

# **Capital Improvement Program**

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**FISCAL YEAR 2005**



**MASSACHUSETTS WATER RESOURCES AUTHORITY**

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**together with the participation of MWRA staff.**



December 2004

Katherine Haynes Dunphy, Chairwoman  
MWRA Advisory Board  
11 Beacon Street  
Boston, MA 02108

Dear Chairwoman Dunphy:

This letter transmits to the Advisory Board MWRA's Fiscal Year 2005 Capital Improvement Program (CIP). The Capital Improvement Program was approved by MWRA's Board of Directors at its June 23, 2004 meeting.

This is the first capital budget that does not include spending for the Boston Harbor Project. The total capital budget is \$4 billion, including contingency, of which \$2 billion remains to be expended. The CIP includes projected spending, including contingency, of \$1.0 billion for FY04-08, \$850 million for FY09-13, and \$128 million for beyond FY13.

Total projected capital spending for Fiscal Year 2005 is \$223.6 million, including contingency. During coming fiscal year, capital efforts will be focused on completion of construction and start-up of three major facilities, with a combined value of \$262 million:

- Braintree-Weymouth Tunnel
- Braintree-Weymouth Intermediate Pump Station
- Walnut Hill Water Treatment Plant

In addition to start-up of the above projects, staff will be completing design and progressing to the bid and award stage on several other major programs including the final phases of the Braintree-Weymouth Relief Facilities, covered storage at Blue Hills, as well as additional water main rehabilitation work.

Additional project information and a copy of this document is available online at [www.mwra.state.ma.us](http://www.mwra.state.ma.us). Questions or comments on this document or information available on the Internet should be directed to the MWRA Budget Department.

Thank you for your continued support and comments and recommendations to the capital budget.

Sincerely,

A handwritten signature in black ink, appearing to read "F. A. Laskey".

Frederick A. Laskey  
Executive Director

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# FY05 Capital Improvement Program

## Overview

MWRA was created by the Massachusetts legislature in 1985 and since that time has invested over \$6.3 billion to modernize and improve the wastewater and waterworks systems serving its member communities. The FY05 CIP includes 110 ongoing and new projects with estimated costs of approximately \$4.0 billion in FY05 dollars, of which approximately \$2.2 billion was expended through the end of FY04. Projected future expenditures are estimated to be approximately: \$1.0 billion during Fiscal Years 2004 through 2008; \$850 million for Fiscal Years 2009 through 2013, and \$128 million beyond FY 2013. The FY05 CIP contains all expenditures currently estimated by the Authority as necessary to carry out its major capital projects.

Program Area	Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	5-Year FY04-08	5-year FY09-13	Beyond FY13
Wastewater System Improvements	1,734.6	664.3	1,070.2	91.6	116.9	116.8	111.5	103.8	540.7	415.8	113.7
Waterworks System Improvements	2,032.4	1,275.6	756.8	109.1	83.3	58.2	73.7	75.7	400.1	352.1	4.6
Business & Operations Support	58.4	30.6	27.8	2.1	8.0	9.5	5.3	0.9	25.8	2.0	0.0
Total MWRA	3,825.3	1,970.6	1,854.8	202.9	208.2	184.5	190.5	180.4	966.6	769.9	118.4
Contingency	155.0	0.0	155.0	0.0	15.4	14.8	17.3	18.1	65.5	80.0	9.5
Total MWRA with Contingency	3,980.3	1,970.6	2,009.8	202.9	223.6	199.3	207.8	198.5	1,032.1	849.8	127.9

The benefits and services to be provided to MWRA ratepayers by the CIP over the next ten years include the following:

- Complete the Walnut Hill Water Treatment Plant to ensure continued provision of high quality drinking water to all customers.
- Complete the connection of the MetroWest Water Supply Tunnel to the Walnut Hill Water Treatment Plant, providing redundancy to the Hultman Aqueduct thus making water delivery to all MWRA customers more reliable.
- Complete covered storage facilities, including Norumbega and Blue Hills Covered Storage, to provide safe, reliable storage for water treated at Walnut Hill and transported through the MetroWest Tunnel and Hultman Aqueduct.
- Rehabilitate the Wachusett and Hultman Aqueducts as well as rehabilitation of top shaft structures on the Quabbin Tunnel, Dorchester Tunnel, City Tunnel, Southborough Tunnel, and City Tunnel Extension.
- Rehabilitate a significant portion of the West Roxbury Tunnel.

- Complete the long-term CSO control plan, resulting in closing 35 of 84 CSO outfalls and reducing CSO discharges to Boston Harbor and the Mystic, Charles, and Neponset Rivers by 88% from 1987, when MWRA accepted responsibility for CSO control, with 95% of remaining discharges receiving treatment.
- Construct new interceptor facilities to serve Braintree, Hingham, Holbrook, Randolph, Weymouth, and sections of Quincy, and to reduce sewage overflows into the Weymouth Fore River.
- Continue rehabilitation of the water distribution system at a rate of seven to ten miles per year (2.5% to 3% of the total 265 miles of MWRA pipeline).
- Improve and replace equipment on Deer Island to ensure that the plant continues to operate efficiently and effectively.
- Improve security to protect MWRA facilities.

## Highlights

At its June 11, 2003 meeting, the MWRA Board of Directors adopted a five-year capital spending cap that limits total expenditures for fiscal years 2004 to 2008 to \$1.1 billion. Annual spending within the five-year period may vary within plus or minus 20% of the initial budget amounts as long as the five-year total is not exceeded. The FY05 CIP complies with the total spending limit for the five-year period, as well as the spending limits for each respective fiscal year. Table 1 provides a comparison of cap spending, by fiscal year, against the baseline (June 2003) and Final FY05 (June 2004) CIP.

	FY04	FY05	FY06	FY07	FY08	Total FY04-08
Baseline (Jun-2003)	\$250.9	\$203.5	\$215.2	\$250.1	\$214.8	\$1,134.5
CIP (June-2004)	202.1	220.6	200.6	215.6	211.9	1,050.8
\$ Change	(\$48.8)	\$17.1	(\$14.6)	(\$34.5)	(\$2.9)	(\$83.7)
% Change	-19.5%	8.4%	-6.8%	-13.8%	-1.4%	-7.4%

As part of the CIP update process, staff review all projects and make adjustments to incorporate new information. Adjustments include: 1) updated cost estimates based on design submittals or adjustments to approved and expected change orders or amendments; 2) schedule revisions to reflect additional time to review design submittals, incorporate scope changes, and/or address permitting issues; and 3) revised spending based on activity to-date or comparison with similar project spending. In addition, new capital needs expected over the ten-year period are reviewed and incorporated. As discussed later, some of this new capital work is expected to start within the cap period. These changes, plus revised calculations for contingency and inflation cap components, are incorporated into revised projected expenditures that must comply with the cap limit.

## CIP Expenditures by Program Area

The chart below presents the CIP budget by capital program areas and program category. Individual project summaries with changes from the Final FY04 CIP are provided later and available on-line at [www.mwra.state.ma.us](http://www.mwra.state.ma.us).

Capital Improvement Program Expenditure Summary											
FY05 CIP (June 2004)											
\$ in Millions											
Program Area	Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	5-Year FY04-08	5-year FY09-13	Beyond FY13
<b>Wastewater System Improvements</b>	1,734.6	664.3	1,070.2	91.6	116.9	116.8	111.5	103.8	540.7	415.8	113.7
Interception & Pumping	761.5	342.5	419.0	30.9	29.9	56.8	36.5	25.7	179.9	166.6	72.5
Treatment	135.7	10.2	125.6	3.2	13.0	14.9	14.6	12.2	57.8	53.4	14.3
Residuals	67.1	56.6	10.5	8.9	0.9	0.0	0.0	0.0	9.8	0.0	0.7
CSO	701.3	205.3	496.0	47.2	68.6	40.3	58.1	63.1	277.3	179.0	39.6
Other	68.9	49.7	19.1	1.4	4.5	4.8	2.4	2.8	15.8	16.8	-13.5
<b>Waterworks System Improvements</b>	<b>2,032.4</b>	<b>1,275.6</b>	<b>756.8</b>	<b>109.1</b>	<b>83.3</b>	<b>58.2</b>	<b>73.7</b>	<b>75.7</b>	<b>400.1</b>	<b>352.1</b>	<b>4.6</b>
Drinking Water Quality Improvements	609.3	386.3	223.0	57.0	32.4	19.3	16.5	10.4	135.7	69.2	18.2
Transmission	789.1	619.4	169.6	10.2	11.2	8.7	5.3	6.1	41.5	89.2	38.9
Distribution And Pumping	605.4	198.6	406.8	28.5	27.7	20.2	42.9	52.1	171.3	174.6	60.9
Other	28.6	71.3	-42.7	13.5	12.1	10.0	8.9	7.1	51.6	19.1	-113.3
<b>Business &amp; Operations Support</b>	<b>58.4</b>	<b>30.6</b>	<b>27.8</b>	<b>2.1</b>	<b>8.0</b>	<b>9.5</b>	<b>5.3</b>	<b>0.9</b>	<b>25.8</b>	<b>2.0</b>	<b>0.0</b>
<b>Total MWRA</b>	<b>3,825.3</b>	<b>1,970.6</b>	<b>1,854.8</b>	<b>202.9</b>	<b>208.2</b>	<b>184.5</b>	<b>190.5</b>	<b>180.4</b>	<b>966.6</b>	<b>769.9</b>	<b>118.4</b>
Contingency	155.0	0.0	155.0	0.0	15.4	14.8	17.3	18.1	65.5	80.0	9.5
<b>Total MWRA with Contingency</b>	<b>3,980.3</b>	<b>1,970.6</b>	<b>2,009.8</b>	<b>202.9</b>	<b>223.6</b>	<b>199.3</b>	<b>207.8</b>	<b>198.5</b>	<b>1,032.1</b>	<b>849.8</b>	<b>127.9</b>

## Wastewater System Improvements

The Wastewater System Improvements program area consists of 48 projects in the five program categories listed below.

Capital Improvement Program Expenditure Summary											
FY05 CIP (June 2004)											
\$ in Millions											
Program Area	Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	5-Year FY04-08	5-year FY09-13	Beyond FY13
Interception & Pumping	761.5	342.5	419.0	30.9	29.9	56.8	36.5	25.7	179.9	166.6	72.5
Treatment	135.7	10.2	125.6	3.2	13.0	14.9	14.6	12.2	57.8	53.4	14.3
Residuals	67.1	56.6	10.5	8.9	0.9	0.0	0.0	0.0	9.8	0.0	0.7
CSO	701.3	205.3	496.0	47.2	68.6	40.3	58.1	63.1	277.3	179.0	39.6
Other	68.9	49.7	19.1	1.4	4.5	4.8	2.4	2.8	15.8	16.8	-13.5
Wastewater System Improvements	1,734.6	664.3	1,070.2	91.6	116.9	116.8	111.5	103.8	540.7	415.8	113.7

**Interceptor Sewers and Pumping.** The Authority is undertaking, and in some cases has completed, several major projects to rehabilitate, extend and increase the capacity of the interceptor system and its supporting facilities. These projects are necessary because the assets are either approaching or in some cases have surpassed their useful lives, or because their capacity is not adequate to serve the existing or projected service area populations. As they are completed, the new facilities alleviate sewer surcharging and overflow problems. The interceptor sewer and pumping projects total approximately \$761.5 million, of which approximately \$342.5 million was expended through FY03 and approximately \$179.9 million is expected to be expended during the 5-year period ending FY08. The most significant project is the Braintree-Weymouth Relief Facilities project, which includes a deep rock tunnel, two new pump stations, and new interceptors. As of August 1, 2004, the tunnel is 100% complete and overall the project is 80% complete. When major portions of the project are completed in FY05, the project will provide capacity for peak flows from Braintree, Hingham, Holbrook, Randolph, Weymouth, and sections of Quincy. The entire project is expected to be completed in FY07.

**Treatment and Residuals.** As the new Deer Island treatment facilities have become operational, plant staff have assumed responsibility for maintenance and ongoing capital improvements. The FY05 CIP includes \$135.7 million for these improvements, including \$65 million for equipment and system replacement and upgrades over the next ten years. These improvements are funded through the Deer Island Treatment Plant Asset Protection project. The \$65 million amount is an estimate that is refined annually, as additional operational and maintenance information becomes available. To accommodate increased sludge volumes generated by secondary treatment and to increase plant efficiency, the Authority has completed modification of four existing processing trains and added two new trains to its sludge processing facilities in Quincy. Final construction work at the processing plant was completed in December 2001.

**Combined Sewer Overflows.** Discharges of combined wastewater and storm water runoff from 63 CSO outfalls in the Authority's system and four of the service area community systems (Boston, Cambridge, Chelsea and Somerville) impact water quality in the Charles, Mystic and Neponset Rivers and in Boston Harbor. Pursuant to a 1987 stipulation entered in the Clean Water Act Case, the Authority has responsibility for developing and implementing a long-term plan for CSO control at all locations. In the most recent assessment, the Authority completed its Final CSO Facilities Plan and Environmental Impact Report based on the CSO Conceptual Plan. The Final CSO Facilities Plan comprises 25 site-specific projects, including such measures as sewer separation, interceptor improvements, upgrades of existing CSO treatment facilities, new CSO facilities and storage. Schedule Six in the Federal Court Order ("Schedule Six") includes more than 50 milestones directing the design and construction of the projects. The FY05 CIP includes \$701.3 million for planning, design and construction costs of these projects.

Fourteen of the 25 projects are complete, and five additional projects are well into construction. Portions of two of these additional projects, the Cambridge/Alewife Brook Sewer Separation project and the East Boston Branch Sewer Relief project, have been constructed, but the remaining portions are subject to ongoing engineering reassessments and regulatory review to determine the most appropriate approaches to complete the projects and attain CSO control goals, in light of significantly higher cost estimates.

The remaining six projects are in design. Three of these (North Dorchester Bay Conduit, Reserved Channel Conduit, and Reserved Channel CSO Treatment Facility) make up the South Boston CSO plan for which the Authority suspended design work in 2000 pending a full project reassessment due to community opposition to the siting of the CSO treatment facility. The Authority filed a Supplemental Facilities Plan/Environmental Impact Report in April 2004, which presented a new recommended plan for North Dorchester Bay and Reserved Channel. In July 2004, following a public review and comment period, the Massachusetts Secretary of Environmental Affairs issued a certificate on the recommended plan allowing the project to move forward.



## Waterworks System Improvements

Capital projects for the Waterworks System are designed to upgrade and extend the useful life of the water supply, transmission and distribution systems in order to assure a satisfactory and consistent level of water quality and distribution throughout the Waterworks System. There are currently 55 projects in the four program categories several of which are mandated by federal regulatory requirements. The total estimated expenditures for the Waterworks projects for FY04 through FY08, are approximately \$400.1 million. Approximately \$352.1 million in additional expenditures is forecast through FY13, reflecting significant capital investment in the Waterworks System. The major projects in the program are summarized below.

Program Area	Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	5-Year FY04-08	5-year FY09-13	Beyond FY13
Drinking Water Quality Improvements	609.3	386.3	223.0	57.0	32.4	19.3	16.5	10.4	135.7	69.2	18.2
Transmission	789.1	619.4	169.6	10.2	11.2	8.7	5.3	6.1	41.5	89.2	38.9
Distribution And Pumping	605.4	198.6	406.8	28.5	27.7	20.2	42.9	52.1	171.3	174.6	60.9
Other	28.6	71.3	-42.7	13.5	12.1	10.0	8.9	7.1	51.6	19.1	-113.3
Waterworks System Improvements	2,032.4	1,275.6	756.8	109.1	83.3	58.2	73.7	75.7	400.1	352.1	4.6

**Drinking Water Quality Improvements.** The Authority is implementing an Integrated Water Supply Improvement Program for drinking water improvement. This program consists of aggressive watershed protection, modernized treatment facilities, and distribution system improvements including construction of covered storage facilities and pipeline rehabilitation. This program is based on current engineering practices, up-to-date technology and drinking water standards established under state and federal laws. Pursuant to an administrative consent order entered into with DEP and DCR with respect to the enforcement of the SDWA and the rules promulgated thereunder, the Authority is constructing the new Walnut Hill Water Treatment Plant. The plant will treat water delivered from the Wachusett Reservoir (including water transferred to the Wachusett Reservoir from the Quabbin Reservoir) through ozonation and chloramination. Construction of the treatment plant began in November 2000. When construction and testing are completed in 2005, the Walnut Hill Water Treatment Plant will be able to treat 405 mgd of drinking water.

Because existing uncovered distribution reservoirs are vulnerable to airborne contaminants and allow the growth of bacteria plants and algae, the Authority is eliminating the use of open distribution reservoirs by constructing covered storage facilities. These projects, which have been completed, replace active distribution storage of approximately 2.4 billion gallons of open reservoirs with more than 200 million gallons of covered storage downstream of the Walnut Hill Water Treatment Plant.

Total estimated costs for drinking water quality improvements in the FY05 CIP are approximately \$609.3, of which \$429.4 million is for water treatment, and \$179.9 million is for covered storage facilities and watershed protection. Approximately \$386.3 million was expended through FY03 for these projects, and approximately \$135.7 million is expected to be expended during FY04 through FY08.

**Transmission.** Critical needs of the Authority's aqueduct system include correction of structural conditions to reduce leakage, and provision of redundancy for critical sections of the transmission

system, such as the Hultman Aqueduct and the Southborough Tunnel, where transmission has depended on a single conduit. The estimated costs for transmission projects included in the FY05 CIP total \$789.1 million, of which approximately \$619.4 million was expended through FY03, and approximately \$41.5 million is expected to be expended during Fiscal Years 2004 through 2008.

The most significant of the Authority's transmission projects is the construction of the MetroWest Water Supply Tunnel, a 17.6-mile long, 14-foot diameter deep rock tunnel running from Marlborough to Weston. The MetroWest Water Supply Tunnel is critical to provide an appropriate level of transmission redundancy and is a key element of the planning, design and eventual operation of the water treatment plant and covered distribution storage projects described above. Construction of the tunnel, which began in June 1996, is complete and the tunnel was placed in service in November 2003.

**Distribution and Pumping.** The FY05 CIP identifies 27 separate projects for rehabilitation, upgrade or new construction of pipelines, pumping facilities, valves and meters. These projects total approximately \$605.4 million, of which approximately \$198.6 million was expended through F Y03, and approximately \$171.3 million is expected to be expended during FY04 through FY08. Over the next 30 years, approximately 200 miles of unlined pipe will be rehabilitated or replaced at a rate of approximately seven miles of pipe each year. These projects will provide improved reliability and safety of water delivery.

**Other Waterworks Projects.** These projects include expansion of the Waterworks System's central monitoring system, various system rehabilitation projects and two local community waterworks assistance programs. The total cost of these projects as contained in the FY05 CIP is approximately \$28.6 million.

## Business and Operations Support

The Business and Operations Support program area consist of projects that sustain MWRA's mission by supporting MWRA operations.

Capital Improvement Program Expenditure Summary											
FY05 CIP (June 2004)											
\$ in Millions											
Program Area	Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	5-Year FY04-08	5-year FY09-13	Beyond FY13
Capital Maintenance Planning/Developr	4.9	2.2	2.7	0.1	0.7	1.0	0.7	0.1	2.7	0.0	0.0
Equipment Purchase	10.0	0.8	9.3	1.3	3.2	3.3	1.6	0.0	9.3	0.0	0.0
MWRA Facility - Chelsea	10.2	8.6	1.7	0.2	1.1	0.3	0.0	0.0	1.7	0.0	0.0
Technical Assistance	1.7	0.0	1.7	0.0	0.6	0.6	0.6	0.0	1.7	0.0	0.0
Business Systems Plan	25.9	18.0	7.9	0.4	2.0	3.3	1.8	0.2	7.7	0.2	0.0
Environmental Remediation	1.8	1.1	0.6	0.1	0.1	0.2	0.1	0.1	0.5	0.1	0.0
MWRA Facilities Management & Plann	3.9	0.0	3.9	0.0	0.3	0.8	0.6	0.5	2.3	1.6	0.0
Business & Operations Support	58.4	30.6	27.8	2.1	8.0	9.5	5.3	0.9	25.8	2.0	0.0

Business and operations support projects are generally directed to improvement of the Authority's centralized services. The FY05 CIP includes funds for leasehold improvements to the new Chelsea Facilities, which houses personnel and equipment servicing the metropolitan Boston portion of the Systems. Total capital costs for this project are estimated at \$10.2 million, of which \$8.8 million has been expended. The FY05 CIP also includes funds for technical assistance contracts and for the upgrade of the Authority's Management Information Systems to meet the changing needs of planning and managing the Systems to respond to new regulatory requirements. Security improvements to protect Authority facilities are also funded through business and operations support. Total business and operations support costs in the FY05 CIP are approximately \$58.4 million.

## New Capital Initiatives

MWRA is committed to continuous reinvestment in the infrastructures of both the water and wastewater systems to protect public health, improve services to customer communities, and meet environmental mandates. In support of this commitment, staff utilizes the annual CIP development process to identify, evaluate, and prioritize new projects and phases for potential inclusion in the capital budget. Funding is earmarked in the CIP to recognize the financial implications of high-priority capital needs, including well-defined projects as well as broader, multi-year initiatives that are still evolving into specific projects. MWRA uses this information to assess the relative priority of existing capital projects versus new initiatives to ensure compliance with the current five-year spending limit, shape the priorities for future years, and provide context for rates management and planning.

The Final FY05 CIP includes \$274 million in funding for new work included in 51 phases in 18 projects. The new work supports several important initiatives including on-going rehabilitation of wastewater interceptors, construction of Walnut Hill ultraviolet treatment facilities, and rehabilitation of the Sudbury Aqueduct. MWRA projects to spend approximately \$38 million or 14% of the total for new projects within the current cap period, which represents 3.6% of the \$1.1 billion five-year spending cap. Approximately \$184 million in spending is planned during the next five-year period from FY09 through FY2013 and \$52 million in spending for FY2014 and beyond.

A brief description of the new initiatives is provided below:

## Description of Major Proposed New Capital Projects with Spending Starting in FY05

### ***Infiltration and Inflow (I/I) Local Financial Assistance Project/Phase V***

This new phase is to provide additional funding for communities (approximately 15) that have exhausted eligible funding from previous phases. This new phase will continue to support communities' efforts to rehabilitate their collection systems with the goal of reducing I/I flows.

Phase V will provide an additional \$40 million in funding through a 45% (\$18 million) grant and 55% (\$22 million) loan program to be repaid within five years. Disbursements for this project are scheduled to start by the end of FY05 and will have a net budget impact of \$13.4 million during the FY04-FY08 spending cap period. This includes \$7.2 million in grants and \$8.8 million in loans, offset by \$2.6 million in loan repayments.

### ***Quabbin Transmission System Project, Oakdale Valves***

This project funds the rehabilitation of the 75-year-old Oakdale Hydropower Generator Facility, which is located at the end of the Quabbin Tunnel. The function of this facility is to control water transfers from the Quabbin Reservoir to the Wachusett Reservoir and it is a critical component of the water transmission system for all MWRA communities except those in the Chicopee Valley. Recent inspections of this facility revealed significant deterioration including improperly functioning by-pass valves and an old and corroded pressure relief structure.

The Final FY05 CIP includes a total of \$12.1 million for this project allocated into two phases based on the criticality of required work. Phase I covers short-term rehabilitation needs including the immediate replacement of the by-pass valves and repair or replacement of the pressure relief facility. Design work started in April 2004 due to the critical nature of the repairs and construction is scheduled to commence in October 2005 with completion by November 2006. Phase II, which will address long-term improvements to the facility, is scheduled to commence with the design work in July 2007 (FY08).

### ***Rehabilitation of Other Water Pump Stations Project, Design 2***

This project funds a new design contract for upgrades to five 40 to 80-year old active water pump stations, specifically Brattle Court, Reservoir Road, Hyde Park, Belmont, and Spring Street. The modifications are required to comply with building safety codes, replace inoperable equipment, and ensure sufficient hydraulic capacity to handle current demand. This contract will replace an existing design contract that was suspended by MWRA due to additional and changing needs including SCADA instrumentation, enhanced security provisions, programming during construction, facility handbooks, training, start-up support engineering, as well as engineering staffing constraints.

The Final FY05 CIP includes \$4.5 million for the new design phase, offset by \$1.9 million in unexpended funds from the original design contract, for a net increase of \$2.6 million to the CIP. MWRA anticipates awarding the second design contract in July 2004 and that \$4.4 million in

spending will occur during the existing five-year cap period.

### ***Additional As-Needed Design Resources***

The Final FY05 CIP includes a total of \$5 million in three projects to provide multi-discipline design services. These services will primarily support smaller value capital projects required to retrofit equipment and facilities. This type of contract has been used successfully on Deer Island since the completion of the Boston Harbor Project to enhance delivery of ancillary modification and optimization projects. These contracts have proven to be a cost-effective, efficient, and flexible approach for accessing an array of specialized engineering expertise and managing peak workload associated with multiple concurrent active projects. The CIP includes three new phases to augment design capacity with the following resources:

- ***Walnut Hill Water Treatment Plant Project, As-needed Technical Assistance*** – The Final FY05 CIP includes \$1.5 million for as-needed design services for potential post-warranty changes and ancillary modifications identified after start-up. MWRA plans to procure two \$750,000 concurrent contracts covering a two-year period from July 2005 (FY06) through June 2007 (FY08). This approach was and continues to be extremely effective at Deer Island.
- ***DI Plant Optimization Project, As-Needed Design*** – The Final FY05 CIP includes an additional \$2 million in funding to continue Deer Island’s use of as-needed design services for optimization projects. Deer Island plans to procure two \$1 million contracts with spending anticipated to occur from late in FY05 through FY07.
- ***Capital Maintenance Planning and Development Project, Water and Wastewater As-Needed Design and Technical Assistance*** – The Final FY05 CIP includes \$1.5 million for as-needed design services primarily to support projects to retrofit or replace equipment and facilities as identified through FAMP assessments. Examples of these types of projects include the heating system upgrade, window replacement, and screen replacements in the remote headworks facilities. MWRA plans to procure two \$750,000 concurrent contracts covering a two-year period from December 2004 (FY05) through November 2006 (FY07).

### ***Northern Intermediate High Covered Storage Project***

The Final FY05 CIP includes a new \$500,000 study phase to evaluate options for upgrading storage capacity for the Northern Intermediate High Service System. The study will also assess redundancy requirements and evaluate and recommend a preferred route for the new transmission main. This system serves Stoneham, Wakefield, Winchester, and Woburn, which have a total population of 200,000 residents. This additional storage capacity could also serve the towns of Reading and Wilmington, which are in the nascent stages of applying for membership to the MWRA water system. The current six million gallon capacity of the Bear Hill Tank is insufficient to meet MWRA’s 1993 Water System Master Plan goal of one day of emergency storage for the service area. MWRA intends to use the information gathered in this study to examine locations in the Northern Intermediate High system for additional covered storage to provide adequate pressure and redundancy to the existing Bear Hill Tank in Stoneham. The study will also evaluate options such as

changing the location of Bear Hill Tank #2 and replacing rather than rehabilitating Section 29 to increase capacity. It will also examine reconfiguring the James Gillis pumps to shift some of the capacity to provide more pumping to the Northern Intermediate High system and less than is currently available to the Northern High System after completion of the Unified Low Service System and Norumbega Covered Reservoir projects.

The Final FY05 CIP includes \$500,000 for this phase to be spent within the existing five-year cap period. The study is scheduled to start in May 2005 and be completed by June 2006.

### ***MWRA Facilities Management and Planning Project***

The Final FY05 CIP includes \$3.9 million for MWRA space and building needs. This project reflects MWRA's on-going commitment to centrally coordinate space-planning decisions, consolidate facilities, and optimize space. This project consolidates \$2.6 million in funding for existing MWRA facilities projects including Deer Island Maintenance Facilities, CSB Demolition, and Chelsea facilities and adds \$1.3 million in funding for new work.

### ***Equipment Purchase Project, Vehicles***

The Final FY05 CIP funds the anticipated purchase of new specialty vehicles to replace existing equipment in poor condition or well beyond its useful life. Specifically, funds cover large vehicles with a cost over \$100,000 each, such as a bucket machine (two pieces of equipment), excavator, crane, backhoe, and a landfill loader for the Clinton Treatment Plant. There will be no net increase to the vehicle fleet size as a result of these purchases. MWRA expects to purchase all of these vehicles during FY05 with the exception of the excavator, which is budgeted for replacement in FY06.

## Description of Major Proposed New Projects with Spending Starting in FY06

### ***Interceptor Renewal Program***

The Final FY05 CIP includes \$102 million for a ten-year interceptor renewal program to rehabilitate pipeline that pose the highest risk and/or consequence of failure as assessed by MWRA staff.

### ***Capital Maintenance Planning and Development Project, Facilities Asset Management (FAMP) Phase 3***

The Final FY05 CIP includes \$750,000 for MWRA's FAMP Phase 3, which will focus on development of an asset management plan for Transport and Waterworks facilities with an emphasis on the Walnut Hill Water Treatment Plant. MWRA successfully launched FAMP at Deer Island and continues to expand the program to include additional equipment and systems. Efforts are now underway to accelerate the implementation of the program within the Field Operations Department (FOD) through reassignment of a project manager, assistance from Deer Island staff experienced with FAMP, and training of FOD staff in reliability centered maintenance, condition monitoring, and other FAMP techniques. The budget for Phase 3 provides funds for a consultant to assist staff with FAMP implementation agency-wide. Phase 3 is projected to begin in July 2005 and spending is estimated to occur from FY06 through FY08.

## **Contingency**

There are costs associated with the Capital Improvement Program that are not possible to predict with any degree of certainty. These costs include legal fees, claims settlements, acquisition of land, and a variety of study, design, and construction change orders and contract amendments. MWRA uses a contingency budget to cover these costs if they exceed the approved budget. The contingency budget is calculated as a percentage of expected capital expenditure cash outlays (15% for tunnel construction and approximately 10% for all other projects).

The total contingency budget for the ten-year CIP is \$155.0 million. The contingency budget for FY04-08 is \$65.5 million.

## S.102 Quincy Pump Facilities

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

MWRA's three pump facilities in Quincy (Quincy, Squantum, Hough's Neck) were beyond their useful lives and prone to failure. Force mains connected to the stations were corroded and maintained a very low velocity resulting in high-energy losses because of friction and other flow constraints. Under this project MWRA is constructing new pump stations and has rehabilitated force mains to ensure continuous pumping of sewage flows to treatment facilities. Operating costs have been reduced as a result of reduced staffing needs following the completion of the automated Quincy Pump Station. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).* Project nearing completion and scheduled to be removed from the CIP prior to the next budget cycle.

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$26,245	\$25,442	\$803	\$694	\$109				

Project Status	96.9% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$26,013	\$26,245	\$232	Jul-03	Sep-03	2 Mos.	\$568	\$803	\$235

### **Explanation of Changes**

- Project Cost – An additional level of effort due to problems with the pumps on the Squantum Pump Station contract increased design costs and resulted in a contract completion delay.
- Schedule – None.
- CAP Impact – Overall project cost increase, as described above, increased project's contribution the CAP.



## S.104 Braintree-Weymouth Relief Facilities

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

Construction of relief facilities and the resulting reduction in community infiltration and inflow will provide capacity for peak sewage flow from Braintree, Hingham, Holbrook, Randolph, Weymouth, and sections of Quincy. This project will reduce surcharging in Braintree and Weymouth, and reduce frequent overflows into the Weymouth Fore River during wet weather. This project is being completed in accordance with a DEP administrative consent order. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$226,531	\$154,772	\$71,758	\$24,974	\$15,253	\$20,929	\$8,408	\$1,707	\$487

Project Status	68.3% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$226,556	\$226,531	-\$25	Jun-07	Jun-07	None.	\$70,001	\$71,271	\$1,270

### **Explanation of Changes**

- Project Cost – Actual executed change order amounts nearly offset by increased expenditures for Design 1 CS/RI and Design 2 CS/RI amendments for extensions covering start-up support, handbooks, and additional administration and construction management and resident inspection services.
- Schedule – None.
- CAP Impact – Previous schedule changes resulting from delay increased the projects contribution to the CAP.

## S.105 New Neponset Valley Relief Sewer

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

Construction of relief facilities to correct structural and hydraulic deficiencies in the New Neponset Valley Interceptor Sewer System to reduce surcharging and sewage overflows which, combined with other pollution, threatened the Neponset River Watershed, the water supply for Canton and the Dedham/Westwood Water District. Completion of the facilities will also accommodate an anticipated increase in demand resulting from population growth in the service area. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$30,334	\$30,297	\$37	\$12	\$25				

Project Status	99.9% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$30,334	\$30,334	\$0	Jul-96	Jul-96	None.	\$22	\$37	\$15

### **Explanation of Changes**

- Project Cost – None.
- Schedule – None.
- CAP Impact – Remaining balances pending project close-out.

## S.106 Wellesley Ext Replacement Sewer

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

Construction of a replacement sewer and rehabilitation of sections of existing sewer lines has largely alleviated capacity constraints, improved the water quality of the Charles River, protected the aquifers, and reduced back-ups in Needham and Dedham. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$88,018	\$64,359	\$23,659		\$2	\$404	\$219	\$608	\$22,426

Project Status	73.1% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$88,131	\$88,018	-\$113	Jan-11	Jul-12	18 Mos.	\$1,755	\$1,233	-\$522

### **Explanation of Changes**

- Project Cost – Construction 7 budget reduced to match actual costs.
- Schedule – Shifted schedule due to competing project priorities and staffing limits.
- CAP Impact – Cost decrease and schedule delay reduced the project’s contribution to the overall CAP.

## S.107 Framingham Extension Relief Sewer

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

The Framingham Extension Sewer had inadequate capacity to serve current and projected demand, resulting in surcharging and discharging of sewage into local water bodies such as the Charles River and Beaverdam Brook. The installation of a new force main and gravity sewer, construction of a new pump station, and rehabilitation of approximately 23,000 linear feet of existing pipe will provide sufficient capacity to transport peak flows and reduce overflows. This project is being completed in accordance with an EPA/DEP administrative consent order. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).* Project nearing completion and scheduled to be removed from the CIP prior to the next budget cycle.

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$47,996	\$47,900	\$96	\$45	\$49	\$1			\$1

Project Status	99.8% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$48,382	\$47,996	-\$386	Sep-04	Sep-04	None.	\$0	\$96	\$96

### **Explanation of Changes**

- Project Cost – Balancing change order for Late Sewer Rehab reduced overall project budget.
- Schedule – None.
- CAP Impact – Cashflow schedule reduced CAP contribution.

## S.127 Cummingsville Replacement Sewer

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

Capacity deficiencies in the MWRA system may be associated with overflows of local sewers upstream from the Cummingsville Branch System. Sewer moratoriums are in effect in the upstream communities of Woburn and Burlington. Construction of a replacement sewer and rehabilitation of existing sewers will provide additional capacity to ensure adequate and reliable wastewater service for upstream communities. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$7,061	\$1,271	\$5,790	\$100	\$396	\$2,212	\$2,951	\$129	\$2

Project Status	18.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$6,173	\$7,061	\$888	Apr-07	Apr-07	None.	\$4,879	\$5,788	\$909

### **Explanation of Changes**

- Project Cost –Two new subphases for Siphon Modification and revised estimates to provide engineering services to the Town of Winchester were only partially offset by revised costs estimates for Cummingsville Branch Sewer Construction.
- Schedule – None.
- CAP Impact – Overall project cost increases resulted in an increase CAP contribution.

## S.128 I/I Local Financial Assistance

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

Infiltration and inflow (I/I), groundwater and storm water that enter the collection system, contributes more than one-half of the total wastewater flow treated by MWRA. This depletes capacity that would otherwise be available to transmit sanitary flows, resulting in sewer surcharging, overflows of untreated sewage, more frequent combined sewage overflows, and higher pumping and treatment costs. The I/I Local Financial Assistance Program provides funding assistance for communities to rehabilitate their collection systems with the goal of structurally reducing I/I flows. Funding assistance for local projects complements other MWRA strategies for regional I/I reduction including wastewater metering to support flow based rates, provision of I/I estimates to communities, technical assistance to communities on local projects, regional coordination of I/I policy issues, and interaction with DEP and EPA. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$68,593	\$49,534	\$19,060	\$1,304	\$4,543	\$4,780	\$2,351	\$2,789	\$3,293

Project Status	72.2% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$50,593	\$68,593	\$18,000	May-15	May-18	36 Mos.	\$18,455	\$15,767	-\$2,688

### **Explanation of Changes**

- Project Cost - Increase reflects addition of Phase V to fund local community I/I reduction and sewer system rehabilitation projects. Phase V will provide an additional \$40 million in funding through a 45% or \$18 million grant and 55% or \$22 million loan program to be repaid over 10 years. .
- Schedule - Completion date of May 2013 reflects the end date for Phase V loan disbursement.
- CAP Impact - Reconciled, reviewed and revised pace of grant and loan disbursements and repayments based on historical activity for existing community I/I program. Added new Phase V funding. Revised program spending for existing and new I/I program results in a net reduction of \$2.7 million within cap period.

## S.130 Siphon Structure Rehabilitation

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

Completion of this project to rehabilitate and improve 127 siphon structures will improve flow conditions, increase odor control capabilities, reduce surcharging and overflows, and improve accessibility for ongoing maintenance. Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$6,959	\$940	\$6,019	\$2		\$20	\$229	\$229	\$5,539

Project Status	13.5% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$6,965	\$6,959	-\$6	Jun-10	Dec-10	6 Mos.	\$617	\$480	-\$137

### **Explanation of Changes**

- Project Cost – None.
- Schedule – Shifted start of design and construction by six months due to competing project activities and staffing limits.
- CAP Impact – Shift of design deferred spending outside the CAP period.

## S.131 Upper Neponset Valley Sewer System

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

The Upper Neponset Valley Sewer is hydraulically deficient resulting in frequent community system back-ups and interceptor overflows during wet weather to adjacent residential areas and water bodies in Brookline, Boston, Newton, and Dedham. Construction of a new relief interceptor will reduce chronic wastewater overflows and surcharging during wet weather and improve service and water quality. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$35,835	\$1,684	\$34,152	\$466	\$4,746	\$18,944	\$9,830	\$119	\$47

Project Status	4.7% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$27,785	\$35,835	\$8,050	Sep-07	Sep-07	None.	\$26,055	\$34,104	\$8,049

### **Explanation of Changes**

- Project Cost – Revised cost estimates to install sewer Sections 526-529 reflecting additional design, more jack pipe, additional linear feet of pipe, more excavation and support, more rock than anticipated, higher mobilization/demobilization. Land Acquisition costs also greater than originally budgeted for easements on Section 530 in St. Joseph's Cemetery.
- Schedule – None.
- CAP Impact – Overall project cost increase results in greater CAP contribution.



## S.132 Corrosion & Odor Control

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

High sulfide levels in the Framingham Extension System cause corrosion and odors in that system and downstream in the Wellesley Extension Sewer System and West Roxbury Tunnel. A study has identified the causes of corrosion and odors and recommended corrective measures. Completion of corrosion control measures will extend the useful life of these assets and minimize the impact on the existing wastewater conveyance infrastructure. Improved odor control will mitigate the impact on surrounding areas. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$17,215	\$1,688	\$15,527	\$605	\$600	\$1,163	\$3,595	\$8,407	\$1,157

Project Status	9.8% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$16,604	\$17,215	\$611	Feb-07	May-08	15 Mos.	\$14,967	\$14,369	-\$598

### **Explanation of Changes**

- Project Cost – Arthur St PS & FERS Force Main Subphase repackaged and work will be performed in three separate subphases, two new subphases, including FES Tunnel Rehab and Air Treatment Systems based on Preliminary Design Report. An amendment for Design CS/RI work for additional geotech investigation and design as well as additional scope of work including sluice gate & SCADA work at Arthur St. PS also contributed to increased project costs.
- Schedule – Delay to resolve scope issues during preliminary design.
- CAP Impact – Extension of Design/Resident Inspection reduced spending within the CAP period.

## S.134 Ashland Extension Sewer

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

MWRA will study the feasibility of constructing an extension sewer from the Framingham Extension Relief Sewer to the Framingham/Ashland line. MWRA member communities without direct connections to the MWRA sewer system have expressed concern that their capacity for development may be negatively affected without these direct connections. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$1,020	\$0	\$1,020						\$1,020

Project Status	Future Project	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.

### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$1,020	\$1,020	\$0	Dec-15	Dec-15	None.	Future	Future	N/A

### **Explanation of Changes**

- Project Cost – None.
- Schedule – None.
- CAP Impact - Future project falls outside CAP window.

## S.135 System Master Plan Interceptors

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

Completion of this project will reduce surcharging by replacing four interceptors: Mystic Valley, Revere Branch (Section 62), Cambridge Branch, and Malden Branch. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$10,915	\$0	\$10,915						\$10,915

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$10,926	\$10,915	-\$11	Apr-20	Apr-20	None.	Future	Future	N/A

### **Explanation of Changes**

- Project Cost – None.
- Schedule – None.
- CAP Impact - Future project spending falls outside CAP window.

## S.136 West Roxbury Tunnel

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

Rehabilitation of the West Roxbury Tunnel sewer to repair severe corrosion to prevent structural failure, surcharging and overflows. This sewer, built in 1964, transports flows from the Wellesley Extension Relief Sewer System through the West Roxbury portion of Boston to the High Level Sewer. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$82,968	\$8,897	\$74,071	-\$17	\$8	\$1,463	\$2,044	\$11,294	\$59,279

Project Status	10.7% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$84,072	\$82,968	-\$1,104	Mar-11	Mar-11	None.	\$6,419	\$14,793	\$8,374

### **Explanation of Changes**

- Project Cost – Elimination of the Planning/EIR subphase and reduction of the Design CS/RI subphase to actuals reduced the overall project budget.
- Schedule – None.
- CAP Impact – Start of tunnel design moved ahead by 12 months to Sep-2005, reflecting the deletion of the planning/EIR phase. Construction moved ahead by six months to Dec-2007 reflecting criticality to start the project sooner. These changes increased spending within the CAP period.

## S.137 Wastewater Central Monitoring

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To study, define, design, and implement a centralized monitoring and control system most appropriate for MWRA's wastewater transport system. SCADA implementation will improve wastewater system operation and maintenance through facility automation and remote monitoring, and is expected to result in estimated annual savings of more than \$2 million. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$14,432	\$912	\$13,520	\$1,015	\$4,349	\$6,668	\$1,479	\$5	\$4

Project Status	6.3% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$15,430	\$14,432	-\$998	Jan-07	Jan-07	None.	\$13,988	\$13,515	-\$473

### **Explanation of Changes**

- Project Cost – Revised estimates increased costs for Construction 1 includes additional construction and equipment (Prison Pt fuel, Alewife Pump #4, pump CSO diesel control panels, microwave monitoring systems). These increases were more than offset by decreased estimates for Construction 2 based on PDR site visits, equipment no longer needed and some work being performed In-House. Additional project savings realized in Design & Integration Services amendment for reallocation of allowances due to changes in communication strategies.
- Schedule – None.
- CAP Impact – Reduction from change to landline communication network offset by design services carried forward from FY03 reduced spending during the CAP period.

## S.138 Sewerage System Mapping Upgrade

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

Completion of this project will enhance the accuracy of existing and newly created GIS maps of sewerage communities to improve the quality of hydraulic analysis and reduce staff time and effort necessary to respond to emergencies within the transport system. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$284	\$211	\$73	\$73					\$0

Project Status	74.3% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$284	\$284	\$0	Dec-03	Apr-04	4 Mos.	\$66	\$73	\$7

### **Explanation of Changes**

- Project Cost – None.
- Schedule – Contract extension to complete work approved by BOD as amendment #2 in August 2003.
- CAP Impact - Time extension noted above increased spending within the cap period for services not completed in FY03.

## S.139 South System Relief Project

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To protect public health and property from sanitary system overflows and back-ups into homes and businesses during extreme wet weather events. Completion of the project will also extend the useful life of system assets and potentially avoid extraordinary costs resulting from system failures. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$4,546	\$3,440	\$1,106		\$61	\$152	\$589	\$304	

Project Status	75.7% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$4,546	\$4,546	\$0	Dec-06	Dec-07	12 Mos.	\$1,105	\$1,105	\$0

### **Explanation of Changes**

- Project Cost – Reallocation of funds from Howard St PS Construction to design and land acquisition /easement costs relating to the Quincy/Braintree Howard St. PS project resulted in no overall cost changes to the project.
- Schedule – Delay due to staff limits and other project priorities.
- CAP Impact - None.

## S.140 Neponset Valley Relief Sewer

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

The Neponset Valley Sewer is hydraulically deficient. Construction of a new interceptor will reduce chronic wastewater overflows and surcharging and improve service and water quality. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$12,333	\$0	\$12,333						\$12,333

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$12,345	\$12,333	-\$12	Jul-15	Jul-18	37 Mos.	\$734	\$0	-\$734

### **Explanation of Changes**

- Project Cost – None.
- Schedule – Shifted schedule due to competing project priorities and staffing limits.
- CAP Impact – Project planning phase shifted to January 2010, outside the current CAP period.



## S.141 Wastewater Process Optimization

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To optimize wastewater system operating procedures and make system improvements and modifications to ensure maximum wastewater treatment, minimize operating and maintenance costs, and extend the useful life of system assets. This project will be designed to maximize the benefit of SCADA system improvements. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$24,985	\$724	\$24,261	\$229	\$0		\$54	\$76	\$23,902

Project Status	2.9% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$823	\$24,985	\$24,162	Aug-03	Jul-14	133 Mos.	\$83	\$360	\$277

### **Explanation of Changes**

- Project Cost – New subphases for Siphon planning, design and construction and for the Somerville Sewer design and construction contributed to increased project costs.
- Schedule – Time extension to extend contract completion to permit training of critical staff and support as-needed modeling services.
- CAP Impact – Project cost increases resulted in a greater CAP contribution.

## S.142 Wastewater Meter Sys-Equip Replace

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To improve the accuracy of meter data used to determine wholesale wastewater charges. This will be accomplished by evaluating the existing wastewater metering system, including hardware and software, identify and evaluate current available technology, and develop a long-term plan. This project will be coordinated with and support SCADA implementation for the wastewater system. Upgrades to meter sites are expected in the future. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$6,578	\$0	\$6,578	\$1,152	\$4,013	\$19	\$48	\$147	\$1,199

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$5,300	\$6,578	\$1,278	Mar-10	Jan-11	10 Mos.	\$4,900	\$5,378	\$478

### **Explanation of Changes**

- Project Cost –Three new subphases added to accommodate the planning, design and construction of permanent power and online access to half the metering sites.
- Schedule –Planning, design and construction phases added for the new permanent power and online access project.
- CAP Impact - Increased project cost as itemized above resulted in a greater contribution to the CAP.

## S.143 Regional I/I Management Planning

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To reduce the amount of water entering the MWRA sewerage system from infiltration and inflow. I/I contributes more than one-half of the total wastewater flow that MWRA treats. This depletes pipeline capacity that would otherwise be available to transport sanitary flows. This situation can result in sewer surcharging, overflows of untreated sewage, more frequent combined sewage overflows, and higher pumping and treatment costs. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$397	\$164	\$233	\$55	\$178				

Project Status	41.3% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$460	\$397	-\$63	Jun-04	Jun-05	12 Mos.	\$228	\$233	\$5

### **Explanation of Changes**

- Project Cost –The Capacity Management Operations and Maintenance budget was reduced as work has been completed.
- Schedule – Delay due to awaiting Federal requirements on 550 Rules/CMOM.
- CAP Impact – Final payment for CMOM/Planning carried forward from FY03 increased spending during the CAP period.

## S.145 I&P Facility Asset Protection

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To protect the investment of MWRA ratepayers by ensuring effective maintenance and timely replacement of equipment and systems. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$117,166	\$1	\$117,165	\$1,614	\$79	\$4,862	\$7,055	\$2,710	\$100,845

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$11,912	\$117,166	\$105,254	Aug-10	Jun-19	106 Mos.	\$11,401	\$16,321	\$4,920

### **Explanation of Changes**

- Project Cost - New subphases added for Interceptor Renewal, Prison Point HVAC Upgrades design and construction, Alewife Brook Pump Replacement design and construction, 93A Force Main Replacement. Revised cost estimate for Headworks Screen Replacement and the award of the Rehab of 93A Lexington above the budget also increased the projects overall cost.
- Schedule – Schedule shift reflects the addition of the Intercept Renewal program extending project completion to June 2019.
- CAP Impact - Initial work for Interceptor Renewal program anticipated to begin in FY06 with \$3 million in projected expenditures within the cap period. Other new work noted above increases spending within the cap period.

## S.200 DI Plant Optimization

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

This project addresses the need for capital investment to optimize plant operations after initial start-up. The project provides for design, construction support and services, and construction for work at the Deer Island Treatment Plant necessary for safe and efficient start-up and optimal operation. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$33,020	\$8,283	\$24,738	\$2,474	\$7,939	\$7,284	\$2,310	\$3,649	\$1,082

Project Status	25.1% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$28,822	\$33,020	\$4,198	May-07	Sep-08	16 Mos.	\$20,392	\$23,656	\$3,264

### **Explanation of Changes**

- Project Cost: Increases due to the addition of new subphases for As Needed Design Phase 4-1 and As Needed Design 4-2 (\$1M each). The Ancillary Modifications Construction 1 was \$1.5M higher than the previous estimate due to revised cost estimates. ESDC/REI work was added to the scope for Ancillary Mods Design 4 and Ancillary Mods Design 5. Additionally, Ancillary Mods Construction 3-1 award amount was slightly higher than the estimate. Finally, the BHP Site Completion work was moved from the BHP to the DITP Capital budget.
- Schedule - Completion date for Ancillary Modifications Construction 4 extended to March 2008 due to additional scope revisions, competing project priorities, and staffing limits.
- CAP Impact - Additional as-needed design services increased spending by \$2 million within the cap period and transfer of BHP site completion contract to DI budget.

## S.206 DI Treatment Plant Asset Protection

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To protect the investment of MWRA ratepayers in the new Deer Island treatment facility by ensuring effective maintenance and timely replacement of equipment and systems. Construction of the Deer Island Treatment Plant (DITP) was one of the largest wastewater projects ever undertaken in the United States. DITP construction was a 12-year, \$3.5 billion (not including the cost of off-island residuals) effort started in 1988. With the completion of the Effluent Outfall Tunnel in September 2000 the plant now discharges treated effluent 9.5 miles offshore in Massachusetts Bay through a series of 55 diffusers spaced along the last 1.5 miles of the tunnel. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$102,697	\$1,871	\$100,826	\$727	\$5,055	\$7,603	\$12,259	\$8,522	\$66,660

Project Status	1.8% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$106,198	\$102,697	-\$3,501	Jun-13	Jun-14	12 Mos.	\$43,174	\$34,166	-\$9,008

### **Explanation of Changes**

- Project Cost – Reduction reflects the transfer of phases for maintenance facilities design/construction and construction support building reuse to the new MWRA Facilities Planning project (S.934) to centralize review and decision making for space planning. New subphases defined within this project are funded from the equipment replacement line item and result in no net increase to the project budget.
- Schedule – Several projects delayed due to staff limitations, and an incremental year is added annually to cover future Asset Protection Projects.
- Cap Impact - Revised anticipated level of work and pace of spending expected to be completed within the cap period. Projects have been reprioritized within the cap period, which deferred \$9.0 million to beyond FY08.

## S.261 Residuals

The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.

### Project Summary

To expand the residuals processing plant at the Fore River Staging Area (FRSA) in Quincy to provide the capacity to process all sludge produced at the Deer Island Treatment Plant. Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).

### Expenditure Forecast (\$ x 000) and Project Status

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$67,113	\$56,619	\$10,494	\$8,918	\$901				\$675

Project Status	84.4% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$58,872	\$67,113	\$8,241	Dec-01	Dec-01	None.	\$1,528	\$9,819	\$8,291

### Explanation of Changes

- Project Cost – Project budget increase reflects the Phase 3 Inside Construction Legal settlements.
- Schedule – None.
- CAP Impact - Settlement approved and paid in FY04.

## S.324 CSO Support

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

The goals of the CSO Program are to minimize CSO discharges, reduce beach closings following wet weather events, and maximize the beneficial use of CSO receiving waters. This project includes CSO conceptual planning, system master planning, and facilities planning/environmental review. It also includes directly related watershed planning activities, development of short-term CSO control measures (known as System Optimization Plans or SOPs), various as-needed technical support activities, and acquisition of land and easements required for CSO control plan implementation. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$50,834	\$37,304	\$13,530	\$1,008	\$5,905	\$3,071	\$1,780	\$1,766	\$0

Project Status	73.4% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$40,889	\$50,834	\$9,945	Dec-09	Dec-09	None.	\$3,596	\$13,530	\$9,934

### **Explanation of Changes**

- Project Cost – Higher Land/Easement expense associated with the North Dorchester Project at Conley Terminal, and permits for Union Park project are the primary drivers of the cost increase. Technical Review added additional cost relating to CSO affordability analysis and Wastewater System Optimization contract.
- Schedule – None.
- CAP Impact - Increased project cost as itemized above resulted in a greater spending during the CAP period.



### S.339 North Dorch Bay & Reserve Channel

The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.

#### **Project Summary**

Elimination of CSO discharges to South Boston beaches and minimization of CSO impacts to the Reserved Channel. The project is court mandated, is in accordance with MWRA's approved long-term CSO control plan, and is required to meet DEP water quality standards. The recommended plan includes a 17-foot diameter storage tunnel and ancillary facilities to eliminate CSO discharges to North Dorchester Bay and collect stormwater in up to a one-year storm event. It also includes construction of a new storm drain to redirect certain stormwater discharges to South Dorchester Bay to achieve a higher level of stormwater control along the beaches of North Dorchester Bay. For Reserve Channel, the recommended plan proposes sewer separation to reduce CSO discharges. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

#### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$270,663	\$13,662	\$257,001	\$1,451	\$1,245	\$2,042	\$18,823	\$29,003	\$204,437

Project Status	5.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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#### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$225,086	\$270,663	\$45,577	Oct-09	Jul-20	129 Mos.	\$97,829	\$52,564	-\$45,265

#### **Explanation of Changes**

- Project Cost – Significant changes in project scope have increased the overall budget, including Tunnel Construction, Dewater/Odor Control Construction, Morrissey Blvd Drain, Tunnel & Facilities CM Services, and Reserved Channel Sewer Separation.
- Schedule – Change in project scope.
- CAP Impact – Schedule shift reduced projected spending during the CAP period.

### S.340 S. Dorch Bay Sew Separ (Fox Pt.)

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

#### **Project Summary**

This project, together with sewer separation at Commercial Point, will eliminate CSO discharges to South Dorchester Bay by separating combined sewer systems in Dorchester. The project is court mandated, is in accordance with MWRA's approved long-term CSO control plan, and is required to meet DEP water quality standards. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

#### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$53,612	\$26,196	\$27,416	\$7,899	\$11,113	\$5,184	\$1,243	\$1,170	\$807

Project Status	48.9% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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#### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$53,840	\$53,612	-\$228	Nov-06	Nov-06	None.	\$26,978	\$26,609	-\$369

#### **Explanation of Changes**

- Project Cost – Overall construction costs declined reflecting revised cost estimates, lower contingency, and reduced inflation on unawarded construction contracts. These decreases were partially offset by a net increase to design costs primarily as a result of revised eligibility for CS/RI.
- Schedule – None.
- CAP Impact – Project cost changes identified above have reduced the contribution over the CAP period.

### S.341 S. Dorch Bay Sew Separ (Comm. Pt.)

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

#### **Project Summary**

This project, together with sewer separation at Fox Point, will eliminate CSO discharges to South Dorchester Bay by separating combined sewer systems in Dorchester. The project is court mandated, is in accordance with MWRA's approved long-term CSO control plan, and is required to meet DEP water quality standards. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

#### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$58,456	\$27,062	\$31,394	\$6,533	\$6,591	\$5,140	\$8,022	\$4,368	\$740

Project Status	46.3% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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#### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$59,820	\$58,456	-\$1,364	Nov-07	Nov-07	None.	\$31,656	\$30,654	-\$1,002

#### **Explanation of Changes**

- Project Cost – Overall construction costs declined reflecting revised cost estimates, lower contingency and reduced inflation on unawarded contracts. Reductions were partially offset by added costs for sediment removal and revised cost estimates and unanticipated work.
- Schedule – None.
- CAP Impact - Project cost changes identified above have reduced the contribution over the CAP period.

## S.342 Neponset River Sewer Separation

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

Elimination of CSO discharges to the Neponset River and protection of water quality at downstream swimming areas in South Dorchester (primarily Tenean Beach) by separating combined sewer systems in the Neponset section of Dorchester and by permanently closing CSO regulators associated with outfalls BOS093 and BOS095. The project is court mandated, is in accordance with MWRA's approved long-term CSO control plan, and is required to meet DEP water quality standards. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$2,681	\$2,444	\$237	\$237					

Project Status	91.2% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$2,681	\$2,681	\$0	Oct-02	Oct-02	None.	\$237	\$237	\$0

### **Explanation of Changes**

- Project Cost – None.
- Schedule – None.
- CAP Impact - None.

### S.343 Constitution Beach Sewer Separation

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

#### **Project Summary**

Elimination of CSO discharges at the Constitution Beach CSO facility by separating combined sewer systems in parts of East Boston. The project is court mandated, is in accordance with MWRA's approved long-term CSO control plan, and is required to meet DEP water quality standards. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

#### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$3,769	\$3,769	\$0						

Project Status	100.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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#### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$3,769	\$3,769	\$0	Apr-02	Apr-02	None.	Complete	Complete	N/A

#### **Explanation of Changes**

- Project Cost – None.
- Schedule – None.
- CAP Impact - None.

## S.344 Stony Brook Sewer Separation

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To minimize CSO discharges to Stony Brook Conduit and the Back Bay Fens, both of which drain to the Charles River, by separating combined sewer systems in parts of Roxbury and Jamaica Plain. Implementation of the recommended sewer separation plan will reduce the number of overflows to the Stony Brook Conduit from as many as 22 to zero in a typical year. This project is court mandated, is in accordance with MWRA's approved long-term CSO control plan, and is required to meet DEP water quality standards. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$42,646	\$15,924	\$26,722	\$8,842	\$11,621	\$5,813	\$446		

Project Status	37.3% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$42,378	\$42,646	\$268	Sep-06	Sep-06	None.	\$26,442	\$26,722	\$280

### **Explanation of Changes**

- Project Cost – Combination of several contract awards being higher than estimated partially offset by awards under engineer's estimate and inflation adjustments for unawarded contracts resulted in an overall budget increase.
- Schedule – None.
- CAP Impact - Project cost changes identified above have increased the contribution over the CAP period.

## S.346 Cambridge CAM002-004 Sew.Separation

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To minimize CSO discharges to Alewife Brook by separating combined sewer systems in parts of Cambridge. This project is court mandated, is in accordance with MWRA's approved long-term CSO control plan, and is required to meet DEP water quality standards. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$37,875	\$13,935	\$23,940	\$2,372	\$3,793	\$460	\$1,415	\$3,262	\$12,638

Project Status	36.8% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$38,496	\$37,875	-\$621	Mar-12	Jun-11	-9 Mos.	\$4,618	\$11,302	\$6,684

### **Explanation of Changes**

- Project Cost – Decrease reflects the removal of Construction MWR003 Gate & Siphon subphase partially offset by the amendment for Final Design for contract 12 (stormwater outfall and wetland basin), additional work performed under extended MEPA review process, and preparation of the Second Supplemental Preliminary Design Report.
- Schedule –Scheduled accelerated in response to DEP comments.
- CAP Impact – Schedule shift as described above increased the projects spending during the CAP window.

## S.347 East Boston Branch Sewer Relief

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To increase hydraulic capacity and provide long-term structural integrity through the replacement or rehabilitation of the existing sewers. Completion of this project to upgrade MWRA's East Boston Branch Sewer will increase wet weather transport capacity and reduce CSO discharges along the East Boston shoreline, minimizing CSO impacts to the Mystic/Chelsea Confluence and Boston Inner Harbor and facilitating the beneficial uses of these receiving water segments most of the time. The project is court mandated, is in accordance with MWRA's approved long-term CSO control plan, and is required to meet DEP water quality standards. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$63,115	\$3,045	\$60,071	\$5,008	\$1,322	\$7,476	\$22,922	\$23,295	\$48

Project Status	4.8% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$58,544	\$63,115	\$4,571	Jan-08	Jun-08	5 Mos.	\$55,133	\$60,023	\$4,890

### **Explanation of Changes**

- Project Cost – Restoration of Design CS/RI and ESDC budgets to meet project needs as well as change orders including relocation of bypass pumping and additional bypass pumping capacity, removal of flow obstructions.
- Schedule – Delay associated with project reevaluation.
- CAP Impact - Project cost changes identified above have reduced the contribution over the CAP period.



## S.348 BOS019 Storage Conduit

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To control CSO discharges at outfall BOS019, in accordance with MWRA's approved long-term CSO control plan. Outfall BOS019 discharges to the Little Mystic Channel in Charlestown. The project is court mandated, is in accordance with MWRA's approved long-term CSO control plan, and is required to meet DEP water quality standards. MWRA completed a reassessment of the BOS019 Storage Conduit. The assessment verified that a storage conduit to reduce overflows at BOS019 is a cost effective alternative to meet the CSO control goals. A storage conduit volume of 670,000 gallons is necessary to meet the 1997 CSO control goals. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$10,019	\$449	\$9,571	\$1,165	\$1,734	\$5,408	\$1,232	\$32	\$0

Project Status	4.5% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$20,435	\$10,019	-\$10,416	Sep-06	Sep-06	None.	\$19,311	\$9,571	-\$9,740

### **Explanation of Changes**

- Project Cost – Project budget decrease reflects the reduction in Construction 1 spending as some work will be transferred to a Community Managed sewer separation project. Other reductions include Design CS/RI amendment for changes in level of effort to design and construct BOS019 Storage Conduit only and reduction of CS/RI services for BOS019 only. These reductions were partially offset by revised base costs estimates for BOS019 Construction which includes larger storage conduit, higher hazmat costs, O&M enhancements (including SCADA) and security enhancements.
- Schedule – None.
- CAP Impact - Project cost changes identified above have reduced the contribution over the CAP period.

### S.349 Chelsea Trunk Sewer

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

#### **Project Summary**

To control CSO discharges at outfalls CHE002, CHE003, CHE004, and CHE008 in accordance with MWRA's approved long-term CSO control plan. These outfalls discharge to the Mystic River/Chelsea Creek Confluence and Chelsea Creek. In addition, the project will relieve the MWRA Chelsea Branch Sewer as well as the lower portion of the Revere Extension Sewer to improve service and control surcharging. The project is court mandated, is in accordance with MWRA's approved long-term CSO control plan, and is required to meet DEP water quality standards. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

#### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$29,757	\$29,756	\$1	\$1					

Project Status	100.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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#### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$30,676	\$29,757	-\$919	Jun-02	Jun-02	None.	\$793	\$1	-\$792

#### **Explanation of Changes**

- Project Cost – Design CS/RI budget reduced to reflect actual spending.
- Schedule – None.
- CAP Impact - Project cost changes identified above have reduced the contribution over the CAP period.

## S.350 Union Park Detention Treatment Fac

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To reduce the frequency and impacts of CSO discharges from the BWSC Union Park Pumping Station (CSO outfall BOS070). Outfall BOS070 discharges into the Fort Point Channel. This project is court mandated, is in accordance with MWRA's approved long-term CSO control plan, and is required to meet DEP water quality standards. Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$43,368	\$5,883	\$37,486	\$12,668	\$23,293	\$2,373	-\$853	\$4	\$1

Project Status	13.6% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$40,145	\$43,368	\$3,223	Sep-05	Jan-06	4 Mos.	\$35,481	\$37,486	\$2,005

### **Explanation of Changes**

- Project Cost – Change orders to perform site remediation within the abandoned pump station; remove and dispose of wood piles and soil containing debris; redesign earth retention system for east basin wall; expected change orders including excavate pocket of hazardous material and oxidation catalysts, time extension. Cost increase partially offset by BWSC Construction repayment and reimbursement. Design amendment increasing ESDC services for additional quantity of submittals, RFIS, and extended contract duration also increased project's overall cost.
- Schedule – Schedule shift to coincide with completion of construction.
- CAP Impact - Project cost changes identified above have increased the contribution over the CAP period.

### S.351 BWSC Floatables Controls

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

#### **Project Summary**

To limit the discharge of floatable materials from eight BWSC combined sewer outfalls and reduce the number of beach closings following wet weather events. The project is court mandated, is in accordance with MWRA's approved long-term CSO control plan, and is required to meet DEP water quality standards. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

#### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$933	\$933	\$0	\$0					

Project Status	100.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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#### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$933	\$933	\$0	Mar-02	Mar-02	None.	Complete	Complete	N/A

#### **Explanation of Changes**

- Project Cost – None.
- Schedule – None.
- CAP Impact - None.

## S.352 Cambridge Floatables Controls

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To limit the discharge of floatable materials from nine Cambridge CSO outfalls. This project is court mandated, is in accordance with MWRA's approved long-term CSO control plan, and is required to meet DEP water quality standards. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$2,520	\$377	\$2,143		\$758	\$795	\$590		

Project Status	15.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$2,520	\$2,520	\$0	Jun-05	Dec-06	18 Mos.	\$1,595	\$2,143	\$548

### **Explanation of Changes**

- Project Cost – None.
- Schedule – Delay due to extended MEPA process.
- CAP Impact – Increase spending within cap period due to construction work budgeted and not completed in FY03 to be completed within the CAP period.

## S.353 Upgrade Existing CSO Facilities

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To minimize CSO impacts to the Lower Charles River, Upper Inner Harbor, Mystic/Chelsea Confluence, and South Dorchester Bay receiving waters by upgrading five MWRA CSO treatment facilities (Fox Point, Commercial Point, Cottage Farm, Prison Point, and Somerville Marginal), closing outfall MWR010, and providing floatables control at all MWRA CSO outfalls not associated with treatment facilities (located along the Charles River). These projects are court mandated, are in accordance with MWRA's approved long-term CSO control plan, and are required to meet DEP water quality standards. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$22,301	\$22,301	\$0						

Project Status	100.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$22,384	\$22,301	-\$83	Dec-01	Dec-01	None.	Complete	Complete	N/A

### **Explanation of Changes**

- Project Cost – Design budget reduced by \$82K to reflect actual spending. Contract completed.
- Schedule – None.
- CAP Impact – N/A

## S.354 Hydraulic Relief Projects

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

Elimination of hydraulic restrictions between local and MWRA systems at locations in Boston and Cambridge to improve transport of wet weather flows, thereby reducing CSO discharges into the Mystic and Charles Rivers. The project is court mandated, is in accordance with MWRA's approved long-term CSO control plan, and is required to meet DEP water quality standards. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$2,295	\$2,301	-\$7	-\$7					

Project Status	100.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$2,352	\$2,295	-\$57	Aug-00	Aug-00	None.	\$35	-\$7	-\$42

### **Explanation of Changes**

- Project Cost – Design budget reduced since contract is completed.
- Schedule – None.
- CAP Impact - Project cost changes reduced the contribution over the CAP period.

## S.355 MWR003 Gate & Siphon

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

New Project added to the Proposed CIP. Funding and scope of work is a transfer from the community managed Cambridge Sewer Separation project as this project will now be managed by MWRA staff. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$1,371	\$0	\$1,371		\$44	\$326	\$781	\$214	\$6

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$0	\$1,371	\$1,371	0	Aug-07	N/A	\$0	\$1,365	\$1,365

### **Explanation of Changes**

- Project Cost – Scope of work transferred from Cambridge Sewer Separation Project
- Schedule –New Project
- CAP Impact – New Project



## S.356 Fort Point Channel Sewer Separation

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

New Project added to the CIP to control CSO discharges to Outfalls BOS072 and BOS073 in accordance with the MWRA's approved long-term CSO Control Plan. MWRA conducted an update of baseline flow conditions and other project assumptions and a full reassessment of the cost and performance of the Storage Conduit to reevaluate the recommended plan with new information change previously assumed conditions and to determine if there were less costly project alternatives that could meet CSO Control and Water Quality goals. Schedule Six was amended to remove the Fort Point Channel Storage Conduit project and replace with sewer separation and system optimization for Outfalls BOS072-073. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$5,095	\$0	\$5,095		\$1,188	\$2,232	\$1,675		

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$0	\$5,095	\$5,095		Mar-07	N/A	\$0	\$5,095	\$5,095

### **Explanation of Changes**

- Project Cost – New project added as a result of the Notice of Project Change.
- Schedule –New Project
- CAP Impact – New Project

## S.542 Walnut Hill Water Treatment Plant

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To provide high quality drinking water to MWRA customers and to ensure that the water delivered from the Wachusett Reservoir meets the drinking water quality standards established by the federal Safe Drinking Water Act (SDWA). Part of this objective will be met by constructing a 405 million-gallon per day (maximum) water ozonation/chloramination treatment plant primarily in Marlborough with portions of the facility located in Southborough and Northborough. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$414,426	\$286,022	\$128,404	\$44,244	\$25,440	\$7,890	\$4,224	\$3,395	\$43,211

Project Status	69.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$357,383	\$414,426	\$57,043	Feb-05	Mar-05	1 Mos.	\$66,840	\$85,192	\$18,352

### **Explanation of Changes**

- Project Cost – Project increase reflects the addition of several new subphases, including Ultra Violet Disinfection Design and Construction, Design CS/RI-Wachusett WTP for post start-up operational assistance and As-Needed Tech Assistance. Revised cost estimates for CP6 and CP7 to reflect expanded scope and new design subphase in addition to project management, contract management, and precommissioning/checkout/testing. Project changes orders and expected change orders for multiple subphases including WHCP4 also contributed to the cost increase.
- Schedule – None.
- CAP Impact - Total change is \$18.4 million of which \$8.1 million is for cost increases and \$6.4 million is for new work. Cost changes, as mentioned above, include additional design and construction management services, additional change order work for inspection of the Cosgrove Tunnel and security improvements, and revised estimate for CP-7 ICCF construction. New scope spending for as-needed design and design services for the UV are expected to start in FY06. Project cost changes identified above have increased the contribution over the CAP period.

## S.543 Quabbin Water Treatment Plant

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To improve the quality of drinking water delivered to the Chicopee Valley Aqueduct (CVA) communities of Chicopee, Wilbraham, and South Hadley Fire District No. 1, and to ensure that the water delivered meets the drinking water quality standards established by the federal Safe Drinking Water Act. Improvements to the CVA system thus far have included the construction of covered storage at Nash Hill and construction of disinfection and contact time (CT) monitoring facilities. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$14,983	\$9,443	\$5,540	\$340	\$472	\$25	\$177	\$273	\$4,253

Project Status	63.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$15,024	\$14,983	-\$41	Apr-09	Jul-10	15 Mos.	\$3,914	\$1,286	-\$2,628

### **Explanation of Changes**

- Project Cost – None.
- Schedule –Pilot study was delayed.
- CAP Impact – Schedule delay has shifted some project spending outside of the CAP period.

## S.544 Norumbega Covered Storage

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To help provide high quality drinking water to MWRA customers and to ensure that the water meets the drinking water quality standards established by the federal Safe Drinking Water Act (SDWA) by constructing a 115 million gallon covered storage facility at Norumbega Reservoir. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$106,446	\$89,274	\$17,172	\$12,223	\$3,255	\$15	\$730	\$332	\$617

Project Status	83.9% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$107,166	\$106,446	-\$720	Jan-07	Jan-10	36 Mos.	\$17,627	\$16,555	-\$1,072

### **Explanation of Changes**

- Project Cost – Revised estimates for Design/Build primarily for revised estimate for security hardening reduced and reduced Owners Representative expense for field oversight no longer anticipated. These reductions were partially offset by additional change orders including assemble and disassemble temporary chloramination facility, disinfection of tank, spare parts, and security system.
- Schedule – Remaining construction schedule change due to project sequencing.
- CAP Impact - Project cost changes identified above have reduced the contribution over the CAP period.

## S.545 Blue Hills Covered Storage

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To ensure sufficient distribution storage for MWRA's Southern High Service Area. Presently, the area relies on the existing open reservoir for emergency storage, creating the potential for supply disruption if repairs are needed on a major transmission line for Quincy and other communities in the Southern High Service Area. Covered distribution storage will also equalize pressure at the extremities of the Southern High pressure zone and provide potable emergency storage in case of unexpected interruptions of supply. New covered storage facilities at the Blue Hills Reservation will have a capacity of 20 million gallons. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$32,830	\$1,281	\$31,548	\$223	\$3,135	\$10,986	\$10,987	\$6,157	\$60

Project Status	3.9% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$32,314	\$32,830	\$516	Jan-07	Mar-08	14 Mos.	\$30,921	\$31,488	\$567

### **Explanation of Changes**

- Project Cost –Design Build incorporated security system into project and an expected amendment for additional permitting and environmental oversight services accounted for project budget increase.
- Schedule – Delay in wetlands permitting
- CAP Impact - Project cost changes identified above have increased the contribution over the CAP period.

## S.546 Northern Intermed. High Covered Storage

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To provide an additional storage facility for the Northern Intermediate High System to ensure adequate water pressure and to provide redundancy to the existing Bear Hill Tank. Construction of a new six million gallon covered storage facility near the existing tank will double available storage for the Northern Intermediate High System. Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$6,550	\$0	\$6,550		\$75	\$375	\$50		\$6,050

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$6,056	\$6,550	\$494	Dec-19	Dec-19	None.	\$0	\$500	\$500

### **Explanation of Changes**

- Project Cost – New subphase for Northern Int High/Int. High Study to evaluate redundancy requirements including evaluating and recommending a preferred route for the new transmission main (Sect 29).
- Schedule – None.
- CAP Impact - New subphase noted above to be completed within the cap period.

## S.549 SEH Additional Storage

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To increase capacity and ensure MWRA's ability to meet current and projected water demand by constructing a new 3.6 million-gallon tank. Hydraulic analysis and operational problems indicate the need for additional storage capacity for the Southern Extra High Service Area.. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$5,892	\$0	\$5,892				\$351	\$280	\$5,261

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$5,898	\$5,892	-\$6	Jun-12	Dec-12	6 Mos.	\$702	\$631	-\$71

### **Explanation of Changes**

- Project Cost – None.
- Schedule - Schedule pushed out pending a more comprehensive review of the Southern Extra High system.
- CAP Impact – Shifted start of final design by seven months to January 2008, reducing expenditures within the cap period.

## S.550 Low Service Storage Near Spot Pond

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To meet state and federal drinking water guidelines and MWRA's goal of providing a one-day supply of storage by constructing a new storage facility. With the Weston and Spot Pond Reservoirs removed from service, MWRA no longer meets the one-day supply goal. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$28,174	\$233	\$27,941						\$27,941

Project Status	0.8% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$28,062	\$28,174	\$112	Apr-14	Apr-14	None.	Future	Future	N/A

### **Explanation of Changes**

- Project Cost – New subphase added for environmental review with owner representation services for design/construction offset by closeout of existing environmental review contract as project schedule was previously shifted to start in April 2010.
- Schedule – None.
- CAP Impact - Future project falls outside CAP window.



## S.597 Winsor Dam Hydroelectric

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To license and rehabilitate the turbine generator at the Winsor Dam in Belchertown to allow the dam to produce hydroelectric power to be sold to the electric grid, or to potentially wheel power to other MWRA facilities. Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$1,570	\$38	\$1,532						\$1,532

Project Status	2.4% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$783	\$1,570	\$787	Nov-12	Nov-13	12 Mos.	\$15	\$0	-\$15

### **Explanation of Changes**

- Project Cost – Revised cost to include selection of a new turbine generator rather than rehab existing generator and Preliminary Permit Study & License to restart the planning and licensing when project commences again in 2011.
- Schedule - Shifted schedule due to competing project priorities and staffing limits.
- CAP Impact – Shifted permitting, study, and license spending closes to start of design in July 2011, which is outside the cap period.

## S.601 Sluice Gate Rehabilitation

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

Completion of this project will improve the condition of and access to sluice gates used to regulate the release of water from upstream reservoirs and streams via aqueducts in accordance with legislative and flood control requirements. Motorized gates will replace manual gates and 12 facilities will be rehabilitated at Sudbury Reservoir, Framingham Reservoir, Spot Pond, and various locations along the Sudbury Aqueduct. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$9,621	\$4,255	\$5,366	\$1,293	\$2,594	\$1,449	\$31		-\$1

Project Status	44.2% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$9,400	\$9,621	\$221	Jul-05	Sep-05	2 Mos.	\$5,161	\$5,366	\$205

### **Explanation of Changes**

- Project Cost – Award for Construction 2 greater than originally anticipated and expected change order to remove and replace deteriorated masonry work at the Bradley Basin Gatehouse and the four Waste Weir Buildings partially offset by the elimination of an expected amendment for Design CS/RI requesting an extension of 29 months.
- Schedule – None.
- CAP Impact - Project cost changes identified above have increased the contribution over the CAP period.

## S.604 MetroWest Tunnel

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To provide transmission redundancy for the Hultman Aqueduct ensuring reliable water delivery and providing sufficient hydraulic capacity to support the new Walnut Hill Water Treatment Plant and covered storage distribution facilities. This project consists of construction of a 17.6 mile deep rock tunnel from Shaft D in Marlborough to Shaft 5 of the City Tunnel in Weston, and to Shaft W, also in Weston, as well as the construction of a covered storage facility at Loring Road in Weston. Also includes construction of shafts and valve chambers for connections of Shaft 4 in Southborough and to the Norumbega Covered Storage facility. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$676,149	\$614,065	\$62,084	\$8,518	\$4,238	\$992	\$1,718	\$5,260	\$41,358

Project Status	90.8% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$659,598	\$676,149	\$16,551	Dec-10	Dec-13	36 Mos.	\$31,119	\$20,725	-\$10,394

### **Explanation of Changes**

- Project Cost -The budget increase of \$16.6 million includes the addition of a new subphase, CP6A Hultman Interconnection Structural/Civil Inspection for \$15.0 million. Other increases include additional design work for CP-6 based on new cost estimates that was exactly offset by a \$1.8 million decrease in CP-1 as lining and concrete cost were less than originally estimated. Other budget increases include Middle Tunnel (CP2) which increased by \$0.9 million as unit price and material quantities used were more than originally budgeted and CM/RI increased \$0.7 million to provide additional resident inspection and start-up support, quality assurance, safety project support, and project specific professional liability. Owner Controlled Insurance Program (OCIP) increased by \$0.8 million based on revised estimate for additional labor as actual loss experience was more than originally estimated.
- Schedule - Hultman Rehabilitation (CP-9) completion date extended to December 2013. Critical interconnection and structural work packaged in CP-6A and 6B.
- CAP Impact – Net reduction within cap period based package changes between contracts 6A and 6B, offset by remaining work on the west tunnel (CP-1) budgeted in FY03 that carried forward within the cap period.

## S.614 Metropolitan Tunnel Loop

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To evaluate the need for and means of providing redundancy for the City Tunnel, the Dorchester Tunnel, and the City Tunnel Extension in order to ensure reliable transmission capability and allow for inspection, maintenance, and repair of these facilities. Current plans for full redundancy recommend a closed loop tunnel system, as originally planned in 1936 by the system's designers, created by constructing a 16.5-mile deep rock tunnel from Norumbega Reservoir in Weston to Fells Reservoir and the City Tunnel Extension. A supplemental or alternative plan would be a tunnel loop from Norumbega Reservoir to Blue Hills Reservoir and the Dorchester Tunnel (southern tunnel loop). Because this study will examine both northern and southern routes as well as other alternatives and incremental levels of redundancy, it has been designated the Metropolitan Tunnel Loop. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$2,897	\$0	\$2,897		\$0	\$225	\$245	\$525	\$1,902

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$3,001	\$2,897	-\$104	Jun-09	Dec-10	18 Mos.	\$1,410	\$995	-\$415

### **Explanation of Changes**

- Project Cost – Field Investigations/Facilities Plan subphase transferred to Quabbin Facilities Inspection.
- Schedule – Delay due to staffing limits and other priority projects.
- CAP Impact - Shifted start of Tunnel Shaft Rehabilitation to April 2009, outside the cap period.

## S.615 Chicopee Valley Aqued. Redundancy

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To provide redundancy for water service for the three communities supplied by the Chicopee Valley Aqueduct (CVA) in case of a CVA failure or shutdown. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$9,609	\$823	\$8,786	\$192	\$3,168	\$3,716	\$1,711		-\$1

Project Status	8.6% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$8,523	\$9,609	\$1,086	Jun-06	Dec-06	6 Mos.	\$6,916	\$8,786	\$1,870

### **Explanation of Changes**

- Project Cost – Scope changes resulted in increased project costs. Increased scope includes combining Route 21 Chamber Construction into the Pipeline Redundancy Construction contract. Pipeline Redundancy Design amendments to provide engineering services during construction and SOP's and training and for delay due to community indecision and emergency connections will also increase overall project costs.
- Schedule –Delay due to staffing limits and other priority projects.
- CAP Impact – Not applicable as Chicopee Valley Aqueduct project costs are excluded from CAP calculation as these costs are recovered through the CVA assessment.

## S.616 Quabbin Transmission System

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To ensure continued reliable delivery of high quality water to MWRA customer communities through inspection, evaluations, and rehabilitation as needed of the aging Quabbin Tunnel. The hydraulic control facilities of the Quabbin Tunnel are 70 to 80 years old and badly in need of renewal and upgrade. This is one of six projects that will upgrade the older working parts of the aqueduct-tunnel system and improve its interconnections with the distribution piping systems it supplies. Based on the findings and recommendations of this inspection phase, MWRA will add design and construction phases at a later date. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$13,350	\$0	\$13,350	\$140	\$1,000	\$2,060	\$1,525	\$300	\$8,325

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$1,271	\$13,350	\$12,079	Jun-06	Jun-10	49 Mos.	\$1,271	\$5,025	\$3,754

### **Explanation of Changes**

- Project Cost -New subphases added for two phase approach to Oakdale Valves (Phase 1 for short term rehab and Phase 2 for long term improvements) increased design and construction costs by \$2.1 million and \$9.8 million, respectively.
- Schedule - Project scope change to include a two phase approach to rehab the Oakdale facility including new phase for Oakdale Valves.
- CAP Impact - New work including a two-phase approach to rehabilitate the Oakdale Hydropower Generator bypass Facility. The facility shows signs of deterioration, by-pass valves not properly functioning, pressure relief structure is old and corroded. Phase 1 will replace by-pass valves immediately (\$1.8m). Phase 2 design to start in FY06 with \$1.5m to be expended within the cap period. Phase 2 construction is outside the cap period.

## S.617 Sudbury / Weston Aqueduct Repairs

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To ensure continued reliable delivery of high quality water to MWRA customer communities through study, design, and implementation of repairs to the Sudbury and Weston Aqueducts. These backup systems are both more than 100 years old, and need to be ready for emergency use. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$40,086	\$260	\$39,826	\$13	\$202	\$300	\$111		\$39,200

Project Status	0.6% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$672	\$40,086	\$39,414	Dec-06	Nov-13	84 Mos.	\$399	\$626	\$227

### **Explanation of Changes**

- Project Cost -The increase reflects the addition of a new design and construction phase added to ensure the availability of the Aqueduct as a safe and reliable emergency supply until the Northern or Southern Tunnel loop is built. Two initial alternatives are under consideration: Option 1 to rehabilitate the entire 17.4 miles or Option 2 to build a new tunnel from a shaft at Norumbega to the Sudbury Aqueduct in Wellesley. Revised estimate for inspection phase to include analysis of alternatives.
- Schedule - Change in completion date reflects addition of construction phase with a completion date in November 2013. December 2006 completion date is for existing inspection phase in the CIP.
- CAP Impact – Additional services for analysis of alternatives increased spending within the cap period.

## S.618 Northern High NW Trans Sect 70-71

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

Improve service reliability by rehabilitation of 46,000 linear feet of pipeline serving the northern high service area. Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$35,784	\$0	\$35,784						\$35,784

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$35,820	\$35,784	-\$36	Nov-18	Nov-18	None.	Future	Future	N/A

### **Explanation of Changes**

- Project Cost – Inflation adjustment due to new ENR index.
- Schedule – None.
- CAP Impact - Future project falls outside CAP window.



## S.677 Valve Replacement

The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.

### Project Summary

To retrofit approximately 500 blow-off valves and replace several hundred main line valves within the pipeline distribution system. Blow-off valve retrofits eliminate cross-connections into sewers or drainage piping. Main line valve replacements improve MWRA's ability to respond to emergency situations such as pipe breaks and provide tight shutdown for pipeline construction projects. Faster responses reduce negative impacts on customers. Combining the two valve replacement efforts reduces the need for repeat construction at sites and alleviates traffic impacts, re-paving needs, and other site-specific issues. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### Expenditure Forecast (\$ x 000) and Project Status

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$14,048	\$5,666	\$8,382	\$718	\$2,082	\$1,251	\$1,501	\$629	\$2,201

Project Status	40.3% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$14,622	\$14,048	-\$574	May-09	May-10	12 Mos.	\$7,321	\$6,180	-\$1,141

### Explanation of Changes

- Project Cost – Construction 5 Actual award amount. Under budgeted amount partially offset by Construction 4 Change orders to adjust time and materials and repair sink hole and drain line.
- Schedule – Delay to comply with CAP.
- CAP Impact - Project cost changes identified above and the schedule shift have reduced the contribution over the CAP period.

## S.678 Boston Low Serv.-Pipe & Valve Rehab

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To improve the condition and operability of the pipelines comprising the Boston Low Service System. These unlined, cast iron pipelines are more than 120 years old. The mains have numerous non-functional valves, and have experienced frequent breaks. Improvements include some pipeline replacement, cleaning and lining, and selective abandonment of unneeded segments. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).* Project nearing completion and scheduled to be removed from the CIP prior to the next budget cycle.

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$23,873	\$23,328	\$545	\$405	\$140				\$0

Project Status	97.7% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$24,503	\$23,873	-\$630	Jul-03	Sep-03	2 Mos.	\$403	\$545	\$142

### **Explanation of Changes**

- Project Cost -A final closeout credit change order for unexpended bid items reduced the contract amount for Construction Beacon Street by \$700,000.
- Schedule – Beacon Street phase extended two months to September 2003.
- CAP Impact – Schedule change above increased spending within the cap period.

## S.683 Heath Hill Road Pipe Replacement

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To repair and improve pipelines and valves in the Southern High and Southern Extra High Service areas which are in poor condition. The targeted pipelines in Brookline and Boston have experienced numerous leaks and breaks, and their hydraulic performance is inadequate. Work includes a fast-track pipe replacement phase, and mostly cleaning and lining along the other pipe segments. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$19,047	\$9,487	\$9,560	\$526	\$300	\$96	\$4,434	\$3,616	\$588

Project Status	49.8% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$17,917	\$19,047	\$1,130	Jun-08	Jun-08	None.	\$8,211	\$8,971	\$760

### **Explanation of Changes**

- Project Cost – Revised cost estimate for Construction Section 52 Rehab includes more structural work is required than originally envisioned increased overall project costs.
- Schedule – None.
- CAP Impact - Project cost changes identified above have increased the contribution over the CAP period.

## S.689 James L. Gillis Pump Station Rehab.

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To improve and modernize pumping facilities and equipment at the 90-year old formerly named Spot Pond Pump Station. These improvements directly benefit the Northern High and Northern Intermediate High systems, and improve MWRA's system-wide emergency response capabilities. Project components included rehabilitation of the pump station, installation of a new suction line, rehabilitation of discharge lines, construction of a sanitary sewer, and remediation of a contaminated land site. Completion of this project also enables MWRA to comply with Safe Drinking Water Act requirements. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$34,284	\$33,109	\$1,176	\$298	\$120	\$75	\$658	\$24	\$1

Project Status	96.6% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$34,513	\$34,284	-\$229	Nov-03	Nov-03	None.	\$1,405	\$1,176	-\$229

### **Explanation of Changes**

- Project Cost – Project Cost - Final closeout of design/construction services contract for the pump station less than budgeted.
- Schedule – None.
- CAP Impact - Greater than budgeted spending in FY03 for construction of discharge pipe contract reduced spending within the CAP Period.

## S.692 NHS - Section 27 Improvements

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To improve service to the communities north of Lynn by rehabilitating or replacing a segment of 98-year old pipe in Lynn which suffers from poor hydraulic performance and frequent leakage. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$2,330	\$124	\$2,206	\$0	\$1	\$1	\$1	\$1	\$2,202

Project Status	5.3% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$2,332	\$2,330	-\$2	Mar-12	Mar-12	None.	\$0	\$3	\$3

### **Explanation of Changes**

- Project Cost – None.
- Schedule – None.
- CAP Impact - None.

## S.693 NHS - Revere & Malden Pipeline Impr

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To improve the delivery capabilities of major distribution lines serving the Northern High System. The existing pipelines are inadequate and suffer from extensive corrosion and leakage. Replacement, rehabilitation, and/or reinforcement will provide a strong and reliable means to convey water from the City Tunnel Extension to communities in the northern and eastern portions of the Northern High Service Area. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$32,561	\$23,854	\$8,708	\$13	\$8	\$8	\$2,007	\$1,243	\$5,429

Project Status	73.3% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$31,447	\$32,561	\$1,114	Nov-08	Nov-10	24 Mos.	\$5,923	\$3,279	-\$2,644

### **Explanation of Changes**

- Project Cost – Increase for new work to replace approximately 2,000 feet of 36-inch pipe of the Shaft 9A-D line that remains to be connected to the newly constructed Spot Pond Pipeline (Section 99). This extension will complete the piping grid around Shaft 9A to the new Section 99 and Section 53.
- Schedule - Revised to reflect anticipated completion date for new Shaft 9A-D extension work noted above and shifted to comply with CAP.
- CAP Impact – Deferred start of construction on Section 68 and 53A by one-year, from June 2007 to June 2008 to comply with cap.

## S.702 New Connecting Mains - Shaft 7 to ...

The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.

### **Project Summary**

To provide redundancy and improve the reliability of WASM 3; provide hydraulic looping and redundancy, enable Intermediate High Sections 59 and 60 to be taken off-line for rehabilitation, and improve water quality by reducing the length of unlined cast iron water mains in the MWRA system. Completion of this project will help provide the basis for a strong hydraulic network of piping among WASM 3, WASM 4, the City Tunnel, and the possible future Metropolitan Tunnel Loop. The future conversion of Sections 23 and 24 to the Intermediate High Service system to create a unified Intermediate High Service area connecting the Belmont and Commonwealth Avenue pump stations will also be possible. This project will involve installation of 31,415 linear feet of new pipeline, and rehabilitation of 62,910 linear feet of pipeline. Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$37,842	\$3,050	\$34,792	\$534	\$2,180	\$1,651	\$7,575	\$7,512	\$15,340

Project Status	8.1% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$66,144	\$37,842	-\$28,302	Nov-07	Sep-14	83 Mos.	\$48,039	\$19,452	-\$28,587

### **Explanation of Changes**

- Project Cost – Revised N. Segment (CP1A) New 48" (\$8.9M) Project rescope from a 19k If pipe to an 8k If pipe. Separate subphase added for North Segment CP1B River Crossing (6864) (\$7.8M) for cleaning and lining only. West Segment (CP4) (\$11.8M), Design CA/RI (DP3) (\$2.3M), Easements CP4 (65K) Project removed from CIP. New subphases for Replacement of Section 25 Design +\$400K and Construction +\$2.1M. Design CA/RI +\$250K Expected amendment for a feasibility study of a new pipeline route identified during the environmental review process.
- Schedule – Delays due to environmental reviews.
- CAP Impact - Project cost changes identified above have reduced the contribution over the CAP period.

## S.704 Rehab of Other Pumping Stations

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To rehabilitate five active pump stations (Brattle Court, Reservoir Road, Hyde Park, Belmont, and Spring Street). Each of the stations is more than 40 years old, and is overdue for renewal for safety, reliability, and efficiency reasons. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$22,136	\$3,675	\$18,461	\$245	\$1,730	\$6,202	\$5,364	\$3,924	\$996

Project Status	16.6% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$19,496	\$22,136	\$2,640	Oct-08	Sep-09	11 Mos.	\$14,551	\$17,465	\$2,914

### **Explanation of Changes**

- Project Cost - Increase due to new phase Phase 2 design services, partially offset by closeout existing contract. Remaining scope for closed contract moved to Phase 2 and will be competitively procured.
- Schedule - Change reflects additional time to procure Phase 2 design services.
- CAP Impact - Revised scope of new Phase 2 design services greater than closeout of existing contract resulting in an increase in spending within the cap period.



**S.706 NHS - Con. Mains from Sec. 91**

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

**Project Summary**

To integrate the new Section 91 pipeline with the existing grid network in the northeast portion of the Northern High Service System. Through various new connections, service pressures and reliability to community meters will be improved. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).* Project now complete and scheduled to be removed from the CIP prior to the next budget cycle.

**Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$2,387	\$2,401	-\$13	-\$13					\$0

Project Status	100.6% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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**Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$2,797	\$2,387	-\$410	Jun-02	Jun-02	None.	\$70	-\$13	-\$83

**Explanation of Changes**

- Project Cost – Design CA/RI reduced to actuals since contract is complete. Construction removed ECO to relocate 48" valve.
- Schedule – None.
- CAP Impact - Project cost changes identified above have reduced the contribution over the CAP period.

## S.708 Nor Extra High Serv - New Pipelines

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To improve hydraulic service and reliability for major portions of the Northern Extra High System. Existing lines are undersized and frequently experience pressure problems. Improvements will include rehabilitation of two pipe segments and installation of a new parallel main into Waltham. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$8,036	\$3,564	\$4,472	\$86	\$25	\$6	\$6	\$6	\$4,343

Project Status	44.4% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$8,239	\$8,036	-\$203	Nov-10	Nov-10	None.	\$40	\$129	\$89

### **Explanation of Changes**

- Project Cost – Design CA/RI budget reduced to actual spending since contract is complete.
- Schedule – None.
- CAP Impact - Schedule

## S.712 Cathodic Protection Of Distr.Mains

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To evaluate the condition of approximately 30 miles of steel pipelines and determine the feasibility of upgrading or installing cathodic protection systems to protect pipelines from corrosion. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$1,668	\$141	\$1,527	\$0	\$355	\$32			\$1,140

Project Status	8.5% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$1,663	\$1,668	\$5	May-09	May-11	24 Mos.	\$1,236	\$387	-\$849

### **Explanation of Changes**

- Project Cost – Decrease reflects revised cost estimates for Test Station Installation, Phase 1.
- Schedule - Program schedule for Phases 2 through 4 shifted 2-years to comply with CAP.
- CAP Impact – Schedule changes above reduced spending to comply with CAP.

## S.713 Spot Pond Supply Mains - Rehab

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To improve the condition, carrying capacity, and valve operability of the two long supply mains which extend north from Chestnut Hill to Spot Pond. These cast-iron mains, which are 100 years old, deliver water to the Northern Low Service System. Improvements involve a combination of replacement, cleaning and lining, and valve replacement depending on specific site conditions and needs. Improving these supply lines will reduce the need to take water from the City Tunnel to augment the Low Service System and improve the quality of water delivered to eight user communities. This project also includes the rehabilitation of approximately 10,000 feet of 36-inch steel, and 30-inch cast iron mains on Section 66 and Mystic Main 30. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$89,529	\$24,088	\$65,441	\$9,142	\$6,725	\$7,999	\$7,398	\$9,565	\$24,612

Project Status	26.9% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$80,772	\$89,529	\$8,757	Nov-09	Apr-11	17 Mos.	\$49,159	\$40,828	-\$8,331

### **Explanation of Changes**

- Project Cost – Increased project scope for Riverside Avenue Sewer Repair with 6,000 additional feet of pipe added in addition to South Section 57 pipeline and a new subphase Sewer Design CA/RI all contributed to the increased project budget. South (Cambridge/Boston) Work repackaged to be included in the Riverside Ave & Section 57 project. Some subphases repackaged and combined for greater efficiency. New subphase for bridge trusses added.
- Schedule –Schedule delayed to coincide with Construction CP5 Sec 66 contract 6782.
- CAP Impact – Schedule changes shifted some cashflows outside the CAP window.

## S.714 South. Extra High Sects 41,42 & 74

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To increase the hydraulic capacity of the mains that carry water to the Bellevue Tanks, which serve the Southern Extra High System. Because Sections 41, 42 (80-year old cast iron mains), and 74 (45-year old pre-stressed concrete cylinder pipe) are severely limited in the pressures and flows they can convey, the Hyde Park Pump Station cannot operate efficiently. Improvements will include pipeline replacement and rehabilitation. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).* Project nearing completion and scheduled to be removed from the CIP prior to the next budget cycle.

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$4,478	\$2,559	\$1,919	\$1,332	\$587				\$0

Project Status	57.1% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$4,555	\$4,478	-\$77	Aug-03	Sep-03	1 Mos.	\$1,195	\$1,919	\$724

### **Explanation of Changes**

- Project Cost – Construction Balancing credit change order reduced overall budget.
- Schedule – Completion of Contract 6300 achieved in September 2003.
- CAP Impact – Less than budgeted spending in FY03 for Contracts 6300 and paving work carried forward to the CAP period.

## S.719 Chestnut Hill Connecting Mains

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To simplify the complex arrangement of old pipes near the Chestnut Hill pump stations for safety and operability, and create a connection between Shaft 7 of the City Tunnel and the Southern Distribution surface mains to provide redundancy along the Dorchester Tunnel. MWRA is restructuring the piping arrangement through a combination of constructing new pipelines, rehabilitating older pipelines, sliplining abandoned aqueducts, replacing pressure regulating valves, replacing the emergency pumps at Chestnut Hill, and abandoning pipes and valves which are no longer needed for service. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$29,692	\$15,738	\$13,954	\$1,271	\$229	\$587	\$1,057	\$5,694	\$5,116

Project Status	53.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$27,177	\$29,692	\$2,515	Jun-08	Jun-09	12 Mos.	\$11,645	\$8,838	-\$2,807

### **Explanation of Changes**

- Project Cost – Increased project cost reflects an additional Design contract and the repackaging of the Final Pipe Connection into two subphases (Chapter 149 & Chapter 30).
- Schedule – Extended procurement process is expected to delay completion by one year.
- CAP Impact – Revised estimate for final pipe connection construction and award of design contract greater than budget, increased spending within the CAP period.

## S.720 Warren Cottage Line Rehab

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To improve the carrying capacity and internal condition of the Warren Cottage Line which serves a portion of Boston via the Southern High Service System. Improvements, which will also strengthen the surface connection between Shafts 7B and 7C of the Dorchester Tunnel, will include cleaning and lining to remove build up of rust deposits. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).* Project now complete and scheduled to be removed from the CIP prior to the next budget cycle.

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$1,212	\$1,202	\$10	\$10					\$0

Project Status	99.3% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$1,211	\$1,211	\$0	Dec-02	Dec-02	None.	\$8	\$10	\$2

### **Explanation of Changes**

- Project Cost – None.
- Schedule – None.
- CAP Impact – Less than \$2,000, no significant impact.

## S.721 Southern Spine Distribution Mains

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To increase carrying capacity and improve valve operability along the large surface mains that run parallel to the Dorchester Tunnel and provide service to the Southern High and Southern Extra High systems. Currently these mains have serious hydraulic deficiencies and many inoperable valves. Hydraulic performance improvements are needed to provide redundancy for the Dorchester Tunnel. Work will include rehabilitation of more than 12 miles of large diameter pipeline. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$62,817	\$3,197	\$59,620	\$2,930	\$5,620	\$781	\$5,969	\$8,830	\$35,490

Project Status	5.1% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$62,752	\$62,817	\$65	Nov-13	Nov-13	None.	\$25,911	\$24,130	-\$1,781

### **Explanation of Changes**

- Project Cost – Awards for Section 22 South Construction and Contract 1A Construction were less than originally anticipated. However, revised base costs estimates for Section 22 North Construction and Sections 21 & 43 Construction offset these savings.
- Schedule – None.
- CAP Impact – Less than budgeted contract award amounts noted above reduced spending within the CAP period.



## S.722 Bear Hill Improvements

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To improve the condition of this 96-year old pipeline because its hydraulic capacity has diminished as a result of rust and sediment build-up. This pipeline, which serves the Northern Intermediate High System, will be rehabilitated. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$8,799	\$0	\$8,799				\$1,500	\$1,340	\$5,959

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$3,378	\$8,799	\$5,421	Nov-09	Jun-12	31 Mos.	\$361	\$2,840	\$2,479

### **Explanation of Changes**

- Project Cost – Project rescope after condition of pipe discovered in WASM 4.
- Schedule – Project rescope after condition of pipe discovered in WASM 4.
- CAP Impact - Project cost changes identified above have increased the contribution over the CAP period.

## S.723 Nor Low Service Rehab Secs. 8

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To improve the condition and reliability of an unlined pipeline serving a portion of the Northern Low System. This pipeline, Section 8, has reduced carrying capacity because of rust build-up, and has experienced leaks at above average rates. Improvements will consist primarily of replacement of a portion of Section 8 and cleaning, lining, and valve repairs along nearly 1.5 miles of water main. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$11,677	\$0	\$11,677					\$15	\$11,662

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$8,485	\$11,677	\$3,192	Nov-09	Nov-11	24 Mos.	\$6,037	\$15	-\$6,022

### **Explanation of Changes**

- Project Cost – Added new phase to rehabilitate sections 37, 38, and 46 Chelsea/East Boston construction, which increased the project budget by \$3.2 million. Sections 37 and 46 are nearing 100 years old and supply a densely developed part of the service area which has little redundancy.
- Schedule – Completion date reflects anticipated completion date for new phase noted above.
- CAP Impact – Revised construction spending for Section 8 to align with anticipated start date of July 2008, which is outside the cap period. New scope described above is outside the cap period.

## S.724 Nor High Service - Pipeline Rehab

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To improve carrying capacity and water quality by rehabilitating a number of small diameter distribution pipelines near the coastline from East Boston north to Lynn. All these cast iron mains are unlined with C-values below 70, and most are more than 60 years old. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$16,287	\$0	\$16,287					\$736	\$15,551

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$16,304	\$16,287	-\$17	Nov-10	Nov-11	12 Mos.	\$1,526	\$736	-\$790

### **Explanation of Changes**

- Project Cost - Updated inflation estimates based on projection of Boston construction cost index.
- Schedule - Shifted schedule for start of design by one year to May 2007, which extended construction completion date to November 2011 due to competing project priorities and staffing limits.
- CAP Impact – Start of design shifted one year, as noted above, which reduced spending within the CAP period.

## S.725 Hydraulic Model Update

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To bring MWRA hydraulic and water quality modeling capabilities up to modern standards, and to integrate the water quality model with MWRA's GIS, SCADA, and Telog systems. Completion of the project will also improve the use of the existing hydraulic model to manage system operations by making screen displays geographically accurate, standardizing model facility naming to coordinate with GIS, and allowing simulations to be conducted to predict changes to disinfection residual levels in the water as it moves through the MWRA system. The project builds on the foundation of the existing model and incorporates improvements already implemented in the GIS system. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$688	\$598	\$90	\$14	\$76				\$0

Project Status	86.9% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$688	\$688	\$0	Jun-04	Jun-05	12 Mos.	\$88	\$90	\$2

### **Explanation of Changes**

- Project Cost – None.
- Schedule – Schedule pushed out due to delay in developing the data.
- CAP Impact – Less than \$2,000, no significant impact.

## S.727 Southern Extra High Redundancy Loop

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

The Southern Extra High Service Area is served by an older pipeline with no source of redundancy. This loop will provide the communities of Canton, Stoughton, and Norwood with a second primary water supply route in the event of pipeline failure, as well as improved water pressure as the older pipeline is rehabilitated. In addition, the project may provide the means to add a second water meter to the town of Milton. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$19,463	\$0	\$19,463						\$19,463

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$19,481	\$19,463	-\$18	Jun-15	Mar-16	9 Mos.	\$200	\$0	-\$200

### **Explanation of Changes**

- Project Cost - Updated inflation estimates based on projection of Boston construction cost index.
- Schedule – Planning/design schedule extended to provide for a more comprehensive review of SEH system, which shifted the planned start of construction to December 2012 and extended completion to March 2016.
- CAP Impact – Start of planning/design revised from April 2008 to July 2008, which reduced spending within the cap period.

## S.730 Weston Aqueduct Supply Mains (WASMs)

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To improve the condition and carrying capacity of these major supply lines and the quality of the water supplied to the communities in the Low, High, Intermediate, and Extra High pressure zones. Timely rehabilitation will reduce the costs of replacing corroded pipes, reduce red water and chlorine tastes, and improve water pressure. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$108,845	\$42,833	\$66,012	\$10,962	\$7,376	\$962	\$842	\$2,435	\$43,435

Project Status	39.4% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$105,601	\$108,845	\$3,244	Jan-16	Dec-16	11 Mos.	\$20,446	\$22,577	\$2,131

### **Explanation of Changes**

- Project Cost – Change order to slipline 1,990 feet of pipe and furnish and install gate valve contributed to increase. Original contract was only to inspect line. Additional change orders to repair water leak at WASM 4 and repair weld seams and wall plate on existing pipeline also contributed to the overall budget increase. Additional subphase for Temporary Water Supply Plan also added. Reduced scope for Arlington WASM 3-CP4 offset by addition of separate subphase for Section PCCP W-12 and Design WASM3 SPL12 PCCP.
- Schedule – Project shifted to coordinate work with current overall WASM project work plan and project sequencing.
- CAP Impact - Project cost changes identified above have increased the contribution over the CAP period.

## S.731 Lynnfield Pipeline

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To meet fire flow and peak hour requirements in Lynnfield by replacing approximately 7,000 linear feet of 8-inch main. The Lynnfield Water District serves a portion of the Town of Lynnfield. The community meter is served by an 8-inch main, approximately 7,000 feet long. The main is undersized and its capacity is inadequate to meet fire flow and peak hour requirements. Rehabilitation of the main will not increase the capacity sufficiently. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$4,000	\$0	\$4,000		\$100	\$350	\$2,200	\$1,200	\$150

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$4,000	\$4,000	\$0	Nov-07	Nov-07	None.	\$4,000	\$3,850	-\$150

### **Explanation of Changes**

- Project Cost – None.
- Schedule – None.
- CAP Impact – Cashflow adjustments shifted some spending within the CAP window.

## S.732 Walnut St. & Fisher Hill Pipeline Rehab.

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To improve water quality and hydraulic capacity of three pipelines serving Brookline and Chestnut Hill. Cleaning and cement mortar lining these cast iron mains will enhance water quality, and enable these pipelines to meet maximum demand conditions. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$6,685	\$0	\$6,685	\$3	\$39	\$4	\$1,758	\$2,169	\$2,712

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$6,681	\$6,685	\$4	May-11	May-11	None.	\$3,957	\$3,972	\$15

### **Explanation of Changes**

- Project Cost – Less than \$4,000, no significant impact
- Schedule – None.
- CAP Impact – Cashflow distribution had a slight impact on CAP.



## S.733 NHS Pipeline Rehab 13-18 & 48

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

This project will improve hydraulic service and reliability in portions of the Northern High Service System, as well as improve water quality. Improvements will include the rehabilitation of two pipe sections, over 100-years old, and the connection of the two sections via four existing water meters, to the Fells Reservoir Covered Storage Facility. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$26,364	\$0	\$26,364						\$26,364

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$18,383	\$26,364	\$7,981	Nov-13	Nov-16	37 Mos.	\$2,058	\$0	-\$2,058

### **Explanation of Changes**

- Project Cost – Added new work to design and rehabilitate Sections 33, 49, 49A mains in conjunction with the rehabilitation of the Northern High Service (NHS) Pipeline Rehab 13-18 and 48 to minimize disruption to communities, improve coordination of interconnections between the two sets of mains, and to lower overall construction costs.
- Schedule – Revised to reflect anticipated completion date for new rehabilitation work noted above.
- CAP Impact - Delayed start of planning/EIR phase from November 2006 to November 2009 due to staffing limits and other project priorities.

## S.734 SEH Pipelines-Sections 30,40,44,39

The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.

### **Project Summary**

To support MWRA's commitments to water quality, improving infrastructure, and more efficient and effective operations and maintenance by rehabilitating and repairing aging pipelines in Boston and Milton. Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$7,000	\$0	\$7,000						\$7,000

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$7,000	\$7,000	\$0	Jan-17	Jan-17	None.	Future	Future	N/A

### **Explanation of Changes**

- Project Cost – None.
- Schedule – None.
- CAP Impact – Future project spending falls outside CAP window.

## S.735 Section 80 Rehabilitation

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To improve the quality of water delivered by MWRA to Wellesley and Needham by rehabilitating approximately 16,197 feet of pipe along Route 128/95. Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$9,693	\$0	\$9,693			\$201	\$627	\$3,129	\$5,736

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$7,119	\$9,693	\$2,574	Mar-08	Sep-09	18 Mos.	\$7,120	\$3,957	-\$3,163

### **Explanation of Changes**

- Project Cost – Revised design and construction costs estimates for Sect 80 Construction based on current pipeline cost estimating including premium for special circumstances. Project is currently in In-House conceptual design.
- Schedule –Delay due to staffing limits and other priority projects.
- CAP Impact – Schedule changes shifted some cashflow out of the CAP window.

## S.753 Central Monitoring System

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To provide a modern centralized system for monitoring, coordinating, and controlling critical waterworks functions. Many existing MWRA facilities are monitored and operated using obsolete methods and equipment, which can hinder emergency response capabilities and prevent coordinated system operation. Two operations control centers are already operational, and various field facilities have been equipped with telemetry and communications equipment as part of this project. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$16,246	\$14,858	\$1,388	\$712	\$197	\$80	\$80	\$140	\$179

Project Status	91.5% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$16,113	\$16,246	\$133	Jun-09	Jun-09	None.	\$1,039	\$1,210	\$171

### **Explanation of Changes**

- Project Cost –Change orders for the Microwave Communication at Waterwork Facilities and a change in antenna mounting location at Walnut Hill increased project costs.
- Schedule – None.
- CAP Impact - Project cost changes identified above have increased the contribution over the CAP period.

## S.763 Distribution Systems Facs. Mapping

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To produce a complete, up-to-date set of appropriate scale maps of all underground waterworks facilities, along with a comprehensive database inventory. Existing maps are outdated and unreliable, complicating emergency response, field repairs, and planning. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$2,116	\$1,030	\$1,086				\$434	\$434	\$218

Project Status	48.7% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$2,117	\$2,116	-\$1	Dec-06	Dec-08	24 Mos.	\$1,087	\$868	-\$219

### **Explanation of Changes**

- Project Cost – None.
- Schedule – Delay due to staffing limits.
- CAP Impact – Schedule changes resulting from the delay reduced the project’s contribution to the CAP.

## S.764 Local Water Infrastr Rehab Ast Progr

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To provide financial support to MWRA waterworks communities to replace, rehabilitate, and maintain their waterworks system infrastructures. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).* Project now complete and scheduled to be removed from the CIP prior to the next budget cycle.

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$7,488	\$9,892	-\$2,404	-\$2,404					\$0

Project Status	132.1% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$7,500	\$7,488	-\$12	Jun-04	Jun-04	None.	-\$2,469	-\$2,404	\$65

### **Explanation of Changes**

- Project Cost – None.
- Schedule – None.
- CAP Impact – Cashflow distribution increased project’s contribution to the CAP.

## S.765 Local Water Pipeline Imp. Loan Program

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To provide loans to facilitate the rehabilitation or replacement of unlined water pipelines in MWRA communities. Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$0	\$45,545	-\$45,545	\$15,011	\$11,761	\$9,886	\$8,411	\$6,136	-\$96,750

Project Status	Not Applicable	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$0	\$0	\$0	Aug-20	Jun-24	47 Mos.	\$70,730	\$51,205	-\$19,525

### **Explanation of Changes**

- Project Cost – None.
- Schedule - Schedule revised to reflect anticipated longer period of distribution of funds based on pace of disbursements todate. August 2021 completion date reflects last repayment. Terms of repayment unchanged, date consistent with expected disbursements.
- CAP Impact - Reviewed and revised pace of loan disbursements and repayments based on historical activity for loan program. Program authorized at \$25 million per year, but this level not yet achieved. Net result from review is a reduction of \$19.5 million within the CAP period.

## S.766 Waterworks Facility Asset Protection

The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.

### Project Summary

New Project Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).

### Expenditure Forecast (\$ x 000) and Project Status

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$2,780	\$0	\$2,780	\$161	\$104	\$1	\$1	\$434	\$2,079

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$3,122	\$2,780	(\$342)	Mar-10	Mar-11	12 Mos.	\$1,538	\$700	-\$838

### Explanation of Changes

- Project Cost – Southboro Lab roof replacement shifted to another project and award Waltham Bridge and Pipe repair under budget amount.
- Schedule – Delay to comply with CAP.
- CAP Impact – Schedule shifted some spending outside CAP.



## S.881 Equipment Purchase

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To provide critical equipment for improved maintenance and operations at MWRA facilities. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$10,045	\$758	\$9,287	\$1,296	\$3,150	\$3,250	\$1,591		\$0

Project Status	7.5% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$12,965	\$10,045	-\$2,920	Jun-04	Jun-06	24 Mos.	\$10,619	\$9,287	-\$1,332

### **Explanation of Changes**

- Project Cost – Scaled back expenditures for Security Equipment and their Installation due to reduce security system expansion was partially offset by greater spending on specialized vehicle purchases including backhoe, bucket machine, excavator, land fill loader, and power sweeper/catch basin cleaner.
- Schedule – New excavator added to equipment purchase list.
- CAP Impact - Project cost changes identified above have reduced the contribution over the CAP period.

## S.925 Technical Assistance

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To ensure ready access, on an as needed basis, to professional and technical services not available or not cost-effectively provided by in-house staff. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$1,650	\$0	\$1,650		\$550	\$550	\$550		\$0

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$3,300	\$1,650	-\$1,650	Jun-06	Jun-07	12 Mos.	\$3,300	\$1,650	-\$1,650

### **Explanation of Changes**

- Project Cost – Decrease reflects the removal of eleven TA accounts removed including Sanitary Engineering, Electrical/HVAC, Structural, Geotechnical, Asbestos/Odor Control, Architectural, Civil Engr, Land Appraisal, Energy, Soil Boring Contractor, and Subsurface Utility Engineering.
- Schedule – Extended by one year for annual budget.
- CAP Impact - Project cost changes identified above have reduced the contribution over the CAP period.

## S.930 MWRA Facility - Chelsea

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To improve MWRA operations by consolidating maintenance, operations, administrative, and equipment storage functions into a single facility. This will relieve current overcrowding and adverse traffic impacts on neighborhoods abutting existing facilities. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$10,224	\$8,552	\$1,672	\$218	\$1,144	\$310			\$0

Project Status	83.6% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$10,245	\$10,224	-\$21	Jun-03	Jun-04	12 Mos.	\$0	\$1,672	\$1,672

### **Explanation of Changes**

- Project Cost – None.
- Schedule –Time extension.
- CAP Impact - Timing of remaining work for MIS network improvements and remaining fitout budgeted in FY03, now carried forward to FY04.

## S.931 Business Systems Plan

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To develop and procure management information systems (MIS) and improvements in order to adapt to the changing business needs of planning and managing the waterworks and sewerage systems. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$25,873	\$17,979	\$7,893	\$371	\$1,978	\$3,291	\$1,841	\$207	\$205

Project Status	69.5% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$23,372	\$25,873	\$2,501	Jun-07	Jun-09	24 Mos.	\$4,602	\$7,687	\$3,085

### **Explanation of Changes**

- Project Cost – Addition of Phase V to replace LIMS and Phase VI for Microsoft licensing and Lawson Conversion. Phase III Budget reduced to actuals as phase is complete.
- Schedule – Lawson conversion to COMF will start in FY06 and end in FY07.
- CAP Impact - CAP Impact - Additional scope noted above and some carry forward of budgeted spending in FY03.

## S.932 Environmental Remediation

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To implement remedial programs necessary to protect the environment and for compliance with the Clean State Initiative. Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$1,764	\$1,138	\$626	\$119	\$57	\$230	\$52	\$52	\$116

Project Status	64.5% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$1,247	\$1,764	\$517	Mar-04	Mar-04	None	\$105	\$509	\$404

### **Explanation of Changes**

- Project Cost –Increase reflects a change order adding a multiphase oil extraction system relating to the removal of the Prison Point Tank.
- Schedule – None.
- CAP Impact - Project cost changes identified above have increased the contribution over the CAP period.

## S.933 Capital Maintenance Planning/Development

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

To optimize the efficiency and effectiveness of MWRA maintenance practices by developing and implementing a strategic maintenance plan for MWRA assets. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$4,866	\$2,173	\$2,693	\$131	\$749	\$1,031	\$687	\$94	\$1

Project Status	44.7% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$2,616	\$4,866	\$2,250	Jun-05	Jul-07	25 Mos.	\$457	\$2,693	\$2,236

### **Explanation of Changes**

- Project Cost – New subphases added for Facility Asset Mgmt Phase 3, As-needed Design Contract 1, and As Needed Design/TA.
- Schedule – Change in completion date reflects addition of as-needed design services.
- CAP Impact – New work for as-needed design services and Phase 3 FAMP consultant resources to be expended within the cap period.

## S.934 MWRA Facilities Management & Planning

*The information presented below is a project overview. Specifically, it highlights planned expenditure forecasts, and changes to project cost, schedule, and FY04-08 CAP spending as compared to the Final FY04 CIP. Additional information by project phase is provided in the appendices.*

### **Project Summary**

This is a new project that consolidates existing MWRA projects (DI Maintenance Facilities and DI CSB Demolition) to provide a central point of review and decision making for space planning decisions. This project includes new work to rehabilitate or demolish the old Admin Building on Deer Island as the building has deteriorated (i.e. the roof leaks, windows need to be replaced) and certain structures need to be upgraded to current standards if it is to remain occupied (bathrooms, electrical, and plumbing systems). Project also includes the installation of the sandblast booth and the paint booth, purchased from the Chelsea Facility developer, in the Maintenance Building at Chelsea for a fully functional shop, and funds to construct a washdown area to sanitize tools, equipment, and parts before working on them in the shop areas at Chelsea. *Additional project background and description of phases are available online at [www.mwra.com](http://www.mwra.com).*

### **Expenditure Forecast (\$ x 000) and Project Status**

Total Cost	Payments thru FY03	Balance	FY04	FY05	FY06	FY07	FY08	Beyond FY08
\$3,931	\$0	\$3,931	\$0	\$345	\$823	\$587	\$544	\$1,632

Project Status	0.0% Complete	Status is an approximation of percent completion based upon expenditures. Status for completed projects is COMPLETE, active projects show approximate percentage, and for projects not yet started the status is FUTURE. Status by phases is provided as an appendix.
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### **Changes to Project Cost, Schedule, and FY04-08 CAP (\$ x 000)**

Project Cost			Scheduled Completion Date			Impact on FY04-08 CAP		
FY04	FY05	Change	FY04	FY05	Change	FY04	FY05	Change
\$0	\$3,931	\$3,931	-----	Jun-09	N/A	\$0	\$2,299	\$2,299

### **Explanation of Changes**

- Project Cost -These projects reflect the MWRA's continued commitment to consolidate facilities and to optimize space. Consolidation of these projects will provide a central point for decision making. Of the \$4 million project budget, \$2.4 million is a transfer of existing phases from DI for maintenance facilities and CSB reuse and the remainder is for new work proposed to complete the paint booth and additional vehicle storage at Chelsea, and potential re-use of Old Admin Building on DI.
- Schedule – None.
- CAP Impact – Portion of work expected to be completed within the cap period. This is offset by reductions elsewhere in the CIP as portions of this project were already funded in the CIP and are now transferred to this project.