned collection and treatment system performance as a baseline condition upon which CSO control alternatives were then evaluated. The performance assessment incorporated major capital investments in the sewer system already underway or planned by MWRA, including upgrades to the transport system, pumping stations, headworks and Deer Island treatment plant. Together with MWRA's and the CSO communities¹ efforts in the late 1980s and the 1990s to operate and maintain their respective systems more efficiently, these improvements were shown to effectively maximize the system's capacity to control wet weather flows and markedly reduce CSO discharges system-wide. In the period 1988 through 1992, total annual CSO discharge predicted for a typical rain year dropped from 3.3 billion gallons to 1.5 billion gallons, with approximately 51% of the remaining discharge treated at five MWRA CSO screening and disinfection facilities. The Charles River especially benefited from these improvements.
- In 1993-94, MWRA presented a System Optimization Plan ("SOP"), which recommended approximately 160 low cost, easily implemented system modifications to maximize wet weather storage and conveyance. MWRA predicted that the SOP projects would further reduce system-wide CSO discharge by about 20 percent. The SOP projects were completed by MWRA and CSO communities by 1997.
- To meet EPA's and DEP's long-term control plan policies, MWRA recommended a large set of projects covering a range of control technologies. The projects target site-specific CSO control goals based on the CSO impacts and designated uses in each of the affected receiving water segments.

In 1996, design and construction milestones for the 25 projects in the Final CSO Plan were added to the Federal Court Schedule, requiring implementation of the projects from 1996 to 2008. MWRA is directly responsible for implementation of many of the projects and has negotiated agreements with each of the four CSO communities for implementation of certain projects affecting the community systems. The facilities plan evaluated and selected abatement alternatives for each CSO and was conducted in accordance with EPA's National CSO Control Policy. For those CSOs which MWRA did not believe could be eliminated, the plan included information to support a Use Attainability Analysis (UAA) pursuant to 40 CFR Section 131.10(g). DEP submitted its final administrative determinations, including a UAA, to EPA for approval on December 31, 1997.

On February 27, 1998, EPA approved the state's changes to water quality standards, including variances that were issued in lieu of long-term water quality standards determinations for remaining CSO discharges to the Charles River and the Alewife Brook/Upper Mystic River. For receiving waters which remained Class SB (Constitution Beach, Neponset River, and North and South Dorchester Bays), the water quality standard is

¹ Boston (Boston Water and Sewer Commission), Cambridge, Chelsea and Somerville.

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achieved when CSO discharges are eliminated. For receiving waters designated SB(cso), (Inner Harbor, Fort Point Channel, Reserved Channel and Mystic River/Chelsea Creek Confluence), the water quality standard is achieved when MWRA completes the CSO abatement facilities in the approved facilities plan and achieves the performance levels (i.e. annual discharge goals) described in the plan.

In March 2006, MWRA reached agreement with EPA and DEP on the scope and schedule for additional CSO projects, which was filed with the Court as part of a joint motion to amend the Court Schedule. In April 2006, the Court allowed the joint motion and issued an Order with a schedule. As a result, MWRA's long-term control plan now includes 35 CSO control projects. Under the Order, MWRA has until 2020 to complete the remaining CSO work and subsequent monitoring which will be used to verify that the long-term CSO control goals are achieved.

In addition, the United States and the Authority agreed to withdraw the February 27, 1987 Stipulation of the United States and the Massachusetts Water Resources Authority on Responsibility and Legal Liability for Combined Sewer Overflows and replace it with a Second Stipulation that requires the Authority to implement the CSO requirements set forth in the Court Schedule and to meet the levels of control described in the Authority's long-term CSO control plan. The documents that comprise MWRA's long-term CSO control Plan are identified in the March 15, 2006 Second Stipulation of the United States and the Massachusetts Water Resources Authority on Responsibility and Legal Liability For Combined Sewer Overflows.

Under the approved plan, MWRA will implement its revised recommended plan for Alewife Brook/Upper Mystic River and its original, affirmed plan for East Boston outfalls. MWRA will also undertake additional work to further reduce CSO discharges to the Charles River from its Cottage Farm CSO facility, which had been the subject of discussions between EPA and MWRA and related investigations by MWRA since MWRA first issued its long-term control plan in 1997. The estimated cost of this additional Charles River work is approximately \$20 million, and it is expected to reduce CSO discharges from Cottage Farm to 2 activations and 6.3 million gallons in a typical rain year, from the previous goal of 6 activations and 23.6 million gallons. The scope, milestones and performance goals of other CSO projects remain unchanged.

The Federal Court schedule contained three unmet milestones related to completion of the CSO control plans for Alewife Brook/Upper Mystic River, East Boston, and region-wide floatables control and outfall closings. The accepted joint motion and the schedule it created (Schedule Seven) replaces these with new milestones and adds milestones for the revised Charles River CSO control plan. The revised milestones extend the completion date for the Alewife Brook/Upper Mystic River CSO control plan from January 2000 to January 2013 and the completion date for the East Boston CSO control plan from September 2005 to June 2010. The recommended CSO control plan for the Charles River would be completed in July 2013.

In exchange for agreeing to implement its revised long-term control plan, MWRA will be issued a series of five (5), three-year water quality variances for the Charles River and Alewife Brook/Upper Mystic River through 2020. As they relate to MWRA, the terms and conditions of the variances will be limited to the requirements of the Court Order (i.e. that MWRA's responsibility is to implement the long-term control plan contained in Schedule Seven).

This comprehensive agreement allows MWRA to continue to implement a CSO control plan that will remain at the forefront of CSO control nationally, dramatically improve water quality, and provide more certainty in managing its capital program and rate increases for a 15-year period, through 2020. The approved long-term control plan, by receiving water segment, is presented in Table 1.

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Table 1: Long-term CSO Control Plan by Receiving Water

Receiving Water	CSO Discharge Goals (typical rainfall year)		Projects	Capital Cost* (\$ million)
	Activations	Volume (million gallons)		
Alewife Brook/Upper Mystic River	7 untreated and 3 treated @ Somerville Marginal	7.3 3.5	<ul style="list-style-type: none"> • Cambridge/Alewife Sewer Separation • MWR003 Gate and Rindge Siphon Relief • Interceptor Connection Upgrades • Somerville Baffle Manhole Separation 	55.9
Mystic River/Chelsea Creek Confluence	1 untreated and 39 treated @ Somerville Marginal	0.6 60.6	<ul style="list-style-type: none"> • Somerville Baffle Manhole Separation • Hydraulic Relief at BOS017 • Chelsea Trunk Sewer Replacement 	8.7
Charles River (including Stony Brook and Back Bay Fens)	2 untreated and 2 treated @ Cottage Farm	6.8 6.3	<ul style="list-style-type: none"> • Cottage Farm Facility Upgrade • Stony Brook Sewer Separation • Hydraulic Relief at CAM005 • Cottage Farm Brookline Connection and Inflow Controls • Charles River Interceptor Gate Controls • Brookline Sewer Separation • Bulfinch Sewer Separation • MWRA Outfall Closings and Floatables Control 	73.3
Inner Harbor (including Chelsea Creek)	6 untreated and 30 treated @ Prison Point	9.6 335.0	<ul style="list-style-type: none"> • Prison Point Facility Upgrade • Chelsea Trunk Sewer Replacement • Chelsea Branch Sewer Relief • CHE008 Outfall Repairs • BOS019 Storage Conduit • E. Boston Branch Sewer Relief 	119.5
Fort Point Channel	3 untreated and 17 treated @ Union Park	2.5 71.4	<ul style="list-style-type: none"> • Union Park Treatment Facility • BOS072-073 Sewer Separation and System Optimization 	57.2
Constitution Beach	Eliminate		<ul style="list-style-type: none"> • Constitution Beach Sewer Separation 	3.8
North Dorchester Bay	Eliminate		<ul style="list-style-type: none"> • N. Dorchester Bay Storage Tunnel and Related Facilities • Pleasure Bay Storm Drain Improvements • Morrissey Blvd Storm Drain 	246.9
Reserved Channel	3 untreated	1.5	<ul style="list-style-type: none"> • Reserved Channel Sewer Separation 	59.2
South Dorchester Bay	Eliminate		<ul style="list-style-type: none"> • Fox Point Facility Upgrade (interim improvement) • Commercial Pt. Facility Upgrade (interim improvement) • South Dorchester Bay Sewer Separation 	126.2
Neponset River	Eliminate		<ul style="list-style-type: none"> • Neponset River Sewer Separation 	2.7
Regional			<ul style="list-style-type: none"> • Planning, Technical Support and Land Acquisition 	50.2
TOTAL		505.1		803.6
Treated		476.8		

* MWRA Proposed FY08 Capital Improvement Program

Note: Floatables controls are also recommended at all remaining outfalls and are included in the listed projects and capital budget.

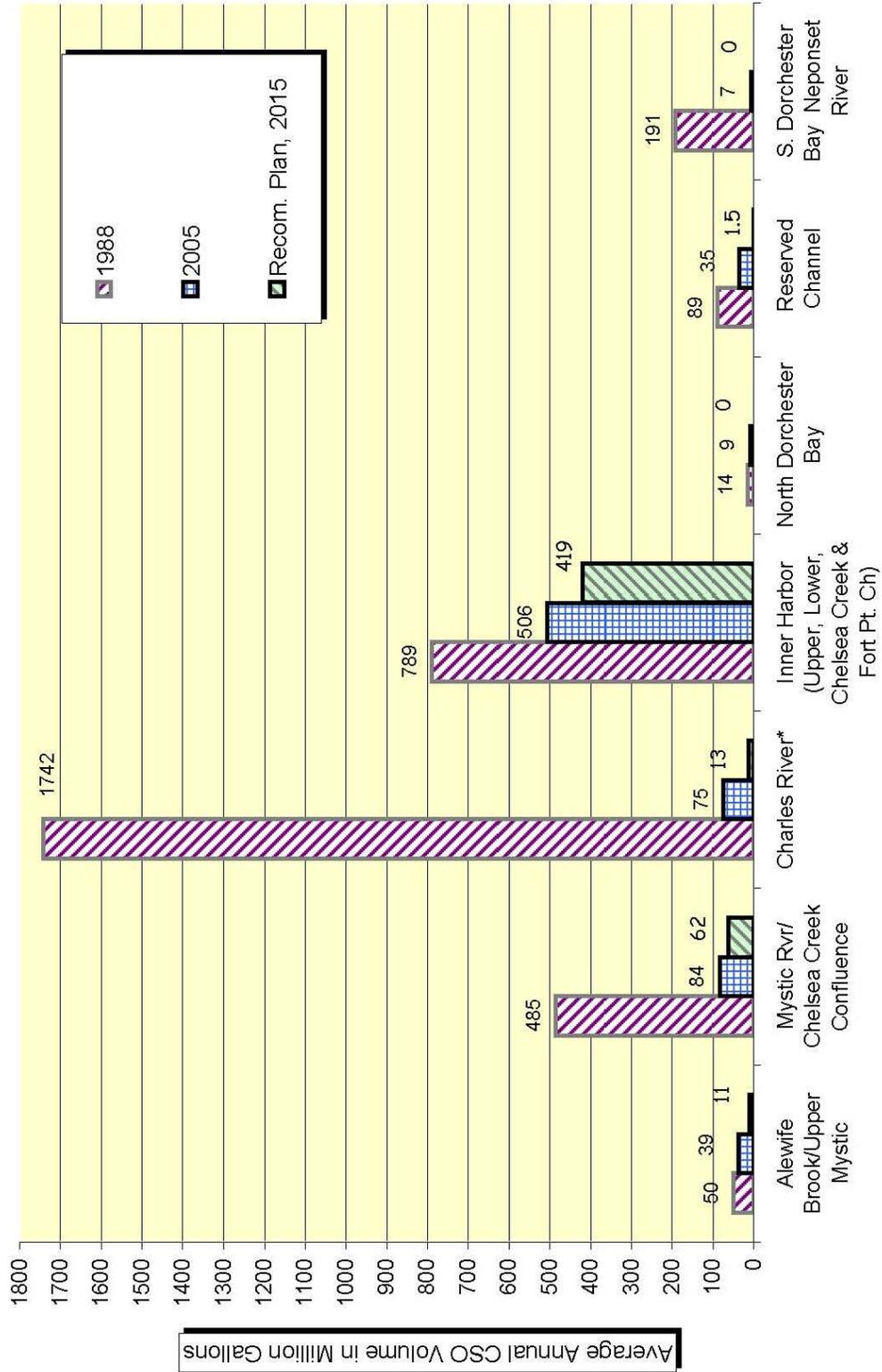
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Following completion of the plan, MWRA is required to undertake an assessment of system-wide performance to verify that the CSO control goals have been met, consistent with the plan and in compliance with water quality standards. A report on the results of the multi-year assessment are due in 2020. It is at that time that EPA and DEP propose to make final decisions regarding water quality standards relative to CSOs for the Charles River and Alewife Brook/Upper Mystic River. Any additional CSO controls recommended for the outfalls to these waters will then be the individual responsibilities of the respective discharge permittees, including MWRA, BWSC, and the cities of Cambridge and Somerville.

The total cost of MWRA's long-term control plan, including planning, design and construction, is estimated to be \$803.6 million (December 2007 dollars).² The performance goals of this recommended plan, by receiving water, are shown in Figure 3. Annual CSO discharge volume will be reduced from 3.3 billion gallons in 1988 to 0.5 billion gallons, and 94.5% of the remaining discharge volume will receive treatment at the CSO facilities located at Cottage Farm, Prison Point, Somerville Marginal and Union Park. The treatment facility at Constitution Beach was decommissioned in 2000, and the treatment facilities at Commercial Point and Fox Point will be decommissioned when the South Dorchester Bay sewer separation project is completed hopefully in 2007 and no later than November 2008.

² MWRA estimates that it will spend \$864 million, including escalation to the midpoint of construction and contingency, to complete the plan on schedule.

Figure 3. CSO Discharge Volumes are Diminishing



Receiving Water Bodies

* Includes discharges from outfall BOS046 to the Back Bay Fens (Muddy River)

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4. Overall Progress and Benefits Achieved

CSO spending in 2006 brought total MWRA capital expenditures on the CSO control plan to \$374.5 million, of the total \$803.6 million cost estimate in MWRA’s Fiscal Year 2008 Capital Improvement Program (FY08 CIP). With the cooperation of its CSO communities, MWRA has completed 16 of the 35 CSO projects, and nine additional projects are now well into construction. CSO discharges to Constitution Beach and the Neponset River were eliminated several years ago with the completion of sewer separation projects in those areas.

Since 1987, when MWRA assumed responsibility for developing and implementing a regional CSO control plan in the Boston Harbor Case, improvements to MWRA’s wastewater transport and treatment systems have produced huge reductions in CSO discharges (see Figure 3) with dramatic improvement in water quality in many areas. The wastewater system improvements, which included the upgraded Deer Island Treatment Plant and associated pumping stations, as well as completed CSO projects, have reduced average annual volume of CSO discharge in a typical rainfall year from 3.3 billion gallons in 1988 to 0.76 billion gallons today, with 68% of the remaining overflow receiving treatment at MWRA’s five CSO facilities.

CSO impacts to water quality have been greatly reduced. CSO discharges to South Boston beaches were cut almost in half with the improvements to pumping capacity at Deer Island from 1989 to 2000. For Boston Harbor, a decrease in wet-weather bacteria counts harbor-wide since the late 1980s (Figure 4) shows the cumulative effect of the Boston Harbor Project and CSO control projects.

Table 2: CSO Project Implementation Status – March 15, 2007

Completed Projects				In Design			
<i>Hydraulic Relief at CAM005</i>							
<i>Hydraulic Relief at BOS017</i>							
<i>Chelsea Trunk Sewer Replacement</i>							
<i>Chelsea Branch Sewer Relief</i>							
<i>CHE008 Floatables Control and Outfall Repair</i>							
<i>Cottage Farm CSO Facility Upgrade</i>							
<i>Prison Point CSO Facility Upgrade</i>		In Construction		<i>Prison Point Facility Optimization Study</i>			
<i>Somerville Marginal CSO Facility Upgrade</i>		<i>North Dorchester Bay – Tunnel</i>		<i>North Dorchester Bay – Facilities</i>			
<i>Commercial Point CSO Facility Upgrade</i>		<i>East Boston Branch Sewer Relief (Contract 1)</i>		<i>E. Boston Branch Sewer Relief (Contracts 2 and 3)</i>			
<i>Fox Point CSO Facility Upgrade</i>		<i>Union Park Treatment Facility (90% complete)</i>		<i>Brookline Connection and Cottage Farm Inflow Controls</i>			
<i>MWRA Floatables/Outfall Closing Projects</i>		<i>Charlestown BOS019 Storage Conduit (90% complete)</i>		<i>Reserved Channel Sewer Separation</i>			
<i>Neponset River Sewer Separation</i>		<i>South Dorchester Bay Sewer Separation (98% complete)</i>		<i>Bulfinch Triangle Sewer Separation</i>		Not Started	
<i>Constitution Beach Sewer Separation</i>		<i>Fort Point Channel Sewer Separation (95% complete)</i>		<i>Brookline Sewer Separation</i>		<i>Charles R. Interceptor Gate Controls/Add’l. Connections</i>	
<i>Somerville Baffle Manhole Separation</i>		<i>Morrissey Boulevard Storm Drain</i>		<i>CAM004 Outfall and Basin (Cambridge Contract 12)</i>		<i>MWR003 Gate and Rindge Ave. Siphon Relief</i>	
<i>Pleasure Bay Storm Drain Improvements</i>		<i>CAM004 Sewer Separation (25%) (Cambridge Contracts 1 and 2)</i>		<i>CAM004 Sewer Separation (Cambridge Contracts 8 and 9)</i>		<i>CAM400 Manhole Separation</i>	
<i>Stony Brook Sewer Separation</i>		<i>Regionwide Floatables Control (75% complete)</i>		<i>Regionwide Floatables Control (Cambridge Outfalls)</i>		<i>Alewife Interceptor Connection Relief and Floatables Controls</i>	

Total number of discrete projects referenced in Schedule Seven: 35

Efforts to Track CSO Benefits

In 2006, MWRA continued to perform hydraulic modeling and water quality sampling to measure improved sewer system performance, estimate remaining CSO discharges and their impacts, and track improvements in water quality conditions as CSO control projects are implemented. A considerable amount of hydraulic modeling and water quality sampling was conducted to comply with the requirements of MWRA's NPDES permit and the conditions of regulatory variances. The permit and variances require MWRA to estimate the quantity of CSO discharge from active outfalls in every storm event occurring in the previous year.

The efficacy of completed CSO control work is assessed by comparing discharges from year to year and relating them to what would be expected to occur in "typical year" rainfall conditions, which were the performance basis for the CSO control goals in the long-term plan. The modeling results over the last few years confirm that MWRA is on track toward achieving the predicted benefits of its CSO plan. MWRA has submitted annual discharge estimates to EPA and DEP presenting the modeling results for years 2001 through 2005, and plans to submit the estimates for 2006 in April 2007.

Efforts to Safeguard Long-term Benefits

Another important activity in MWRA's CSO control program is the review of proposed projects involving changes to the MWRA or community sewer systems or land use development in the service area. Careful consideration must be given to the impacts of sewer system improvements and development projects to ensure that these projects will not compromise sewer system performance, the attainment of CSO control goals, or the benefits of CSO control long into the future.

Through coordinated efforts with its CSO communities (Boston, Cambridge, Chelsea and Somerville) and with DEP, MWRA reviews large development plans (e.g. Environmental Notification Forms, Draft and Final Environmental Impact Reports) and has worked with developers to ensure that project plans include mitigation of potential negative impacts to the sewer system. Development projects typically increase the amount of wastewater flow to the community and MWRA combined sewer systems, which could increase the burden on the systems during wet weather and exacerbate system flooding and overflows.

Communities typically require development projects to remove on-site stormwater flows from the combined sewer system where possible, or to prevent any increase in stormwater flows that must continue to drain to a combined sewer. To offset the impacts of the additional sanitary flow that typically accompanies large-scale development, DEP, MWRA and the communities urge developers to remove, at an appropriate ratio (e.g. 3:1, 4:1, up to 10:1), an amount of stormwater or infiltration (groundwater entering the pipes). The developer may accomplish this on the project site by separating sewers and storm drains that were previously combined, or the developer may perform work off-site to remove wet weather flows from a hydraulically related sewer system. The result in either case is no net increase in wet weather overflows, at a minimum, or a net reduction in wet weather flows and overflows.

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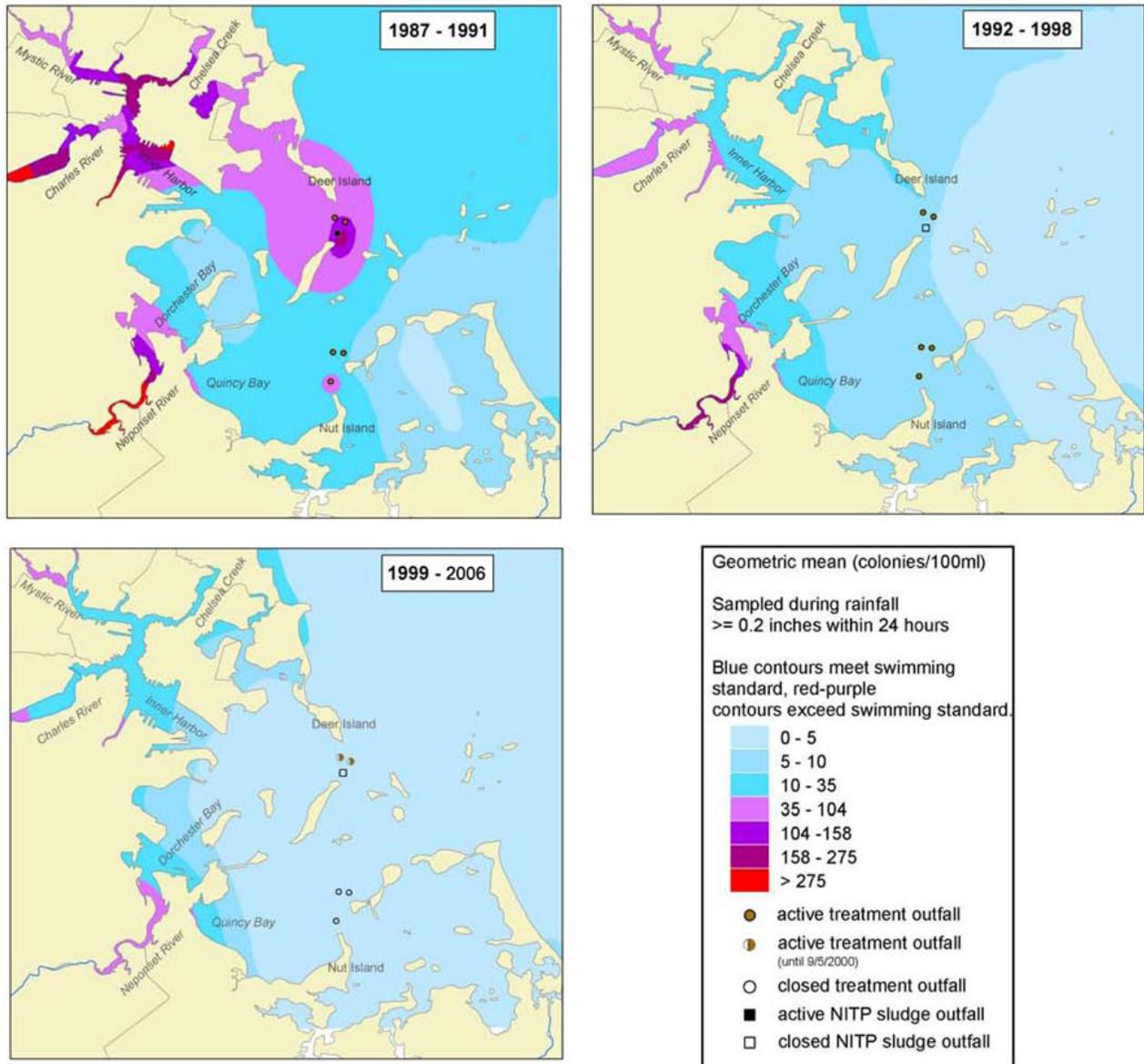


Figure 4. Changes in Boston Harbor *Enterococcus* Counts in Wet Weather

Contours show the geometric means of *Enterococcus* data collected when more than 0.2 inches of rain fell in the previous 24 hours. Blue areas meet the EPA geometric mean standard and red-purple areas exceed the standard.

- 1987 - 1991** This period shows data collected prior to the Boston Harbor Project and CSO plans began, through the last year that sludge was discharged (1991). In wet weather, areas affected by the discharge of sewage and sludge from the Deer Island Treatment Plant and Nut Island Treatment plant and most of the Inner Harbor and tributary rivers failed to meet the standard.
- 1992 - 1998** Data from these years reflects the affects of CSO upgrades, the ending of sludge discharge, full pumping at DITP, improved primary and beginning secondary treatment at DITP. Most of the harbor meets standards except for the tributary rivers, Fort Point Channel and along Wollaston Beach.
- 1999 - 2006** The current period shows continued improvement due to the closure of 22 CSO outfalls, upgrades of CSO facilities, ending of harbor treatment plant effluent discharges as the new outfall began operating, and local efforts to abate stormwater pollution.

5. CSO Control Plan Cost and Schedule

Remaining Cost and Schedule Concerns

The approvals MWRA secured from EPA and DEP on the updated long-term CSO control plan and the associated changes to the court order provide MWRA more certainty in managing its capital program and rate increases over a 15-year period, through 2020.

MWRA has more immediate cost and schedule concerns with respect to construction of the Alewife Brook CSO plan. MWRA and the City of Cambridge recommended a new CSO control plan for Alewife Brook in 2001 and received state and federal regulatory approvals in 2003 to implement the new plan. By the end of 2004, Cambridge had nearly completed final design of Contract 12, involving construction of a stormwater basin and outfall that are necessary to accommodate new stormwater flows generated by the recommended sewer separation work that is the core of the new plan. At that time, Cambridge was also working to obtain the necessary construction permits for Contract 12.

Schedule Seven required construction of Contract 12 to commence by July 2007. All of the other Alewife related project milestones were based on this schedule for Contract 12. However, the citizens' appeal of the Wetlands Order of Conditions issued by the Cambridge Conservation Commission (as well as the subsequent appeal of the Superseding Order of Conditions issued by DEP) has not been resolved as hoped and has caused significant additional delay. Without wetlands approval, the stormwater basin and outfall cannot be constructed, and without the basin and outfall the rest of the Alewife plan is not feasible. The appeal was only partially resolved in administrative law proceedings in 2006. Alewife related project schedules, including the Contract 12 construction milestone, two design milestones that were not met for two of the other Alewife projects, and other related project schedules, are now delayed approximately one year beyond the respective milestones in Schedule Seven. Each day that the appeal is not resolved brings an additional day of delay for all of the Alewife projects. MWRA continues to track the progress of the administrative law proceedings.

Project Schedules

The CSO project schedules are driven by milestones for design and construction in Schedule Seven of the Federal court order. The schedules are aggressive and account for project-specific design, permitting and construction requirements. In addition, the program continues to face cost and schedule challenges, including the general uncertainty associated with construction of large tunnels, such as the North Dorchester Bay storage tunnel, and the difficulty in obtaining the necessary permits for the Alewife Brook stormwater detention basin and the Morrissey Boulevard storm drain project associated with the North Dorchester CSO control program. Notwithstanding these challenges, MWRA, working in cooperation with BWSC, the Town of Brookline and the City of Cambridge, will continue to manage the CSO program with the goal of controlling project costs and improving upon established schedules where possible.

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Table 3: CSO Project Cost and Schedules
 (Shading indicates completed project.)

Project		Project Cost in \$ million (Prop. FY08 CIP)	Commence Design	Commence Construction	Complete Construction
North Dorchester Bay Storage Tunnel and Related Facilities		\$210.7	Aug-97	Aug-06	May-11
Pleasure Bay Storm Drain Improvements		\$3.2	Sep-04	Sep-05	Mar-06
Hydraulic Relief Projects	CAM005 Relief	\$2.3	Aug-97	Jul-99	May-00
	BOS017 Relief			Jul-99	Aug-00
East Boston Branch Sewer Relief		\$73.5	Mar-00	Mar-03	Jun-10
BOS019 CSO Storage Conduit		\$14.3	Jul-02	Mar-05	Mar-07
Chelsea Relief Sewers	Chelsea Trunk Sewer Relief	\$29.8	Jun-97	Aug-99	Aug-00
	Chelsea Branch Sewer Relief			Dec-99	Jun-01
	CHE008 Outfall Repairs			Dec-99	Jun-01
Union Park Detention/Treatment Facility		\$49.5	Dec-99	Mar-03	Apr-07
CSO Facility Upgrades and MWRA Floatables	Cottage Farm Upgrade	\$22.4	Jun-96	Mar-98	Jan-00
	Prison Point Upgrade			May-99	Sep-01
	Commercial Point Upgrade			Nov-99	Sep-01
	Fox Point Upgrade			Nov-99	Sep-01
	Somerville-Marginal Upgrade			Nov-99	Sep-01
	MWRA Floatables and Outfall Closings			Mar-99	Mar-00
Brookline Connection and Cottage Farm Overflow Interconn. and Gate		\$4.5	Sep-06	Jun-08	Jun-09
Charles River Interceptor Gate Controls and Additional Connections		\$2.0	Jan-08	Jan-10	Jan-11
Optimization Study of Prison Point CSO Facility			Mar-06	Mar-07	
South Dorchester Bay Sewer Separation		\$118.2	Jun-96	Apr-99	Jun-07
Stony Brook Sewer Separation		\$45.1	Jul-98	Jul-00	Sep-06
Neponset River Sewer Separation		\$2.7		Apr-96	Jun-00
Constitution Beach Sewer Separation		\$3.8	Jan-97	Apr-99	Oct-00
Fort Pt Channel Conduit Sewer Separation and System Optimization		\$7.7	Jul-02	Mar-05	Mar-07
Morrissey Boulevard Storm Drain		\$33.1	Jun-05	Dec-06	Jun-09
Reserved Channel Consolidation Conduit Sewer Separation		\$59.2	Jul-06	May-09	Dec-15
Bulfinch Triangle Sewer Separation		\$4.4	Nov-06	Nov-08	Jul-13
Brookline Sewer Separation		\$9.0	Nov-06	Nov-08	Jul-13
Somerville Baffle Manhole Separation				Apr-96	Dec-96
Cambridge/Alewife Brook Sewer Separation	CAM004 Outfall and Detention Basin	\$52.4	Jan-97	Jul-08	Jul-10
	CAM004 Sewer Separation			Jul-98	Jan-14
	CAM400 Manhole Separation			Jul-07	Jul-09
	Interceptor Connection Relief/Floatables			Jul-07	Dec-09
	MWR003 Gate and Rindge Ave. Siphon	\$2.0	Apr-10	Nov-11	Jan-13
Region-wide Floatables Control and Outfall Closings (includes Planning & Support)		\$3.8 \$50.2	Sep-96	Mar-99	Dec-07
Total Budget		\$803.6			

NOTE:

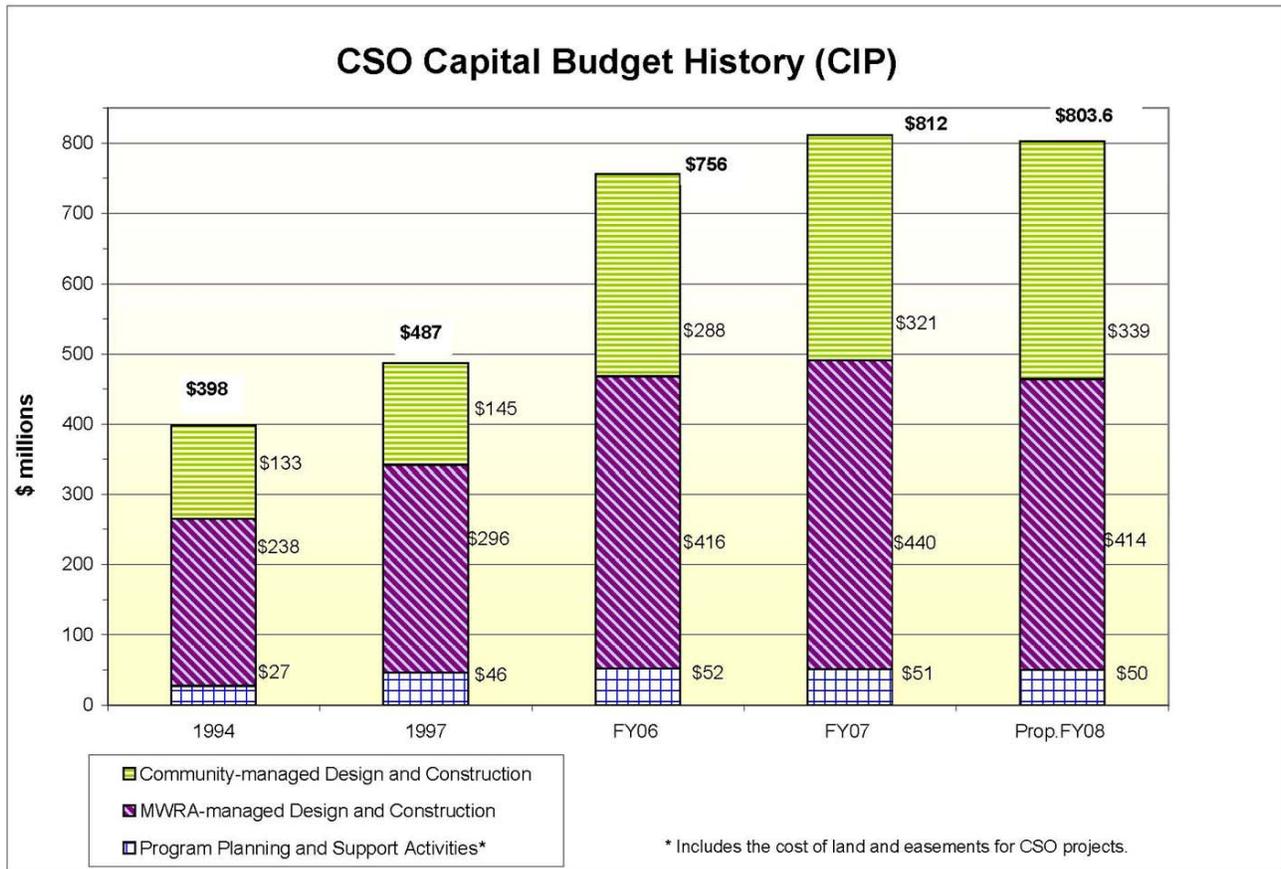
Schedules for Cambridge/Alewife Brook Sewer Separation, moving forward, are 1 year beyond the respective court milestones, due to the ongoing wetlands appeal.

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MWRA's Capital Budget and Spending Projections for CSO Control

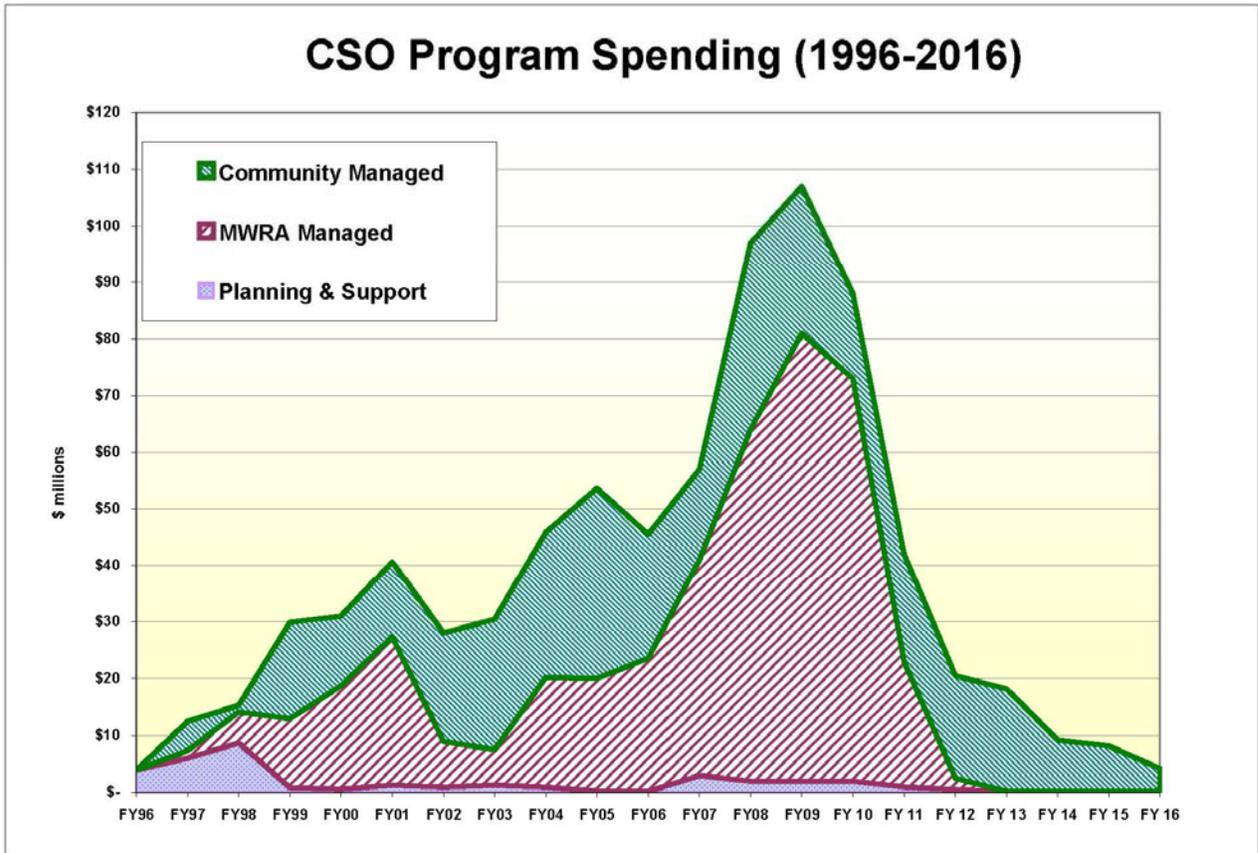
As shown in the chart below, the total cost of the CSO plan (planning, design and construction) has risen from \$398 million when MWRA issued the Final CSO Conceptual Plan in 1994, to \$487 million when EPA and DEP approved the Final CSO Facilities Plan and Environmental Impact Report in 1997, to \$803.6 million in MWRA's Proposed FY08 CIP. The Proposed FY08 CIP estimate is in December 2007 dollars, and MWRA projects to spend \$864 million to complete the plan on schedule, including escalation to the mid-point of construction and contingency.

The CSO program is the largest single capital spending commitment in MWRA's Approved FY07 and Proposed FY08 Capital Improvement Programs. In the Proposed FY08 CIP, the CSO program accounts for 22% of total proposed capital spending and 36% of wastewater related capital spending in FY07 and beyond. Annual spending on the CSO program has increased over the last several years and will continue to increase as more projects move into construction.



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Annual CSO spending is estimated to peak at \$107 million in FY09 and will continue through FY21, though most of the spending will occur by FY16, when construction of the last CSO project is scheduled to be completed.



6. Project Implementation

This section defines the scope and schedule of each of the projects recommended in the long-term CSO control plan and describes progress made in 2006, any significant project changes since 2005, and key issues that have affected or may affect MWRA’s ability to implement the projects in compliance with Schedule Seven.

6.1 MWRA Managed Projects

NORTH DORCHESTER BAY STORAGE TUNNEL AND RELATED FACILITIES

Recommended Plan and Implementation Schedule

In April 2004, the MWRA Board of Directors voted to approve a revised recommended plan for CSO control for North Dorchester Bay and the Reserved Channel, and MWRA filed the Supplemental Facilities Plan and Environmental Impact Report (“SFP/EIR”) presenting the revised plan. The recommended plan calls for eliminating CSO discharges up to a 25-year storm and providing a 5-year level of separate stormwater control for the North Dorchester Bay beaches and eliminating stormwater discharges to Pleasure Bay by redirecting them to the Reserved Channel. Components of the recommended plan and MWRA’s project schedule are presented in Table 4. The plan is shown in Figure 5.

Table 4: Revised Plan for North Dorchester Bay (2004 SEIR)

COMPONENT	DESCRIPTION	PROJECT SCHEDULE		
		Commence Design	Commence Construction	Complete Construction
North Dorchester Bay Storage Tunnel	<ul style="list-style-type: none"> • 10,832-ft. long, 17-ft. diameter soft-ground tunnel with mining shaft and equipment removal shaft • Drop shafts, diversion structures and associated piping at CSO outfalls BOS081 to BOS086, including gates to control stormwater 	Sep 04	Aug 06	Dec 09
North Dorchester Bay Related Facilities	<ul style="list-style-type: none"> • 15 mgd dewatering pump station at Conley Terminal and 24-inch force main • Odor control facility at upstream end of tunnel, near State Police building 	Nov 06	Apr 09	May 11
Pleasure Bay Storm Drain Improvements	<ul style="list-style-type: none"> • Stormwater piping and appurtenances to relocate stormwater discharges from Pleasure Bay to the Reserved Channel 	Sep 04	Sep 05	Mar 06
Morrissey Boulevard Storm Drain	<ul style="list-style-type: none"> • 2,900-foot long, 12x12 foot box conduit for stormwater conveyance to Savin Hill Cove/South Dorchester Bay • Gated connection to CSO Storage tunnel 	Jun 05	Dec 06	Jun 09

Figure 5
 North Dorchester Bay and Reserved Channel
 Recommended CSO Control Plans



——— Tunnel
 - - - - - Dewatering Force Main
 - - - - - Storm Drain

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The state Secretary of Environmental Affairs issued a certificate on July 16, 2004, stating that the SFP/EIR “adequately and properly complies with” Massachusetts Environmental Policy Act (MEPA) requirements and that “the project may now proceed to the final design and permitting stage.” The certificate also indicated that additional information should be developed during the permitting process, especially information related to the Morrissey Boulevard storm drain project. It required that a monitoring program be developed for water and sediment quality in Savin Hill Cove/South Dorchester Bay to identify project-specific impacts or changes to these water bodies. MWRA outlined a proposed monitoring plan in its Section 61 Findings submitted in July 2005.

Once completed, the project is expected to virtually eliminate beach closings resulting from pollution sources associated with the North Dorchester Bay outfalls. These sources are CSO, separate stormwater, and illegal sanitary connections to drainage pipes. The project will eliminate CSO discharges except in catastrophic storms (greater than 25-year storm), compared to 21 discharges per year on average today.

The project includes improvements to minimize separate stormwater discharges to the South Boston beaches. Overall, separate stormwater from BWSC and Department of Conservation and Recreation (“DCR”) drainage systems will be discharged to the beach areas only in storms greater than the 5-year design storm, compared to current discharges during every rainstorm (100 times per year on average). Most of the stormwater now discharging to the beaches will be tied into the CSO tunnel.

In March 2006, MWRA completed the Pleasure Bay Storm Drain Improvements project, which relocated the Pleasure Bay stormwater discharges to the less sensitive Reserved Channel. It is important to note that MWRA has no statutory or regulatory responsibility for managing separate stormwater and that this project and its various stormwater elements do not set a precedent for MWRA to adopt such responsibilities.

With the Morrissey Boulevard storm drain, BWSC stormwater discharges from the BOS087 area to Carson Beach will be removed from the beach by directing the flows into the CSO tunnel up to the 1-year storm and redirecting the flows to a non-swimming area of South Dorchester Bay (Savin Hill Cove) in larger storms. By tying much of the stormwater flows from outfall BOS087 to the new CSO storage tunnel, the plan minimizes the frequency and volume of new stormwater discharges to Savin Hill Cove, compared to an earlier BWSC/DCR Morrissey Boulevard drainage proposal that did not call for a tunnel connection. Under MWRA’s plan, stormwater from the BOS087 outfall area will be captured in the tunnel up to the 1-year design storm, resulting in one diversion discharge per year to Savin Hill Cove, on average, rather than every time it rains, as in the previous proposal. In addition, approximately one million gallons of the “first flush” of stormwater from the BOS087 tributary area will be diverted to the new tunnel up to the 5 year storm event.

MWRA’s Proposed FY08 CIP includes a budget of \$247.0 million (December 2007 dollars) for the North Dorchester Bay CSO plan, including the Pleasure Bay and Morrissey Boulevard storm drains. An additional \$10 million in land, easement and permit costs is included in the CIP. MWRA estimates the total cost to complete the North Dorchester Bay plan to be \$287.3 million, with land, easement, permit costs and inflation to the mid-point of construction.

BWSC is managing implementation of the Morrissey Boulevard storm drain and Reserved Channel sewer separation projects under amendments to the CSO Memorandum of Understanding and Financial Assistance Agreement. More information about the Morrissey Boulevard storm drain and Reserved Channel sewer separation projects, including work progress, can be found in later sections of this report.

Progress on North Dorchester Bay Storage Tunnel and Related Facilities

	<u>Court Milestone</u>	<u>Project Schedule</u>
Commence Construction	August 2006	August 2006
Complete Construction	May 2011	May 2011

On August 31, 2006, MWRA issued the Notice to Proceed with the \$145.7 million construction contract for the North Dorchester Bay storage tunnel, in compliance with Schedule Seven. This was a major event in the efforts to eliminate CSO discharges to the South Boston beaches. The tunnel contract is the single largest contract within the plan for North Dorchester Bay and in MWRA's entire long-term CSO control plan. The Notice to Proceed moved the plan into construction after nine years of design, project reassessment, plan revision and design revision. It is clear testament to the consensus that MWRA was able to reach with the South Boston community and many other stakeholders.

Prior to August, MWRA's efforts in 2006 focused on finalizing the construction contract documents, bidding and awarding the contract, and acquiring the necessary land, easements and permits. Along with the contract award, MWRA was able to obtain a Chapter 91 license for proposed facilities in historical tidelands, a construction permit from DCR, street opening permits from the City of Boston, approvals from the Boston Parks Commission, and an access agreement from Massport for work at Conley Terminal. MWRA also secured necessary state legislation pursuant to Article 97, for work in park lands, including Marine Park, Day Boulevard and the beaches.

Since the August award, MWRA has focused its attention on two immediate work objectives: 1) proceeding with the tunnel construction contract on schedule and 2) commencing design services for the tunnel-related facilities, which include the dewatering pump station, force main and remote odor control facility. For tunnel construction, MWRA and the contractor established coordination with Massport, State Police, DCR, BWSC, and various utility companies. The contractor and MWRA's Construction Manager (CM) mobilized to the Auxiliary Field Complex located at MWRA's Columbus Park Headworks, and the contractor completed the Fargo Street staging area for equipment and materials storage and handling. The contractor relocated Massport's perimeter road within Conley Terminal away from the construction work area for the tunnel mining shaft and is currently installing and relocating utilities and setting up the CM's field complex in this work area. The contractor is setting up other work areas near certain CSO outfalls where near-surface pipeline construction and drop shaft construction are planned.

The contractor commenced construction of the mining shaft in February 2007 and plans to complete the shaft well before the tunnel boring machine (TBM) is delivered. The TBM is now being fabricated in Japan. The project schedule calls for tunnel mining to begin by October 2007.

In February 2007, MWRA also commenced construction activities at some of the existing CSO outfalls, which will eventually be connected to the storage tunnel. Work at the outfalls involves constructing and relocating utilities, relining and reinforcing the existing outfall conduits, constructing CSO and storm drain diversion structures and constructing drop shafts for the tunnel connections.

On November 27, 2006, MWRA issued the Notice to Proceed with the \$3.4 million design contract for the tunnel related facilities. The facilities include the 15 million gallon per day (mgd) pumping station at Massport's Conley Terminal and 24-inch force main that will be used to dewater the tunnel after storms, as well as the remote odor control facility at the upstream end of the tunnel near the State Police Building and Bayside Exposition Center. Preliminary design work is well underway, and MWRA has received several work plans for field investigations, subsurface exploration programs and design analyses that will be conducted in the spring of 2007. The preliminary design report is due in July 2007.

MWRA’s project schedule calls for construction of the facilities to commence in April 2009, when the tunnel mining operations are complete and work space around the mining shaft at Conley Terminal becomes available for the facilities contractor. All construction work related to the North Dorchester CSO plan, including connecting the facilities to the tunnel and bringing the tunnel into operation, is scheduled to be complete by May 2011, in compliance with Schedule Seven.

Progress on Pleasure Bay Storm Drain Improvements

Complete Construction	<u>Court Milestone</u> May 2006	<u>Project Schedule</u> March 2006
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On March 28, 2006, MWRA completed construction of the Pleasure Bay storm drain improvements, ending wet weather discharges to Pleasure Bay Beach. The work was completed ahead of the Schedule Seven milestone and well before the start of the 2006 swimming season.

The larger, northern leg of the storm drain system that rings Pleasure Bay from Castle Island to Marine Park Bay now conveys storm flows to outfall BOS080, which discharges to the Reserved Channel at Conley Terminal (see Figure 6 below). Sediment controls were incorporated into the design of the new drainage system. The smaller southern leg of the new storm drain system, near Kelly’s Landing and the City Point parking lot, is no longer connected to the beach outfalls, but instead connects to outfall BOS081, which will eventually be tied into the CSO storage tunnel.



**Figure 6
 Pleasure Bay Storm Drain Improvements
 Completed March 2006**

The old storm drain outfalls that served these systems have been removed from Pleasure Bay Beach, and the beach surface has been restored. Unsightly drainage pipes and gullies at a dozen locations on the beach have been eliminated and no longer need to be avoided by beach users.

HYDRAULIC RELIEF PROJECTS AT CAM005 AND BOS017

MWRA completed construction of these two projects in 2000. A single construction contract combined two localized hydraulic relief projects, one in Cambridge to minimize CSO discharges at outfall CAM005, which discharges to the Charles River Basin, and the other in Charlestown to minimize CSO discharges at outfall BOS017, which discharges to the Lower Mystic River. In Cambridge, the 24-inch, 40-foot long dry weather connection between the CAM005 regulator and MWRA’s North Charles Metropolitan Sewer, adjacent to Mt. Auburn Hospital, was relieved with a new 54-inch connection. In Charlestown, 190 feet of 36-inch pipe was installed in Sullivan Square to divert two BWSC combined sewers to a more direct connection with MWRA’s Cambridge Branch Sewer, thereby relieving the original dry weather connection from the BOS017 regulator. In addition, a 10-foot long restriction between the Charlestown and Cambridge Branch Sewers, adjacent to Sullivan Square, was removed, lowering hydraulic grade lines in the Charlestown Branch Sewer during wet weather and possibly relieving CSO overflow conditions upstream, at outfall BOS019.

EAST BOSTON BRANCH SEWER RELIEF

	<u>Court Milestone</u>	<u>Project Schedule</u>
Commence Design	March 2000	March 2000
Commence Construction	March 2003	March 2003 (Contract 1)
Resume Design	June 2006	June 2006
Commence Construction	June 2008	June 2008 (Contract 2) December 2008 (Contract 3)
Complete Construction	June 2010	June 2004 (Contract 1) June 2010 (Contract 2) March 2010 (Contract 3)

This project calls for relief of MWRA’s interceptor system serving most of East Boston to minimize CSO discharges to Boston Harbor and Chelsea Creek through outfalls BOS003-014. The current plan, originally recommended in the 1997 Facilities Plan/EIR, consists of replacing, relieving or rehabilitating approximately 4.5 miles of existing interceptor sewers using a combination of construction methods including micro-tunneling, pipe bursting, open-cut excavation and pipe relining. MWRA commenced design services in March 2000, in compliance with the court schedule.

Early design plans called for three construction contracts to implement the project. In 2002, MWRA suspended the design work on two of the contracts, when it determined that the original plan would cost twice as much as estimated in the 1997 Facilities Plan/EIR and would not fully attain the recommended level of CSO control. MWRA continued design work on the first construction contract, which involved relining portions of the existing East Boston Branch Sewer to extend the useful life of the sewer and improve its hydraulic capacity. At the same time, MWRA began a reassessment of the remaining project components, to evaluate the cost effectiveness of the plan against alternatives that might provide higher benefit and/or cost less.

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MWRA completed the project reassessment in early 2004. One conclusion from the reassessment was that CSO overflows in East Boston were slightly less than estimated in 1997. The number of CSO discharges at the most active outfall dropped from the previously estimated 37 per year in the 1997 Plan to 31 per year. The total annual volume of CSO discharge from all 10 outfalls in East Boston dropped from 45 million gallons to 41 million gallons.

The reevaluation also considered the potential for improving the performance of the facilities and pipelines that carry East Boston flows to the Deer Island Treatment Plant. These facilities include the Caruso Pump Station in East Boston, the Winthrop Terminal facility and the Chelsea Creek Headworks. The evaluations did not find new opportunities for improving the performance of these facilities beyond the benefits of improvements that were already planned. Although planned improvements to the Winthrop Terminal facility will increase transport capacity and allow the Caruso Pump Station to pump at a slightly greater rate, this increase in capacity was found to have little effect on overflows in East Boston, where ability to convey wet weather flows is limited not by the pump station but by the conveyance capacities of the East Boston pipes delivering flow to the station.

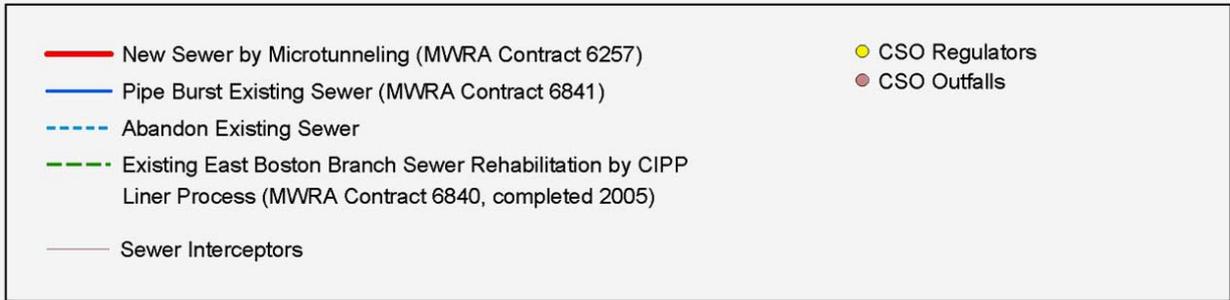
In addition, the reassessment compared the cost and benefit of a total of 20 CSO control alternatives involving hydraulic relief, sewer separation and flow diversion. Other CSO control technologies that were evaluated and rejected in the 1997 Plan, such as storage or treatment, were not deemed cost-effective primarily because the outfalls are dispersed throughout East Boston and would have to be consolidated.

The results confirmed that the interceptor relief project (Figure 7), at a total estimated capital cost of \$73 million (in December 2005 dollars), more than twice the cost estimate in the 1997 Facilities Plan/EIR, would reduce CSO discharges from 31 to 6 in a typical year and reduce annual discharge volume from 41 million gallons to 8.6 million gallons, compared to the 1997 plan goals of 5 activations and 4.0 million gallons. It is important to note that while the hydraulic relief plan does not meet the 1997 goals, which were the basis for regulatory approvals of the plan and for new CSO discharge limits in the BWSC and MWRA NPDES permits, the plan's performance is consistent with the predicted performance in the 1994 CSO Conceptual Plan and System Master Plan, which was the original basis for the milestones in Schedule Six.

Based on the results of the reassessment, MWRA determined that the interceptor relief plan, even at the higher cost estimate of \$73 million, continued to be cost-effective and would significantly reduce CSO discharges at all of the East Boston outfalls, keeping with the intent and benefits of the 1997 plan. Ongoing work by BWSC and others to separate sewers in East Boston will further reduce CSO discharges.

MWRA commenced the first construction contract (interceptor relining) in March 2003, in compliance with the court schedule, and completed the contract in June 2004. The second construction contract involves installation of a new sewer interceptor along Border, Condor, East Eagle and Chelsea Streets and along Marginal, Orleans and Bremen Streets primarily using micro-tunneling methods, and the third contract replaces and upgrades interceptors in upstream areas using "pipe bursting" methods, whereby a new, larger pipe is installed in the same place as the smaller existing pipe by pushing through and breaking up the old pipe. Excavation is limited to setup locations from where the new pipe will be driven and locations where connections must be made. To move the remaining construction contracts forward, MWRA chose to procure the remaining design services under a new contract.

Figure 7
 East Boston Branch Sewer Relief
 Hydraulic Relief Plan



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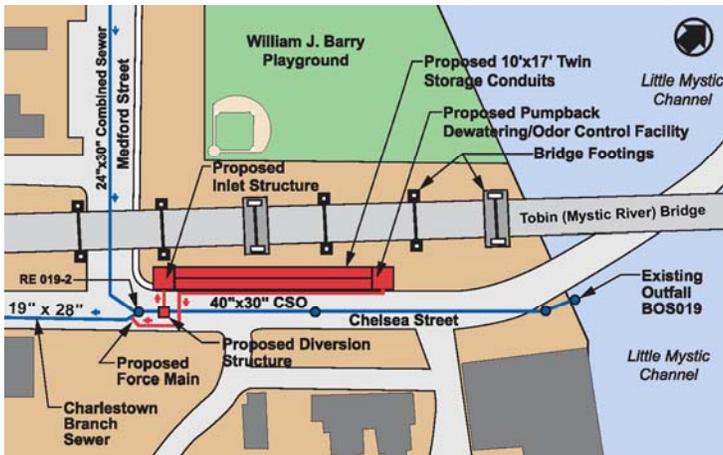
Progress Update

On June 15, 2006, MWRA issued the Notice to Proceed with the contract for remaining design services, in compliance with Schedule Seven. Since then, the design consultant has completed wetlands delineations and sewer system inspections and has updated the existing conditions plans. A subsurface exploration program to collect supplemental geotechnical and hazardous materials information began in the fall of 2006 and will continue after April 15, 2007, when the City’s winter moratorium on street excavation ends. MWRA is coordinating its project plans with BWSC’s plans for sewer separation in parts of East Boston and for rehabilitating local water, sewer and drainage systems along Border and Condor Streets. MWRA is also coordinating its plans with KeySpan’s plans for a new 24-inch gas main across Chelsea Street and Chelsea Creek.

The design schedule calls for completing the subsurface exploration program and preparing a draft Design Report this spring. The project is on schedule to commence construction by June 2008, in compliance with Schedule Seven. MWRA is tracking the progress of the BWSC utility replacement work to attempt to avoid overlaps with MWRA’s construction.

BOS019 CSO STORAGE CONDUIT

	<u>Court Milestone</u>	<u>Project Schedule</u>
Commence Design	January 2003	July 2002
Commence Construction	March 2005	March 2005
Complete Construction	September 2006	March 2007



The 1997 Facilities Plan/EIR recommended constructing a 380-foot long, 12’x12’ box conduit adjacent to the Tobin Bridge and Chelsea Street in Charlestown to store most of the CSO flows that discharge through outfall BOS019. The stored flows will be pumped back to the interceptor system for conveyance to Deer Island after each storm passes and system capacity becomes available. An aboveground building will be constructed to house the dewatering equipment, as well as the activated carbon odor control systems which will treat the air that is displaced when the conduit fills with combined sewage. During

larger storms that cause overflows that exceed the storage volume of the conduit, system relief will continue to be provided through the existing outfall. For this reason, underflow baffles were recommended to be installed within the existing and proposed regulator as part of this project to provide floatables control.

MWRA commenced the design contract for the BOS019 storage conduit in July 2002, in advance of the milestone in Schedule Six. As an initial design effort, MWRA completed a reassessment of the BOS019 storage conduit project in June 2003. The reassessment verified that a storage conduit larger than the one recommended in 1997 would be needed to reduce overflows at BOS019, but that the project remained cost-effective to meet the CSO control goals of two overflows per year and a total annual discharge volume of 0.4 million gallons. With the cost-effectiveness of the plan confirmed, MWRA commenced preliminary design work.

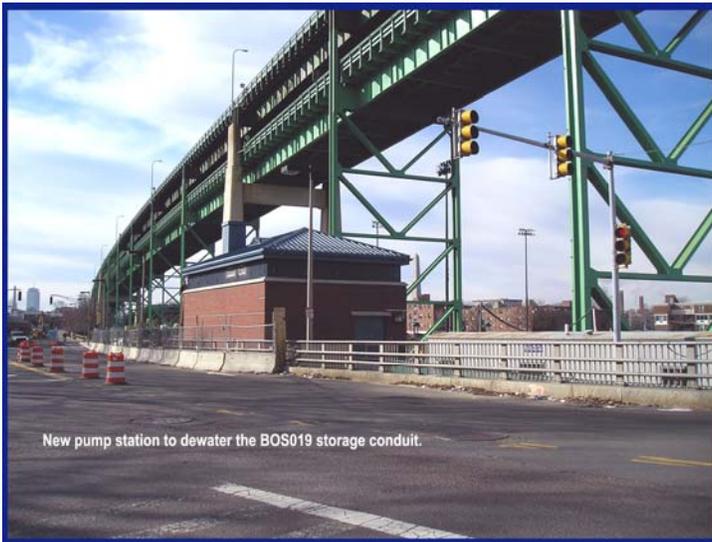
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In the course of design, several significant changes were made to the project from what was assumed in the 1997 Facilities Plan/EIR. MWRA reexamined system hydraulic conditions using flow meter data it collected in the fall of 2003. With the new data, MWRA concluded that a storage volume of 670,000 gallons would be necessary to meet the 1997 CSO control goals, a significant increase in size, as well as cost, over the 410,000 gallon storage conduit recommended in the 1997 plan. At the same time, to protect the Mystic River Bridge foundations during construction, the storage conduit was shortened in length by making it a double-barreled conduit, and moved further away from the bridge. MWRA added an automatic flushing-gate system for cleaning the two storage barrels after storms. The revised plan includes twin 10-foot wide by 17-foot high barrels, 280 feet long each, in lieu of the single 12'x12' box conduit.



The project is intended to reduce annual CSO discharge to the Little Mystic channel by 86%. CSO activations at BOS019 are expected to drop from about 14 times per year to two times per year on average.

MWRA issued the notice to proceed with the construction contract for the BOS019 CSO storage conduit in March 2005. At the time, MWRA reported that it had extended the construction duration for the BOS019 CSO storage conduit from 18 months to 24 months due to the increased size and complexity of the storage facility. The longer construction period moved the completion date from September 2006 to March 2007, six months later than the Schedule Seven milestone.



Progress Update

The contractor has completed approximately 96% of the construction and has begun dry weather testing of the equipment. The Contractor expects to achieve substantial completion by the end of March 2007. Work unrelated to operation of the new storage facility, such as site, roadway and sidewalk restoration, will continue as late as June 2007.

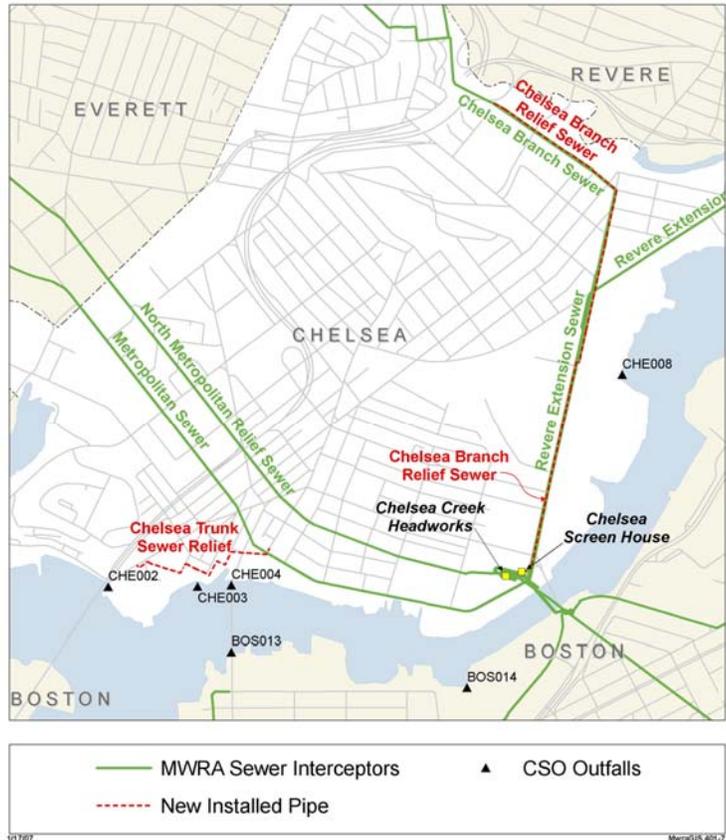
CHELSEA RELIEF SEWERS

Chelsea Trunk Sewer Replacement

MWRA completed this project in 2000, on schedule. The 1997 Facilities Plan/EIR recommended replacing a trunk sewer in Chelsea with larger pipe, to minimize CSO discharges to the Inner Harbor at outfalls CHE002, CHE003 and CHE004. The existing Chelsea Trunk Sewer, which varied in diameter from 8 to 15 inches, was replaced with 2,300 feet of 30-inch diameter pipe. MWRA also replaced or rehabilitated sections of the CHE002 and CHE003 outfalls. MWRA managed the construction, but the City of Chelsea retains ownership and responsibility for operation and maintenance of the sewer and outfalls.

Chelsea Branch Sewer Relief

MWRA completed this project in 2001, on schedule. The 1997 Facilities Plan/EIR recommended relieving MWRA's Chelsea Branch Sewer to minimize CSO discharges to Chelsea Creek at outfall CHE008 and reduce surcharging in the upstream transport system. MWRA installed 4,200 feet of 42-inch pipe and 3,500 feet of 66-inch pipe along Cabot Street and Eastern Avenue to replace or relieve MWRA's Chelsea Branch Sewer and Revere Extension Sewer, which lie parallel along Eastern Avenue. The new pipes were constructed primarily using microtunneling methods. The construction contract also included repairs to the existing CSO outfall at CHE008.



CHE008 Floatables Control and Outfall Repairs

This project was completed in 2001, on schedule. Outfall repairs at CHE008 included relining approximately 540 feet of the existing 42-inch outfall pipe, replacing 35 feet of the pipe at its downstream end, replacing the headwall and laying new riprap shore protection. An underflow baffle was installed at the sole regulator structure associated with this outfall to provide floatables control.

UNION PARK DETENTION/TREATMENT FACILITY

	<u>Court Milestone</u>	<u>Project Schedule</u>
Commence Design	December 1999	December 1999
Commence Construction	March 2003	March 2003
Complete Construction	September 2005	April 2007*

* MWRA commenced partial beneficial use of the new detention basins on December 31, 2006.

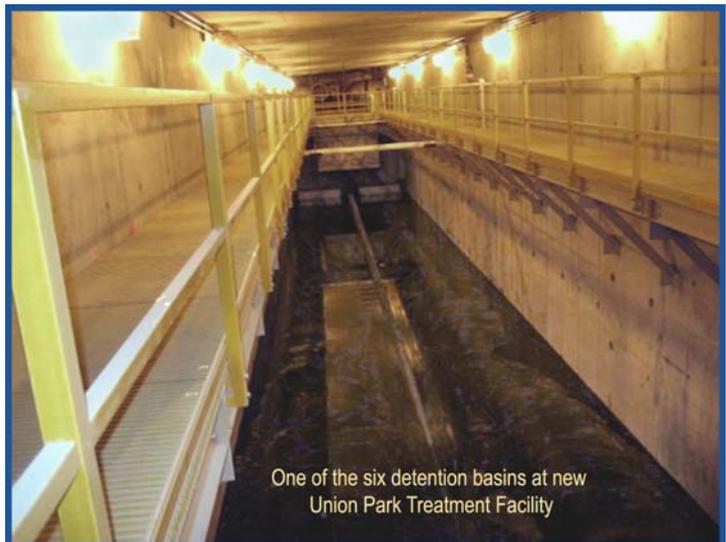
The Union Park Detention/Treatment Facility is intended to improve water quality in the Fort Point Channel by providing storage and treatment to CSO flows that are directed to BWSC’s Union Park Pump Station. The existing pumping station, constructed in 1976, provides flood control for the South End neighborhood of Boston.



The new facility includes coarse screens, fine screens, chlorination with sodium hypochlorite, dechlorination with sodium bisulfite and odor control equipment. A new building was constructed adjacent to the existing pumping station to house the new treatment equipment. New underground detention basins, which have a combined storage capacity of 2.2 million gallons, are intended to reduce the average annual number of pumping station discharges to the Fort Point Channel (from 25 to 17 per year) and to detain flows that exceed the storage capacity in larger storms, to allow a level of solids removal.

Progress Update

MWRA commenced the \$46.1 million construction contract in March 2003. The work is now 98% complete. Recent work includes instrumentation for the chemical treatment systems, physical check out of the chemical pumps, electrical control wiring, instrumentation check out, equipment training and systems testing. On December 31, 2006, MWRA brought the new treatment facility into partial beneficial use. MWRA has activated the fine screens and detention tanks to store up to 1.5 million gallons of CSO entering BWSC’s Union Park Pumping Station and thereby lower the frequency and volume of discharges from the pumping station to Fort Point Channel. Flows stored in the six detention tanks are pumped back to the interceptor after each storm, for treatment at Deer Island. Since December 31, MWRA has used the storage tanks on four occasions. MWRA was able to capture all of the flow during two storms and utilized the storage capacity of 1.5 million gallons to reduce CSO



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discharge to Fort Point Channel during the other two storms.

MWRA expects to complete construction and commence full operation of the detention/treatment facility in April 2007, 19 months later than the September 2006 milestone in Schedule Seven due to numerous construction delays. It is expected that discharges from the treatment facility will be authorized by, and subject to, NPDES permit limitations that EPA and DEP will incorporate as a modification to BWSC's current NPDES permit. If the permit is modified, it is expected that MWRA will be designated as a co-permittee for the portion of flow that discharges from the Union Park CSO treatment facility through CSO "outfall" MWR215, which is internal to the facility at a point between the treatment effluent channel and the BWSC pump station wet well.

UPGRADES TO EXISTING CSO FACILITIES

MWRA upgraded five of its six CSO facilities (Commercial Point, Cottage Farm, Fox Point, Prison Point and Somerville Marginal) to improve treatment performance and meet new residual chlorine discharge limits. The upgraded facilities were all fully operational by early 2003. A sixth facility, at Constitution Beach in East Boston, was decommissioned by MWRA in 2000, following completion of sewer separation work in that area (see later discussion, under "Constitution Beach Sewer Separation"). The facility upgrades generally included replacement of the existing chlorine disinfection systems with improved systems, construction of dechlorination systems, and other process control and safety improvements.



CHARLES RIVER CSO CONTROL PLAN PROJECTS

In response to the CSO control plan MWRA recommended in 1997, DEP and EPA issued a three-year variance to water quality standards for CSOs in the Charles River Basin in October 1998. This short-term water quality standards determination was made in lieu of issuing a long-term water quality standards revision. With the variance, DEP approved MWRA's plan for the Charles River Basin, but also required MWRA to identify and evaluate additional measures that could further reduce CSO discharges, especially at the Cottage Farm CSO treatment facility. Since 1998, DEP and EPA have issued several three-year extensions to the variance.

In August 2005, MWRA recommended adding a set of optimization measures and targeted sewer separation projects to its plan to increase the level of CSO control at Cottage Farm and at other Charles River outfalls. The projects include:

- Brookline Connection/Cottage Farm Overflow Chamber Interconnection and Gate Control
- Charles River Valley/South Charles Relief Sewer Gates Controls and Additional Interceptor Connection
- Bulfinch Triangle Sewer Separation
- Brookline Sewer Separation

These projects were included in the revised long-term control plan approved by EPA and DEP in March 2006 and were incorporated into Schedule Seven by the Court in April 2006. Together with projects in the original plan, they are predicted to reduce treated CSO discharges at the Cottage Farm facility to 2 activations and 6.3 million gallons in a typical year, compared to the 1997 goals of 7 activations and 23 million gallons. Most of the benefit comes from optimization improvements that direct more wet weather flow to MWRA's Ward St. Headworks and reduce overflows into the treatment facility. The targeted sewer separation projects will lower wet weather flows to the system, offsetting any hydraulic impacts of directing more flow to the headworks. The Bulfinch Triangle and Brookline sewer separation projects are discussed in Section 6.2.

Brookline Connection/Cottage Farm Overflow Chamber Interconnection and Gate Control

One set of the additional CSO optimization improvements includes measures to minimize treated discharges at the Cottage Farm CSO facility by controlling overflows into the facility, by increasing flow conveyance to the Ward St. Headworks, and by taking advantage of upstream storage capacity in the MWRA North Charles Metropolitan and Metropolitan Relief Sewers in Cambridge.

These measures, shown in Figure 8, include: bringing into operation the historically un-utilized 54-inch "Brookline Connection" that crosses beneath the Charles River from the Cottage Farm influent chamber (on the Cambridge side of the Charles River) to an improved connection with the South Charles Relief Sewer (on the Boston side of the river); developing gate controls and a control system to optimize and potentially automate the operation of the existing Cottage Farm influent gates; providing a piped interconnection between the two overflow chambers outside the Cottage Farm facility; and optimizing the overflow weir settings within the chambers.

The Brookline Connection was one of three pipes constructed in 1970 across the Charles River as part of the construction of the Cottage Farm facility. It was intended to carry excess flows from Brookline to Cottage Farm during large storms, but became unnecessary before being brought on line because sewer separation programs in Brookline had reduced flows to a greater extent than earlier predicted. In 2005, MWRA opened up and inspected the 54-inch diameter pipe for the first time since it was constructed and found it to be in excellent condition. The current project calls for utilizing the pipe in reverse direction, carrying wet weather flows away from Cottage Farm, toward Brookline and Ward St. Headworks.

Figure 8
 Cottage Farm Brookline Connection and Inflow Controls

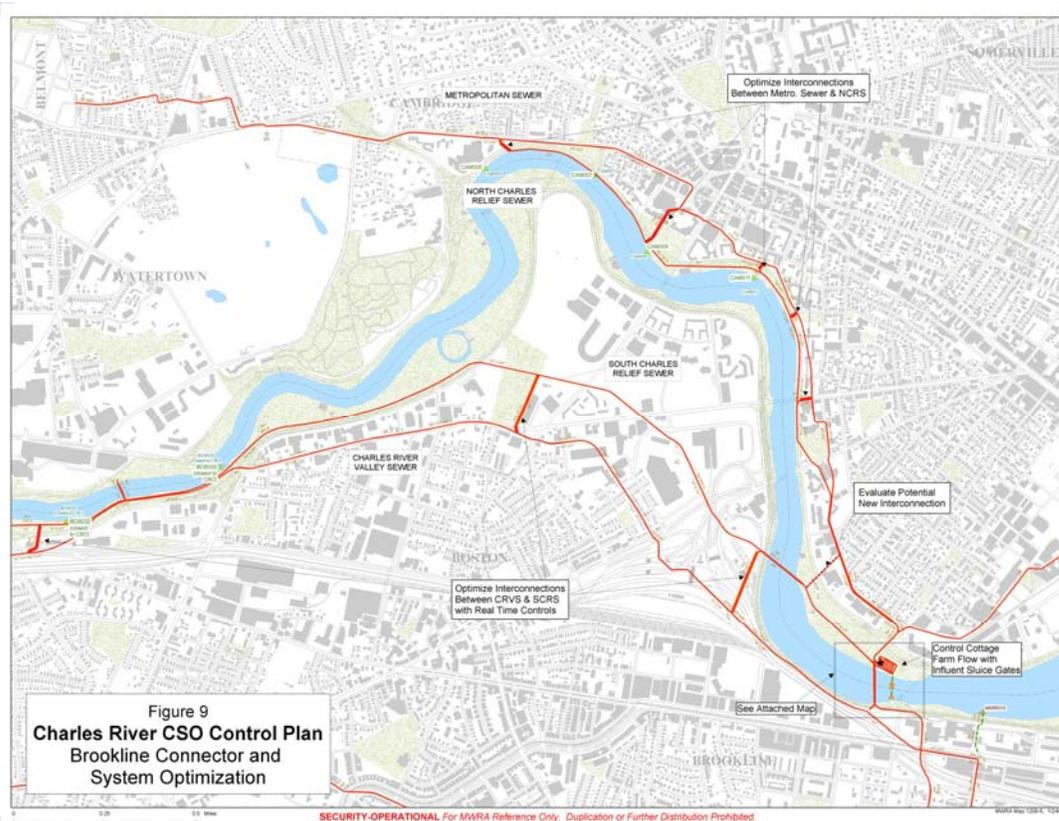


MWRA issued the Notice to Proceed with the design contract on September 30, 2006, in compliance with Schedule Seven. Design work to date has involved preparation of work plans for design execution, QA/QC, Local Safety, hydraulic modeling, geotechnical engineering and hazardous materials. A wetlands delineation report has been completed, hydraulic modeling is ongoing, and the geotechnical/hazardous materials field investigations and sewer systems inspections are nearly complete. Preliminary design is underway. The contract calls for the preliminary design report to be completed by August 2007.

Charles River Valley/South Charles Relief Sewer Gates Controls and Additional Interceptor Connections

This set of improvements to reduce Charles River CSOs includes measures to optimize flows among the four interceptors that convey flow to the Ward St. Headworks and can overflow to the Cottage Farm facility. The measures include developing an operational strategy for optimizing the transfer and allocation of flows between the Charles River Valley Sewer and the South Charles Relief Sewer using existing gates located at three connections between these interceptors, (see Figure 9 below). MWRA will also evaluate the feasibility of improving hydraulic performance along the North Charles Metropolitan Sewer and the North Charles Relief Sewer with new connections or modified existing connections between these interceptors and by adjusting overflow regulators along the interceptors.

MWRA will commence the design of the gate controls and the evaluation of additional interceptor connections under one contract in January 2008, in compliance with Schedule Seven. Schedule Seven also requires MWRA to submit a report on the evaluation of additional connections by January 2009, commence construction of the interceptor gate controls by January 2010, and complete construction of the gate controls by January 2011.



6.2 Community Managed Projects

SOUTH DORCHESTER BAY SEWER SEPARATION

	<u>Court Milestone</u>	<u>Project Schedule</u>
Commence Design	June 1996	June 1996
Commence Construction	April 1999	April 1999
Complete Construction	November 2008	2007

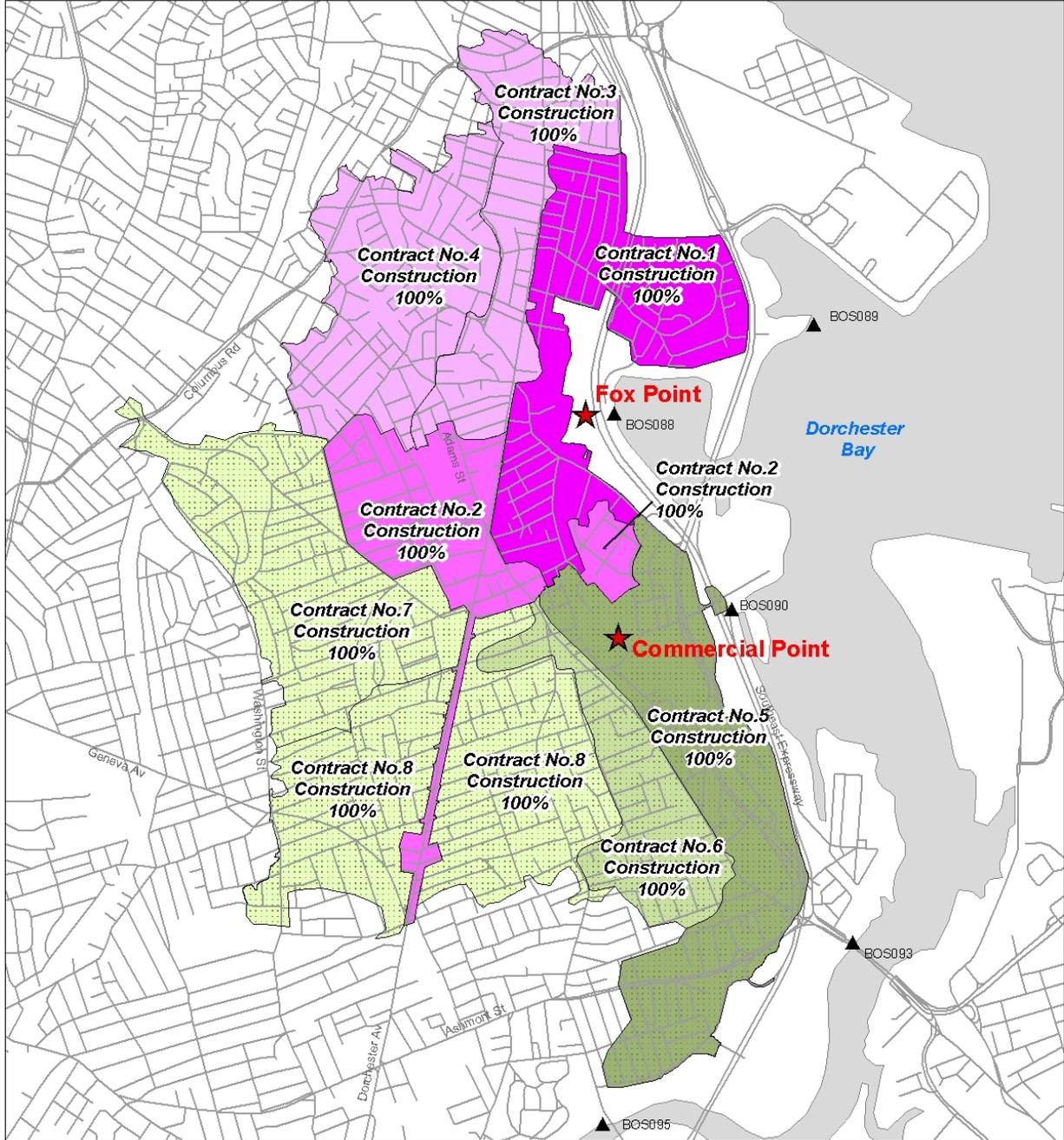
This project, at a cost of \$118.2 million, is intended to eliminate CSO discharges to South Dorchester Bay (originally 30 million gallons discharged 20 times per year) by separating combined sewer systems in Dorchester. The separation work primarily involves the construction of new storm drains and appurtenant structures, relocation of stormwater runoff connections from the existing combined sewer to the new storm drains, and rehabilitation of the existing combined sewers for use as sanitary sewers. The plan calls for approximately 136,000 linear feet of new storm drains. BWSC is implementing the project with MWRA funds.

Figure 10 and Table 5 show the project's design and construction progress. Schedule Seven requires a construction progress rate of 10% per year from the commencement of construction in April 1999. As of December 2006, construction was 99% complete, measured as linear feet of installed storm drains, compared to the court required level of 80% for the same period. BWSC installed 14,804 linear feet of new storm drains in 2006 alone, 11% of the total to be installed. In February 2007, BWSC attained substantial completion on the last of the sewer separation contracts for this project.

Disconnection of downspouts from the combined sewer systems is necessary to remove enough stormwater from the sewers to meet CSO control goals, in this case elimination. The initial downspout disconnection contract for Dorchester, which also included downspout disconnection work in other CSO project areas, such as Jamaica Plain (Stony Brook project), Neponset, and East Boston (Constitution Beach project), was completed in 2004. The second downspout disconnection contract for the Dorchester area was awarded in late 2004 and will continue through 2007. Downspout disconnections in this area are more than 50% complete. Also, BWSC has completed two of the three project-related street paving contracts. The third and final paving contract commenced in 2005 and will remain active through 2007.

Over the course of construction beginning in April 1999, BWSC awarded 16 construction contracts (sewer separation, downspout removal and paving) to complete the South Dorchester Bay sewer separation project. BWSC has completed the sewer separation contracts. Sewer separation does not remove 100% of the storm inflow. The key objective of this project is to reduce enough storm inflow (up to 90%), so that the sewer system can carry the sewage flows and remaining storm inflow without the need for the hydraulic relief that was historically provided by the CSO regulators. BWSC is now conducting flow monitoring and system performance evaluations to determine whether the CSO regulators can be closed without system flooding in large storms. BWSC is studying the potential need for additional hydraulic relief and expects to complete this evaluation by the summer of 2007. MWRA is hopeful that BWSC will determine that the hydraulic goals of the project have been attained and that the regulators can be closed this year. This would allow the goals and benefits of the South Dorchester Bay project to be achieved ahead of the November 2008 milestone in Schedule Seven, and would allow MWRA to decommission the CSO facilities at Commercial Point and Fox Point earlier than originally scheduled.

Figure 10
South Dorchester Bay Sewer Separation



Contract 1 - Sewer separation complete
 Contract 2 - Sewer separation complete
 Contract 3 - Sewer separation complete
 Contract 4 - Sewer separation complete

Contract 5 - Sewer separation complete
 Contract 6 - Sewer separation complete
 Contract 7 - Sewer separation complete
 Contract 8 - Sewer separation 100% complete

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**Annual Progress of MWRA/BWSC Drain Installed in Dorchester
 088/089 and 090 Areas**

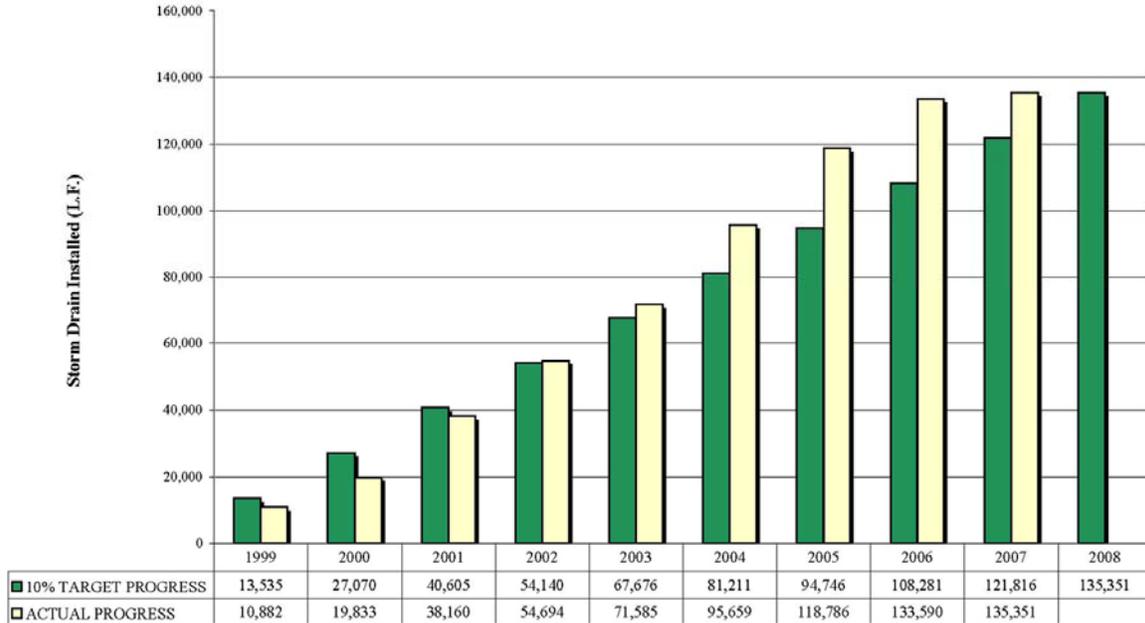


Table 5 South Dorchester Bay Sewer Separation Progress

Construction Contract	Total Linear Ft. Storm Drain	NTP	Percent Complete											
			Thru 2002		Thru 2003		Thru 2004		Thru 2005		Thru 2006		1st Q 2007	
			Design	Construction	Design	Construction	Design	Construction	Design	Construction	Design	Construction	Design	Construction
1	15,770	Apr-99	100	100	100	100	100	100	100	100	100	100	100	100
2	15,666	Sep-00	100	91	100	100	100	100	100	100	100	100	100	100
3	19,005	Dec-02	100	0	100	42	100	95	100	100	100	100	100	100
4	20,890	Apr-04	75	0	100	0	100	30	100	78	100	100	100	100
5A	865	May-00	100	100	100	100	100	100	100	100	100	100	100	100
5	7,936	Apr-99	100	100	100	100	100	100	100	100	100	100	100	100
6	16,669	Aug-01	100	68	100	100	100	100	100	100	100	100	100	100
7	19,530	Dec-02	100	8	100	32	100	68	100	94	100	100	100	100
8	19,020	Sep-04	20	0	100	0	100	3	100	40	100	91	100	100
TOTAL	135,351		88%	37%	100%	53%	100%	70%	100%	87%	100%	99%	100%	100%
Related Contracts														
9	-	TBD	15	0	15	0	15	0	15	0	15	0	15	0
10	-	Nov-02	50	0	100	0	100	100	100	100	100	100	100	100
Paving 1	-	Jun-99	100	75	100	90	100	100	100	100	100	100	100	100
Paving 2	-	Feb-03	75	0	100	0	100	22	100	78	100	100	100	100
Paving 3	-	Oct-05	75	0	75	0	100	0	100	0	100	52	100	52
Downspout Removal	-	Mar-03	75	0	100	0	100	0	100	25	100	58	100	60

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STONY BROOK SEWER SEPARATION

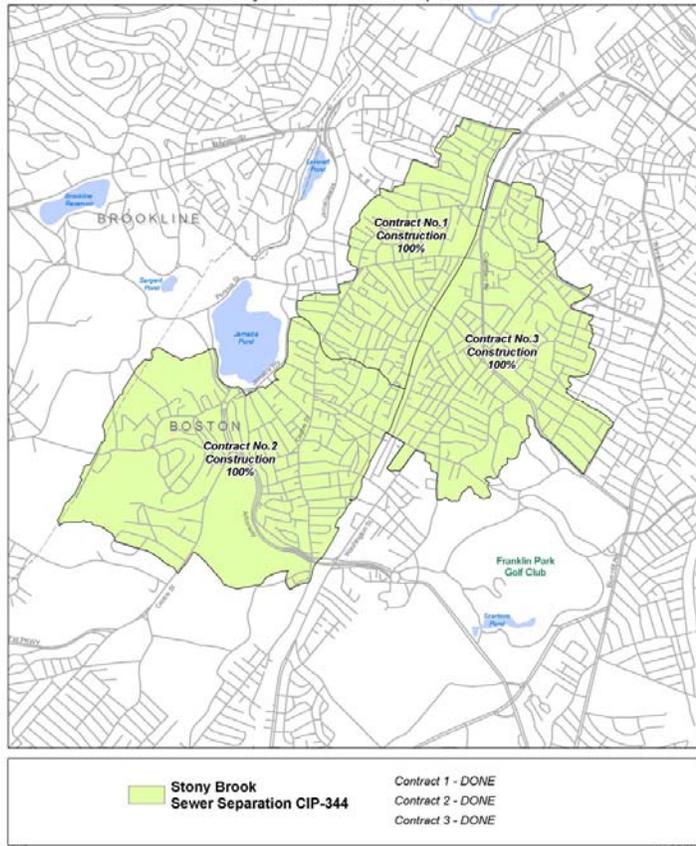
	<u>Court Milestone</u>	<u>Project Schedule</u>
Commence Design	July 1998	July 1998
Commence Construction	July 2000	July 2000
Complete Construction	September 2006	September 2006

This project, at a cost of \$45 million, is intended to minimize CSO discharges to the Stony Brook Conduit and the Back Bay Fens, both of which drain to the Charles River, by separating combined sewers in parts of Roxbury and Jamaica Plain. The separation work involves the installation of approximately 73,300 linear feet of new storm drains. BWSC is implementing the project with MWRA funds.

In September 2006, BWSC completed the last of the three sewer separation contracts, in compliance with Schedule Seven. Figure 11 shows the project area covered by each of the construction contracts. BWSC is now conducting flow monitoring and system performance evaluations to verify that the required level of CSO control has been achieved. The project was intended to reduce CSO discharge at seven CSO regulators along the Stony Brook Conduit from 22 activations and 44.5 million gallons in a typical year (a discharge level that had been attained in 2000 with completion of pumping and treatment improvements at Deer Island) to 2 activations and 0.13 million gallons. While this represents a 99.7 % reduction in annual CSO volume, the CSO regulators must remain open to provide flood control in large storm events.

In 2007, BWSC will continue work to repave streets and remove downspouts from the sewer system. Downspout disconnections in this area are 85% complete.

Figure 11
 Stony Brook Sewer Separation



FORT POINT CHANNEL BOS072-073 SEWER SEPARATION

	<u>Court Milestone</u>	<u>Project Schedule</u>
Commence Design	July 2002	July 2002
Commence Construction	March 2005	March 2005
Complete Construction	March 2007	March 2007

This project, at a cost \$7.7 million, is intended to eliminate CSO discharges in a typical year at outfalls BOS072 and BOS073 (Figure 12). The separation work primarily involves the construction of new storm drains and appurtenant structures, relocation of storm runoff connections from the existing combined sewer to the new storm drains, and rehabilitation of the existing combined sewers for use as sanitary sewers. The plan calls for approximately 4,550 linear feet of new storm drains. BWSC is implementing the project with MWRA funds.

BWSC commenced construction of a portion of the sewer separation work in March 2005, in compliance with the milestone in Schedule Seven. In September 2005, BWSC commenced a second contract involving the bulk of the project work. This contract is approximately 98% complete. Construction is scheduled to be completed by March 2007, in compliance with Schedule Seven.



NEPONSET RIVER SEWER SEPARATION

This project involved sewer separation in the Neponset section of Dorchester, to eliminate CSO discharges to the Neponset River at outfalls BOS093 and BOS095. The separation work included construction of approximately 10,000 feet of new storm drain. BWSC performed the work with MWRA funding. The project cost was \$2.7 million.

BWSC completed storm drain construction and closed the last remaining CSO outfall to the Neponset River in June 2000. It continues to perform downspout disconnection and other work to remove additional stormwater inflow from the sewer system, in order to minimize the risk of surcharging and flooding. In 2004, BWSC completed a substantial contract to remove inflow sources from sewer systems in the Neponset area. This work further reduced the amount of stormwater in the sewer system by removing non-residential, private drainage connections, such as connections from private parking lots.

CONSTITUTION BEACH SEWER SEPARATION

This project involved sewer separation in a section of East Boston to eliminate CSO discharges at the Constitution Beach CSO facility (outfall BOS002/MWR207). The separation work included construction of approximately 14,000 feet of new storm drain. BWSC performed the work with MWRA funding. The project cost was \$3.8 million.

BWSC completed storm drain construction and closed the last remaining CSO regulator in September 2000, and MWRA decommissioned the Constitution Beach CSO Facility soon after. MWRA has transferred the site to the control of the Division of Capital Asset Management.

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MORRISSEY BOULEVARD STORM DRAIN

	<u>Court Milestone</u>	<u>Project Schedule</u>
Commence Design	June 2005	June 2005
Commence Construction	December 2006	December 2006
Complete Construction	June 2009	June 2009

A component of the North Dorchester Bay CSO control plan, the Morrissey Boulevard storm drain project, shown in Figure 13 below, is intended to direct some of the North Dorchester Bay stormwater away from MWRA’s CSO storage tunnel in storms greater than the 1-year design storm. Redirecting these stormwater flows to Savin Hill Cove and South Dorchester Bay in large storms reserves capacity in the MWRA tunnel to attain a 5-year level of stormwater control along the South Boston beaches in addition to a 25 year level of CSO control. BWSC commenced design of the Morrissey Boulevard storm drain in June, in compliance with Schedule Seven. The work is being managed by BWSC with MWRA funding.

MWRA and BWSC added the Morrissey Boulevard storm drain project to their CSO Memorandum of Understanding and Financial Assistance Agreement in May 2005, and BWSC commenced design work in June 2005, in compliance with Schedule Seven.

On December 26, 2006, BWSC issued the Notice to Proceed with the first of two planned construction contracts for the Morrissey Boulevard storm drain project, in compliance with Schedule Seven. The first contract involves construction of the diversion chamber that will allow stormwater flows now discharging to the South Boston beaches at outfall BOS087 to be diverted to Savin Hill Cove in storms greater than the 1-year design storm. BWSC expects to issue the notice to proceed for the second construction contract, which will include the 2,900 foot long Morrissey Boulevard storm drain conduit, in July 2007, subject to BWSC receiving all necessary permits. BWSC is currently making every effort to address outstanding permitting issues and to have all permits in place by July 2007. BWSC’s latest cost estimate for this project, \$33 million, is considerably higher than previously estimated and budgeted.



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RESERVED CHANNEL SEWER SEPARATION

	<u>Court Milestone</u>	<u>Project Schedule</u>
Commence Design	July 2006	July 2006
Commence Construction	May 2009	May 2009
Complete Construction	December 2015	December 2015

This project, at a cost of \$59.2 million, is intended to minimize CSO discharges to Reserved Channel by separating combined sewer systems in a portion of South Boston (see Figure 14 below). Implementation of the recommended sewer separation plan will reduce the number of overflows to Reserved Channel from as many as 37 to 3 in a typical year.

In April 2001, MWRA filed a Notice of Project Change with MEPA, recommending a reassessment of the overall CSO control approach for North Dorchester Bay and Reserved Channel. The Secretary’s Certificate, issued in June, approved the reassessment as scoped by MWRA. MWRA began the reassessment in September 2001, which included updating planning assumptions and water quality information and evaluating a full range of CSO control goals and technologies. The reassessment completed in April 2004, when MWRA filed the Supplemental Facilities Plan and Environmental Impact Report for North Dorchester Bay and the Reserved Channel, recommended a new plan which included sewer separation in the area tributary to Reserved Channel.

MWRA and BWSC added this project to their CSO MOU and Financial Assistance Agreement in June 2006. BWSC will be responsible for managing design and construction of the project and ensuring that CSO control goals and other project objectives are met. MWRA will fund design and construction costs, pursuant to the eligibility terms of the agreement. BWSC commenced design in July 2006, in compliance with Schedule Seven. The design work and construction contracts for the Reserved Channel sewer separation project will likely follow an approach similar to the South Dorchester Bay and Stony Brook sewer separation projects, with multiple construction contracts sequenced over several years. BWSC is currently in the data collection phase with field investigations, building inspections, geotechnical investigations and flow metering being performed. The current schedule calls for submission of the preliminary design report by December 2007. Final design will commence in January 2008, with start of construction by May 2009.



BULFINCH TRIANGLE SEWER SEPARATION

	<u>Court Milestone</u>	<u>Project Schedule</u>
Commence Design	November 2006	November 2006
Commence Construction	November 2008	November 2008
Complete Construction	July 2013	July 2013

The goal of the \$4.4 million Bulfinch Triangle sewer separation project is to minimize CSO discharges to the Charles River by separating combined sewer systems in the area of Boston roughly bounded by North Station, Haymarket Station, North Washington St., Cambridge St. and immediate environs (see Figure 15). Implementation of the recommended sewer separation plan will reduce the number of overflows to the Charles River, reduce overflows to the Prison Point CSO facility and close outfall BOS049.

MWRA and BWSC added this project to their CSO MOU and Financial Assistance Agreement in October 2006. BWSC will be responsible for managing design and construction of the project and ensuring that CSO control goals and other project objectives are met. MWRA will fund the design and construction costs, pursuant to the eligibility terms of the agreement.

BWSC awarded the contract for design services, and issued the notice to proceed on August 28, 2006 in advance of the Schedule Seven milestone of November 2006. Field investigations, building inspections, survey work, as well as public outreach is ongoing. A preliminary design report is expected in spring 2007.

BROOKLINE SEWER SEPARATION

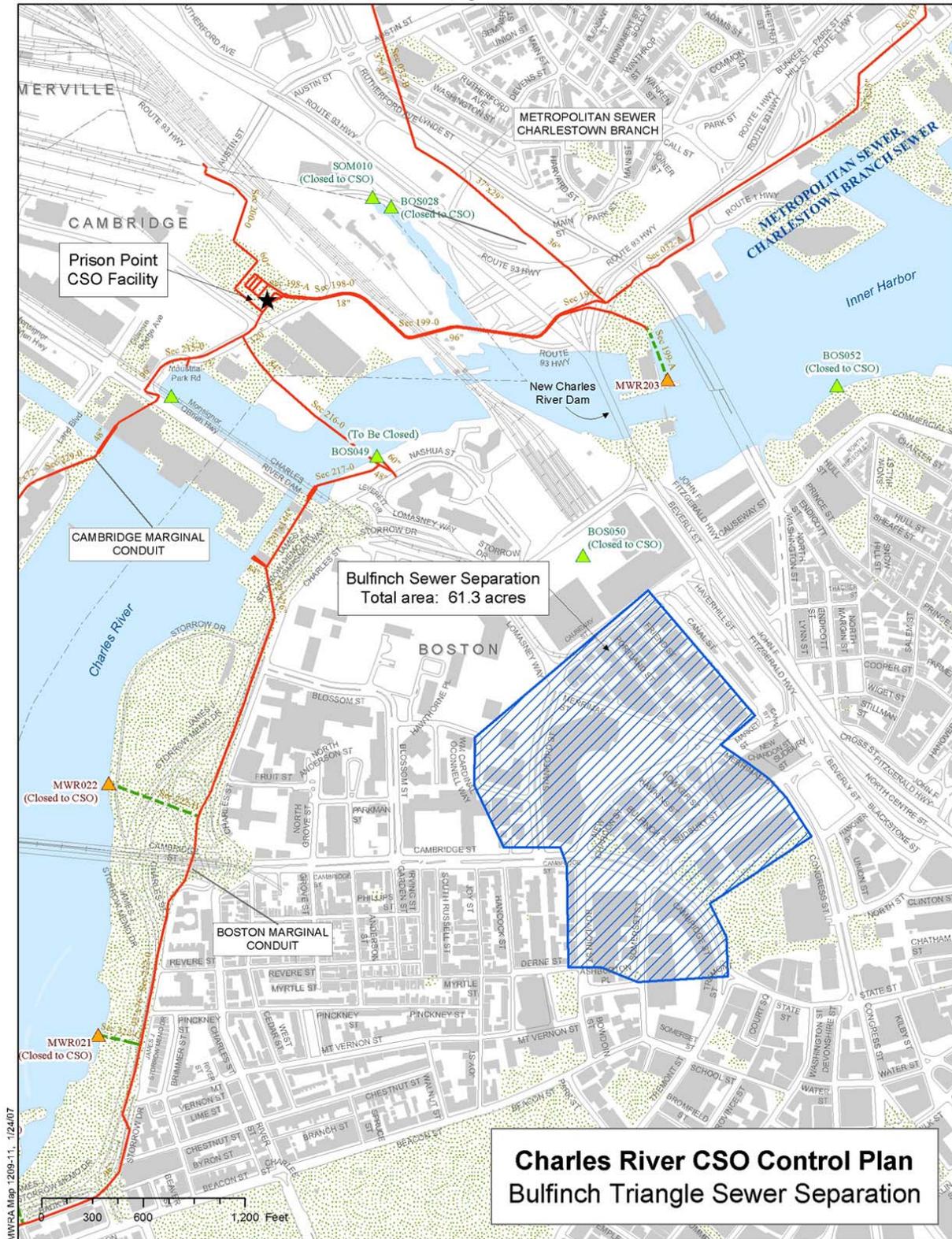
	<u>Court Milestone</u>	<u>Project Schedule</u>
Commence Design	November 2006	November 2006
Commence Construction	November 2008	November 2008
Complete Construction	July 2013	July 2013

The \$9.0 million Brookline sewer separation project is intended to separate remaining areas of Brookline, totaling 71.2 acres, that have combined sewers tributary to MWRA's Charles River Valley Sewer (see Figure 16). The project is intended to reduce discharges to the Charles River at the Cottage Farm facility.

MWRA and the Town of Brookline executed a CSO Memorandum of Understanding and Financial Assistance Agreement in July 2006. Brookline will be responsible for managing design and construction of the project and ensuring that CSO control goals and other project objectives are met. MWRA will fund the design and construction costs, pursuant to the eligibility terms of the agreement. Brookline advertised for and received proposals for the design services phase of this project. Brookline awarded the engineering services contract and issued the notice to proceed on November 30, 2006 in compliance with Schedule Seven. Field investigations and other preliminary design activities are ongoing.

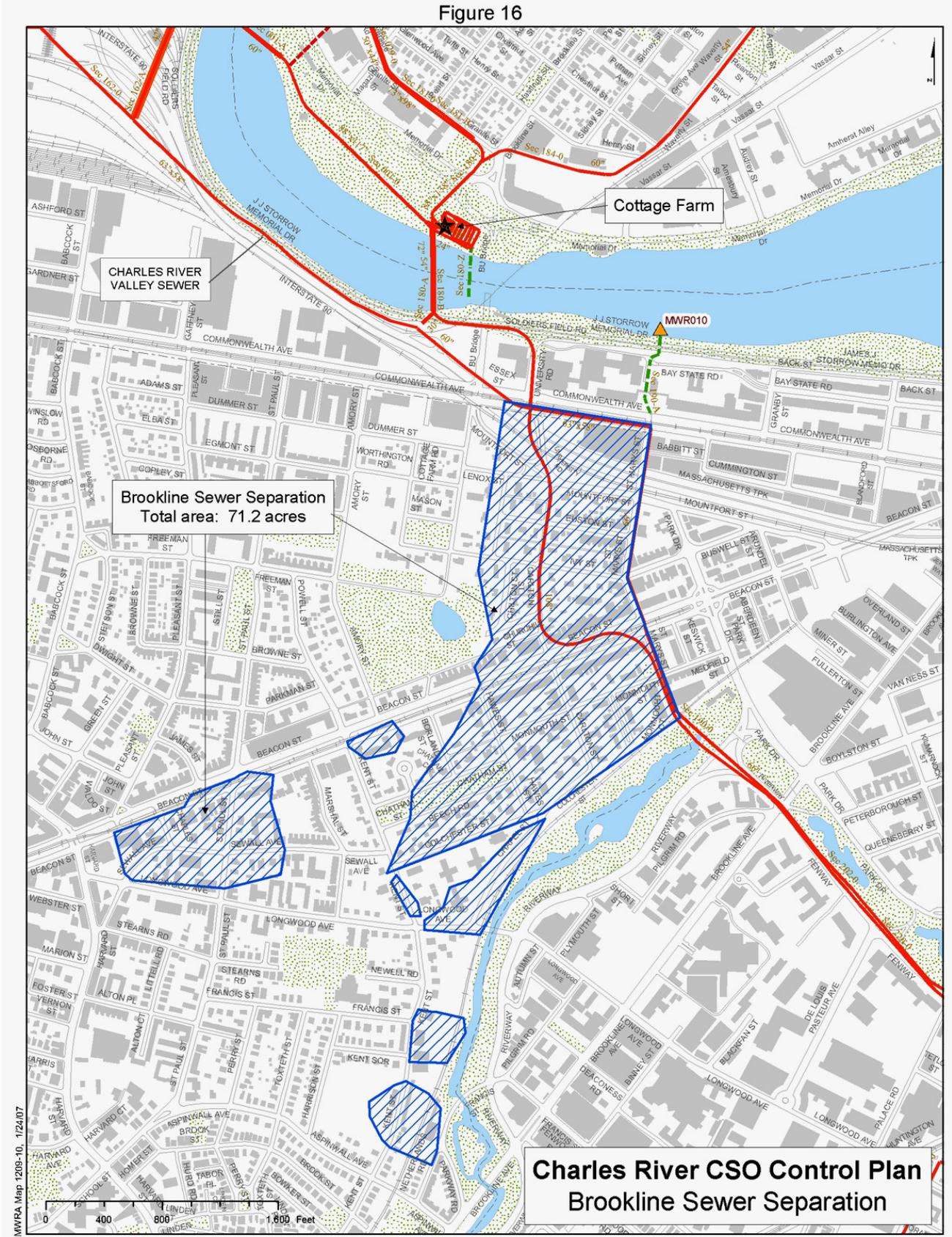
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Figure 15



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Figure 16



ALEWIFE BROOK CSO CONTROL PLAN PROJECTS

Background on the Revised Plan for Alewife Brook Sewer Separation

This project is intended to minimize CSO flows to Alewife Brook, primarily by separating combined sewer systems in parts of Cambridge, but also by upgrading hydraulic capacities at local connections to the MWRA interceptors. A stormwater basin and new stormwater outfall will be constructed to accommodate the separated stormwater flows, prevent any increase in flooding levels along Alewife Brook and provide a level of stormwater treatment. Most of the design and construction work is being done by the City of Cambridge with MWRA funding, under a Memorandum of Understanding and Financial Assistance Agreement. Cambridge began construction of the sewer separation plan in July 1998, in accordance with the recommended plan in the 1997 Facilities Plan/EIR and in compliance with the original set of milestones for this project in the court schedule. Cambridge completed all four of the construction contracts it awarded at that time. The completed work significantly reduced CSO discharges to Alewife Brook. Hydraulic model simulations show that CSO discharges were reduced from 63 activations and 50 million gallons annual volume in a typical year to 25 activations and 33 million gallons annual volume.

In 2000, MWRA and Cambridge suspended further design work and construction contract awards related to the 1997 plan because new information showed that conditions in the Cambridge combined sewer system were markedly different from conditions assumed in 1997. MWRA and Cambridge determined that considerably more work, as well as changes to the scope of work, would be necessary to meet the 1997 CSO control goals for Alewife Brook. In April 2001, MWRA and Cambridge submitted a Notice of Project Change for public review recommending an expanded and much more costly sewer separation plan to meet those goals. The Secretary's Certificate on the Notice of Project Change, issued in June 2001, required MWRA and Cambridge to prepare a document responding to all public comments, including comments related to the feasibility of obtaining necessary federal and state permits and other approvals to build the project. In May 2003, MWRA and the City of Cambridge submitted a response to MEPA, addressing all public comments. The Response to Comments was two years in the making and involved extensive interactions with regulatory agencies, community officials in Arlington, Belmont and Cambridge, DCR and the public.

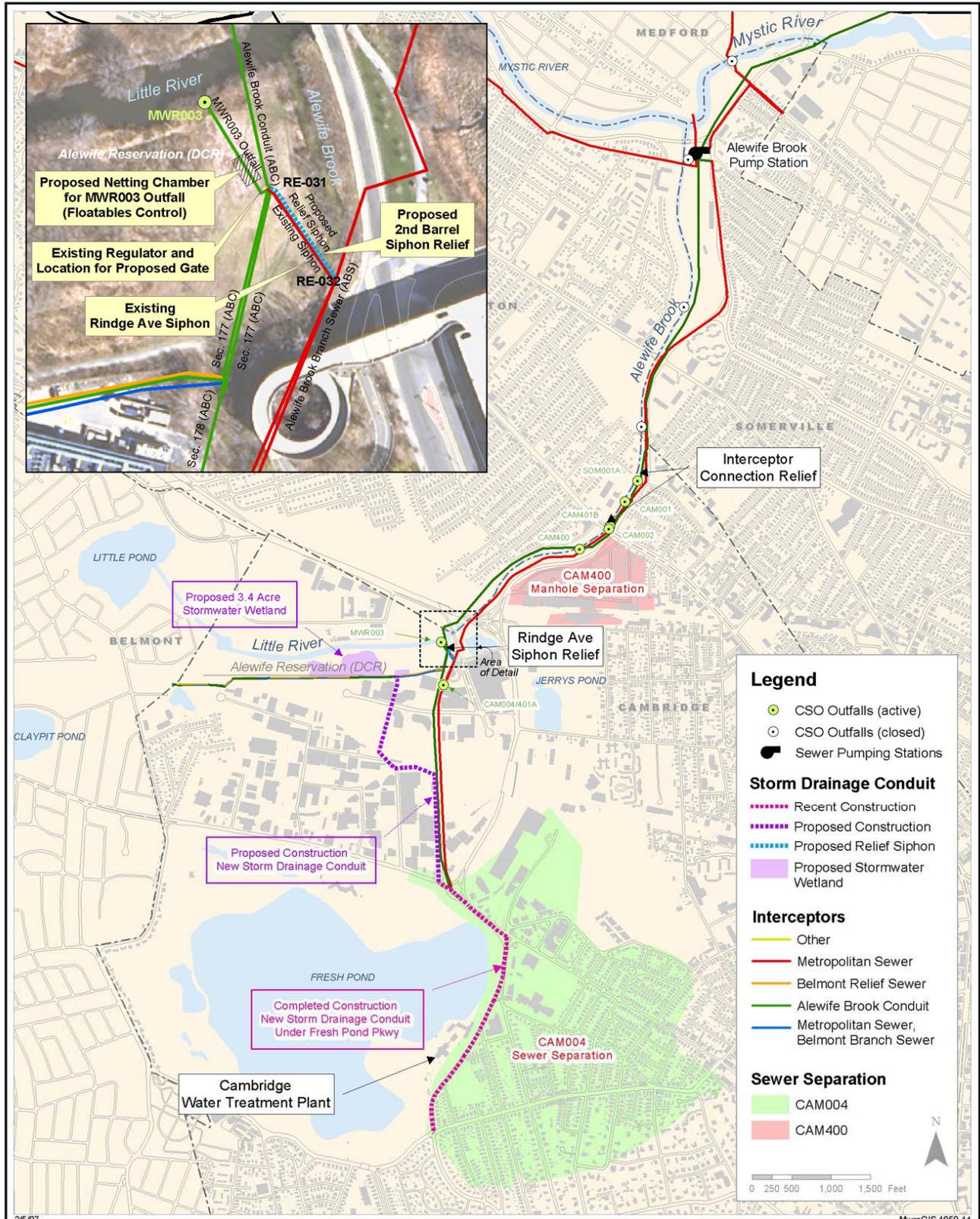
The Response to Comments also presented a final project plan that incorporated adjustments made during the public review process to address the various concerns that had been raised. In particular, significant adjustments were made to Cambridge's proposed stormwater system and wetland basin to ensure that the stormwater flows generated by the sewer separation work will have no adverse effect on Alewife Brook flood elevations and that the wetland basin will contribute to the ecological and recreational goals in DCR's Master Plan for the Alewife Reservation. Submission of the Response to Comments document effectively marked completion of the MEPA review process for this project, allowing MWRA and Cambridge to move the project into design and construction.

The Revised Plan for Alewife Brook

The revised plan for CSO control along Alewife Brook comprises several component projects that were individually incorporated into the court schedule in April 2006. Shown in Figure 17, they include:

- CAM004 Stormwater Outfall and Detention Basin (Contract 12)
- CAM004 Sewer Separation
- CAM400 Manhole Separation
- Interceptor Connection Relief and Floatables Control at CAM002, CAM401B, and SOM01A, and Floatables Control at CAM001

Figure 17
Alewife Brook CSO Control - Revised Plan



- Control Gate/Floatables Control at Outfall MWR003 Gate and MWRA Rindge Avenue Siphon Relief.

Together, these projects are intended to reduce CSO discharges to the Alewife Brook to 7 activations in a typical year.

Schedule and Cost Concerns

After completion of MEPA review in 2003, Cambridge updated its preliminary design plans to reflect several additional project modifications that resulted from MEPA review, public comments and new field information. Cambridge has also updated its design and construction schedules and cost estimates. While updating the plans, Cambridge also pursued final design on “Contract 12,” which involves construction of the wetland basin and new storm drain outfall in the Alewife Reservation and is key to the overall plan and necessary for remaining contracts to move forward.

Cambridge’s progress on Contract 12 was suspended and is further delayed by the ongoing appeal of DEP’s approval for the wetlands basin, pursuant to the Wetlands Protection Act. Cambridge received a Superseding Order of Conditions for Contract 12 from DEP on March 31, 2005. The appeal was filed by a group of citizens on April 13, 2005. The state’s Division of Administrative Law Appeals (DALA) issued summary decisions on the appeal in late 2006. Cambridge is now hopeful that a final decision will be made over the next few months, allowing Cambridge to move forward with remaining final design of Contract 12 toward a construction start by the summer of 2008, one year later than the milestone in Schedule Seven. Because Contract 12 is a core, early component of the Alewife recommended plan, the other Alewife related projects being implemented by Cambridge and MWRA have been similarly delayed, including CAM400 manhole separation; interceptor connection relief and floatables control at CAM002, CAM401B, SOM01A and CAM001; and CAM004 sewer separation, for which the July 2006 design start milestones were not met. At this time, MWRA estimates that all of the Alewife projects have experienced a delay of at least one year beyond the Schedule Seven milestones due to the ongoing appeal.

The cost of the Alewife Brook CSO control plan was last updated in December 2004, in Cambridge’s Draft Second Supplemental Preliminary Design Report (“SSPDR”), which provided an update on the work plans, design and construction contract requirements, schedules and costs for the Alewife projects. The SSPDR showed that the total project cost for the Alewife plan and for Cambridge floatables control would be at least \$94 million, compared to the estimate of \$74 million in the 2001 Notice of Project Change, though the general scope of work and level of CSO control had not changed.

MWRA remains greatly concerned that cost estimates have risen significantly, especially in light of continued delay caused by appeals to the wetlands permit for Contract 12. The \$74 million estimate, developed with the 2001 Notice of Project Change, was itself a huge cost increase from the original 1997 CSO plan estimate of \$13.8 million (the \$13.8 million plan is what MWRA originally agreed to in the court schedule). MWRA has not negotiated a revised agreement with Cambridge concerning the increase in total cost and potential cost sharing until the permit appeal is resolved and both parties can identify total cost, including construction inflation due to schedule impacts.

MWRA Improvements at Outfall MWR003 and Rindge Avenue Siphon

While a majority of the revised Alewife Brook CSO control plan is being implemented by the City of Cambridge with MWRA financial assistance, a portion of the plan dealing directly with MWRA sewers and an MWRA CSO outfall will be designed and constructed by MWRA. This work involves installing an automated hydraulic relief gate and associated controls at the overflow weir associated with outfall

MWR003; installing floatables control for this outfall, consisting of an in-line netting structure; and relieving a 30-inch MWRA siphon that interconnects the two MWRA interceptors (the Alewife Brook Sewer and the Alewife Brook Conduit) that parallel Alewife Brook and convey wastewater from parts of Belmont, Arlington, Cambridge and Somerville. The design work is not scheduled to commence until April 2010, because this work is dependent upon Cambridge completing Contract 12.

6.3 Region-wide Floatables Control and Outfall Closing Projects

	<u>Court Milestone</u>	<u>Project Schedule</u>
Commence Design	September 1996	September 1996
Commence Construction	March 1999	March 1999
Complete Construction		
Most outfall locations	May 2001	May 2001
Cambridge Charles River	December 2007	December 2007

The 1997 Facilities Plan/EIR called for the control of floatable materials in all remaining CSO discharges, in accordance with EPA’s National CSO Policy. Floatables controls will be installed at most of the remaining active CSO outfalls as part of the larger CSO control projects described above. For instance, the Chelsea Trunk Sewer Relief project included the installation of underflow baffles for floatables control at outfalls CHE002, CHE003 and CHE004.

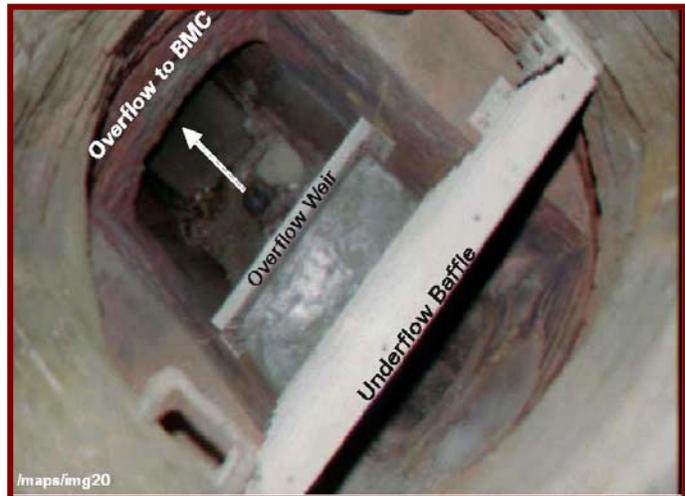
The Region-wide Floatables Control and Outfall Closing Projects described in the following sections involve floatables controls and regulator or outfall closings that are independent of the larger projects. MWRA, BWSC, Cambridge and Somerville are responsible for implementing these controls in their respective systems. MWRA met the March 1999 milestone for commencement of construction with work at outfalls MWR018-022. Schedule Six required the completion of all related construction work by May 2001.

MWRA Floatables Control at Outfalls MWR018–020 and Outfall Closings at MWR021-022

CSO outfalls MWR018, 019, 020, 021 and 022 conveyed overflows from MWRA's Boston Marginal Conduit to the Lower Charles River Basin in very large storms. The project called for closing outfalls 021 and 022 and providing floatables control at the remaining locations. The plan for floatables control involved the installation of underflow baffles at eleven CSO regulator structures upstream of outfalls 018-020.

MWRA completed the installation of underflow baffles in four of the eleven BWSC regulators (MC-12, MC-15, MC-19 and MC-25) in late 1999. In March 2000, MWRA closed outfalls MWR021 and MWR022 to CSO discharges.

During preliminary design of floatables control at the seven remaining CSO regulators, which were located in the Old Stony Brook Conduit System, it was determined that the installation of underflow baffles at these regulators would be difficult and potentially prohibitive due to extensive construction requirements, construction impacts and cost.



Based on new information describing the construction difficulties and showing that outfalls MWR018, 019 and 020 only rarely activate, MWRA was relieved of the requirement to install floatables control devices at these outfalls. Instead, DEP required MWRA to take certain actions to keep activations low and to confirm that activation frequencies at these outfalls were consistent with predictions. On an annual basis, MWRA reviews meter data to confirm the predicted performance, and has consistently seen that activation frequencies at these outfalls are rare, as predicted.

CSO Control at Outfall MWR010

In April and May 2001, MWRA submitted reports to EPA and DEP on studies it conducted to reassess CSO discharges at outfall MWR010. The scope of the reassessment included updating the hydraulic model of the combined sewer systems affecting this outfall, evaluating the feasibility of closing the outfall to CSO discharges, and recommending measures to minimize discharges if the outfall could not be closed.

Results of the reassessment showed that the outfall did not discharge CSO in a typical rainfall year. Furthermore, CSO discharges could be reduced to the level of not occurring up to a 5-year storm by bringing back into service a blocked connection between the Town of Brookline and MWRA systems. The reports also concluded that MWR010 should not be permanently closed, since closure of the outfall was predicted to result in upstream flooding during extreme storms.

On October 29, 2002, DEP issued its approval, subject to MWRA and Brookline maintaining the dry weather connection in an operable condition. In addition, DEP requested that MWRA evaluate further system optimization measures to minimize CSO discharges at MWR010 and at the hydraulically connected Cottage Farm CSO facility and implement Best Management Practices in the tributary area to minimize wet weather pollutant loadings. The results of initial system optimization evaluations were reported in the *Cottage Farm CSO Facility Assessment Report* in January 2004, which also described ongoing work by the Town of Brookline to separate sewers, which will enhance CSO control at MWR010 and at Cottage Farm. MWRA tracks the performance of the reactivated Brookline connection by reviewing upstream velocity and depth data collected by a permanent flow meter.

BWSC Floatables Control

Floatables control included in this project involved the installation of underflow baffles in ten existing CSO regulator structures associated with outfalls along Boston Inner Harbor and Fort Point Channel. BWSC designed and constructed the project, and MWRA funded costs. BWSC completed the last of the ten installations in 2002.

Cambridge Floatables Control

This work involves providing floatables control at eight outfalls located along Alewife Brook and the Charles River in Cambridge. Since Cambridge will be responsible for the operation and maintenance of its floatables control devices, MWRA has agreed to allow Cambridge to install devices of its choice, provided they meet the level of floatables control that would be achieved by MWRA's recommended plan. At four locations along Alewife Brook (CAM400 is no longer included, as this outfall will instead be closed), the floatables controls are being designed and installed in conjunction with the Cambridge/Alewife Brook sewer separation project.

These controls were included in the various regulatory filings on the Alewife sewer separation project and Alewife Brook/Upper Mystic River Variance. As previously reported, Cambridge has completed floatables control at one of these locations, CAM401A, and plans to complete construction at the other Alewife

locations by 2008. Design work is on hold pending resolution of the Contract 12 wetlands appeal.

With respect to Charles River floatables control, Cambridge has commenced final design for providing floatables control at two CSO outfalls it owns and operates (CAM007 and CAM017), with construction scheduled to be completed by December 2007, in compliance with Schedule Seven. Recently, Cambridge temporarily closed two other CSO outfalls (CAM009 and CAM011) on the Charles River that were previously slated for floatables control. Cambridge intends to monitor system conditions near them over the next two years to determine whether they can be permanently closed without adverse hydraulic effect.

Somerville Floatables Control

The 1997 Facilities Plan/EIR called for the control of floatable materials in the CSO discharges at outfall SOM001A (Tannery Brook outfall) by installing an in-line net. This work, like much of the work under Cambridge Floatables Control, is associated with the Cambridge/Alewife Brook sewer separation project. The revised Alewife Brook Plan recommends enlarging the local system connection to the MWRA interceptor at SOM001A, in addition to providing floatables control. MWRA and the City of Cambridge are now developing plans and schedules for design and construction of floatables control at this outfall. In the meantime, the City of Somerville continues to maintain a boom as an interim floatables control measure at this outfall.

However, the plan for floatables control at SOM001A is dependent on the recommendations that will come from studies of the Tannery Brook that Somerville is conducting in compliance with conditions in the Alewife Brook/Upper Mystic River Variance extension issued by DEP in September 2004. Any further work to implement a long term plan for floatables control should consider the results of that study. An interim report was completed in December 2005. Somerville is now conducting further, more detailed, studies toward recommending a long-term plan.

7. Planned CSO Program Activities in 2007

Schedule Seven in the Federal Court Order in the Boston Harbor Case includes six CSO control milestones in 2007. In addition, MWRA continues work to complete the Union Park Detention/Treatment Facility, pursuant to a September 2005 milestone, and the BOS019 CSO Storage Conduit, pursuant to a September 2006 milestone. These eight milestones and related work plans are summarized in Table 5 below. Planned work in 2007 is described below for each receiving water affected by CSOs.

North Dorchester Bay

MWRA plans to make substantial progress with the construction of the North Dorchester Bay storage tunnel. The tunnel boring machine (TBM) has been ordered and is expected to be on site by October 2007. Construction of the mining shaft began in February 2007. Also in 2007, a substantial amount of construction will be undertaken near the six outfalls that will eventually be connected to the tunnel. This work will include relocating the installing utilities, relining certain sections of the outfalls and a section of BWSC's South Boston interceptor, constructing CSO and stormwater diversion structures and constructing the drop shafts at the proposed tunnel connections. MWRA also plans to complete preliminary design and commence final design for the dewatering pump station, force main and remote odor control facility related to the tunnel.

BWSC recently started construction on the first contract for the Morrissey Boulevard storm drain and is finalizing design and acquiring permits and other construction approvals for its remaining, larger contract.

BWSC's plans call for completing the first contract and commencing the second contract in 2007.

South Dorchester Bay

BWSC plans to complete construction of the South Dorchester Bay sewer separation project in 2007 and monitor the new systems to determine whether the CSO regulators can be closed or additional work is necessary. BWSC and MWRA are hopeful that all of the regulators can be closed this year, in advance of the milestone (November 2008) in Schedule Seven.

Fort Point Channel

After experiencing additional delays in 2006, MWRA now expects construction of the Union Park Detention/Treatment Facility to be substantially complete by April 2007, at which time the new CSO storage and treatment portions of the facility will be placed into full operation, improving water quality in Fort Point Channel.

MWRA was able to bring the treatment facility into partial beneficial use on December 31, 2006, when it began to utilize the new detention basins to store up to 1.5 million gallons of CSO flow in each storm causing overflow to the facility. MWRA pumps the stored flows back into the collection system after each storm, for treatment at Deer Island.

BWSC expects to complete construction of the sewer separation and system optimization project at Fort Point Channel outfalls BOS072 and BOS073 by March 31, 2007, in compliance with Schedule Seven.

Inner Harbor

MWRA plans to complete construction of the BOS019 CSO storage conduit by March 31, 2007, allowing MWRA to greatly reduce CSO discharges to the Little Mystic Channel.

Also by March 31, MWRA will submit a report to EPA and DEP and begin to implement a recommended plan for optimizing the hydraulic operation of the Prison Point CSO treatment facility to minimize treated discharges to the Upper Inner Harbor at the Charles River Dam. MWRA will continue to implement the plan in 2007.

Charles River Basin

BWSC has been monitoring flows at the CSO regulators affected by the Stony Brook Sewer Separation project since completing the project in September 2006. BWSC will use the overflow estimates to confirm that the project's performance objectives have been met. The project is intended to reduce CSO discharges to the Stony Brook Conduit and its discharge to the Charles River Basin at outfall MWR023 to two activations and 0.13 million gallons annual volume in a typical year. BWSC expects to complete its evaluation later this year.

BWSC also plans to make design progress on the Bulfinch Triangle Sewer Separation project in order to commence construction by November 2008, in compliance with Schedule Seven.

Cambridge plans to complete construction of floatables controls at outfalls CAM007 and CAM017 along the Charles River by December 2007, in compliance with Schedule Seven. Cambridge will also monitor hydraulic conditions in sewer systems related to the nearly plugged outfalls at CAM009 and CAM011, with the hope of permanently closing these outfalls.

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Table 6: Planned Compliance in 2007

Milestone Date	Milestone Description	Project Schedule
Sep 2005	<i>MWRA to complete construction of detention and treatment facility at Union Park Pump Station.</i>	MWRA has reported several significant construction delays to the Court since construction began in 2003. Construction is 98% complete as of March 2007. MWRA has been operating part of the new treatment facility since December 2006 and expects to achieve substantial completion by April 27, 2007.
Sep 2006	<i>MWRA to complete construction of storage conduit for BOS019.</i>	Prior to commencement of construction in March 2005, MWRA reported to the Court that the construction duration needed to change from 18 months to 24 months, due to a significant increase in project size and complexity. MWRA expects to complete construction by March 31, 2007, as earlier reported.
Mar 2007	<i>MWRA to submit annual report on CSO control progress.</i>	MWRA submitted this Annual Report for 2006 on March 15, 2007.
	<i>MWRA, in cooperation with BWSC, to complete construction of sewer separation and system optimization for BOS072 and BOS073.</i>	BWSC expects to complete construction at outfalls BOS072 and BOS073 by March 31, 2007, on schedule.
	<i>MWRA to submit report on, and commence implementation of, measures that optimize operation of dry weather pumps and influent gates at Prison Point and related structures. MWRA to propose flow limits for Prison Point facility based on the results.</i>	MWRA plans to submit the Prison Point facility optimization report and begin implementing its recommendations by March 31, 2007. The report will include an updated model prediction of typical year facility activations and treated discharge volume with full implementation of the recommended optimization measures.
Jul 2007	<i>MWRA, in cooperation with Cambridge, to commence construction of CAM400 manhole separation.</i>	Design and construction efforts on these projects and other Alewife Brook projects continue to be delayed pending administrative law decisions on the citizens' appeal of the wetlands order of conditions for the CAM004 stormwater outfall and wetland basin that is a core requirement of the CSO control plan for Alewife Brook.
	<i>MWRA, in cooperation with Cambridge, to commence construction of CAM004 stormwater outfall and detention basin.</i>	
Dec 2007	<i>MWRA, in cooperation with Cambridge, to complete floatables control at outfalls CAM007, CAM009, CAM011, and CAM017.</i>	Cambridge plans to complete construction of floatables control at outfalls CAM007 and CAM017 on schedule. Outfalls CAM009 and CAM011 are blocked or nearly blocked, and Cambridge has initiated a study to determine whether they can be closed permanently.

MWRA plans to complete preliminary design work and commence final design for the Brookline Connection, Cottage Farm Overflow Chamber Interconnection and Cottage Farm Gate Control project by August 2007. MWRA has also begun to prepare a scope of services and request for proposals to procure design services for the Charles River Valley/South Charles River Relief Sewer gate controls and evaluation of additional Charles River interceptor interconnection alternatives, to assure commencement of design by January 2008, in compliance with Schedule Seven.

Alewife Brook

In 2007, with the expectation that the wetlands appeal related to the proposed stormwater basin will be resolved in its favor, Cambridge plans to resume final design of the basin and new stormwater outfall (Contract 12). Cambridge's schedule also calls for commencing design work for CAM400 Manhole Separation and for the Interceptor Connection Relief and Floatables Control project immediately following resolution of the appeal. Once Contract 12 moves into construction, Cambridge can then pursue separation of the combined sewer systems tributary to outfall CAM004, the elimination of CSO discharges at this outfall, and the other projects in the Alewife Brook CSO control plan.

Annual CSO Discharge Reporting

In compliance with its NPDES permit, MWRA is reviewing facility records, meter data and other system performance indicators and is conducting hydraulic modeling to estimate CSO discharges for all storms that occurred in calendar year 2006. MWRA plans to submit the estimates to EPA and DEP in April 2007. MWRA will share the results with its CSO communities to validate the estimates and coordinate their submissions to EPA and DEP, because the communities have similar reporting requirements in their NPDES permits. MWRA uses the annual CSO discharge estimates to verify progress in controlling CSO discharges towards realizing the goals of the long-term CSO control plan and meeting corresponding NPDES permit limits, which are the basis for compliance with water quality standards.



The End