



## S. 933 Capital Maintenance Planning/Development

### Project Purpose

*To optimize the efficiency and effectiveness of MWRA maintenance practices by developing and implementing a strategic maintenance plan for MWRA assets.*

### Project History and Background

MWRA is responsible for rehabilitating, repairing, and maintaining the regional water and sewerage system infrastructure. Since its assumption of the ownership and operations of the water and sewer systems in 1985, MWRA has undertaken an ambitious program of capital improvements to the systems, with estimated expenditures of more than \$7 billion for fiscal years 1986 through 2013.

Given the significant value and critical nature of these assets, system maintenance is of paramount importance. This project helps MWRA optimize maintenance practices by evaluating alternative approaches to equipment, infrastructure and facility maintenance, recommending a maintenance strategy, implementing a pilot program to test the recommended strategy, and developing a plan to implement the recommended strategy throughout MWRA.

In the FY01-03 CIP the Capital Maintenance Planning/Development project was part of the first phase of the Wastewater Facilities Asset Management Program (FAMP). This initial phase of FAMP consisted of evaluating maintenance strategies for equipment and systems at Deer Island, and led to the adoption of Reliability Centered Maintenance (RCM) as the maintenance strategy for Deer Island and subsequently the rest of MWRA. As a result of the decision to implement RCM throughout MWRA, the Capital Maintenance Planning/Development project was created. The remaining FAMP components, which address equipment system monitoring, Maximo improvements, and improved business practices at Deer Island, have been renamed Deer Island Treatment Plant Asset Protection.

### Scope

Sub-phase	Scope
Inventory & Evaluation Phases 1 & 2	Development of a comprehensive, strategic maintenance plan for MWRA. (Completed by July 2005).
As-Needed Design	Contracts for professional design and/or technical assistance services for either wastewater or waterworks system improvement projects to supplement existing engineering resources for specialized and/or complex engineering issues. Subphases consist of As-Needed Design phases 1-4, and Long Term-As Needed Design.

### Expenditure Forecast (in \$000s) and Project Status

Total Budget	Payments thru FY07	Remaining Balance	FY08 Projected	FY04-08	FY09	FY09-13	Beyond FY13
\$7,755	\$3,145	\$4,610	\$731	\$1,702	\$474	\$3,259	\$621

Project Status 11/07	42%	Status as % is approximation based on project budget and expenditures. All tasks in <i>Inventory &amp; Evaluation Phases 1 &amp; 2</i> are complete. Use of the first two As-Needed Design contracts started in FY2005. As-Needed Design contracts 3 & 4 expected to begin in August 2007.
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**Changes to Project Scope, Budget, and Schedule**

Project Cost			Scheduled Completion Date			FY09-13 Spending		
FY08	PFY09	Chge.	FY08	PFY09	Chge.	FY08	PFY09	Chge.
\$8,891	\$7,755	(\$1,136)	Sep-13	Sep-13	-	\$3,691	\$3,259	(\$432)

**Explanation of Changes**

- Budget and spending reduced for estimated CEB related work.

**CEB Impact**

- One of the final tasks under the *Inventory & Evaluation Phases 1 & 2* contract consisted of REI/ESDC services on the *Equipment Condition Monitoring* subphase, one of the projects under S.206, *Deer Island Treatment Plant Asset Protection*. Condition Monitoring provides DITP staff with real time, non-intrusive means of evaluating equipment performance (through vibration and temperature monitoring). Maintenance tasks are then performed when the trends indicate that a problem exists, saving staff time and reducing unnecessary maintenance. Total budgetary benefits are not quantified at this time.

## S. 881 Equipment Purchase

### Project Purpose

*To provide critical equipment for improved maintenance and operations at MWRA facilities.*

### Project History and Background

This project includes the purchase of large vehicles, purchase and installation of security equipment at various MWRA facilities, and purchase of an Inductively Coupled Plasma-Mass Spectrometer (ICP-MS) for MWRA's Central Laboratory. The security equipment and installation component of the project includes the design and installation of security systems at MWRA facilities. MWRA is ranking facilities and locations with respect to the critical nature of service delivery, with an emphasis on the waterworks system. This ranking will frame the extent and scheduling of the security improvements for each specific site.

**Scope** - New subphase added to the FY09 CIP are noted in **Bold**.

Sub-phase	Scope
Security Equipment & Installation	Design and installation of security systems at various MWRA facilities and sites.
ICP-MS Lab Testing Equipment	Purchase of Inductively Coupled Plasma – Mass Spectrometer to replace a 14-year-old instrument and expand the laboratory's high sensitivity metals testing capacity.
<b>Major Laboratory Instrumentation</b>	Purchase major laboratory instrumentation, such as high resolution GC-MS or LC-MS to provide for lab testing of newly regulated contaminants.
<i>Vehicles:</i>	
TV Inspection Truck	Purchase of a replacement TV inspection vehicle (WRA36) in June 2001.
Backhoe (Excavator)	Purchase in June 2003 of excavator (WRA310) to support maintenance staff.
Vactor Truck	Purchase in June 2003 of vactor truck (WRA479) used to clean out and jet sewer lines at the site by Field Operations Department personnel.
Water Service Truck	Purchase in June 2004 of water service truck (WRA777) for Field Operations Department.
Bucket Machine	Purchase of bucket machine (will replace WRA272 & 273) to support Field Operations Department maintenance staff.
Excavator	Purchase of equipment (replace WRA532) to support maintenance staff in water pipeline unit of Field Operations Department.
Grove Crane	Purchase of crane (replaces WRA14 and 046) to support maintenance staff in Field Operations Department.
Landfill Loader	Purchase landfill loader (WRA124) to support Clinton Wastewater Treatment Plant staff in landfill operations.
Power Sweeper/ Catch Basin	Purchase of equipment (WRA210) in September 2004 to support maintenance staff at Chelsea in Field Operations Department. Will be used agency-wide.
Backhoe	Purchase in January 2005 of equipment (WRA817; replaced WRA 385) to support maintenance staff in Water Pipeline Unit of Field Operations Department.
Closed Circuit TV Inspection Truck	Purchase of TV Inspection Truck (WRA700) to support Wastewater Pipeline Unit of Field Operations Department.
Front-End Loader	Two phases to purchase front-end loaders to support maintenance staff primarily in the Water Pipeline Unit of the Field Operations Department and at Deer Island.
Crane	Purchase of crane (WRA185) to support the Water Pipeline Unit in the Field Operations Department.

<b>Sub-phase</b>	<b>Scope</b>
<b>Future Vehicle Purchases</b>	Placeholder for the purchase of 16 new vehicles within the FY09-13 timeframe.

**Expenditure Forecast (in \$000s) and Project Status**

<b>Total Budget</b>	<b>Payments thru FY07</b>	<b>Remaining Balance</b>	<b>FY08 Projected</b>	<b>FY04-08</b>	<b>FY09</b>	<b>FY09-13</b>	<b>Beyond FY13</b>
\$11,766	\$4,477	\$7,289	\$2,152	\$5,871	\$2,160	\$5,137	\$0

Project Status 11/07	50%	Status as % is approximation based on project budget and expenditures. Purchase and installation of security equipment is in process and will continue through FY11.
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**Changes to Project Scope, Budget, and Schedule**

<b>Project Cost</b>			<b>Scheduled Completion Date</b>			<b>FY09-13 Spending</b>		
<b>FY08</b>	<b>PFY09</b>	<b>Chge.</b>	<b>FY08</b>	<b>PFY09</b>	<b>Chge.</b>	<b>FY08</b>	<b>PFY09</b>	<b>Chge.</b>
\$8,904	\$11,766	\$2,862	Mar-08	Jun-11	40 mos.	\$2,082	\$5,137	\$3,055

**Explanation of Changes**

- Budget and spending increase due to addition of Major Laboratory Instrumentation and Future Vehicle Purchases as new subphases.
- Spending increase due to reason above as well as extension of Security Equipment and Installation subphase.
- Schedule shift due to Security Equipment and Installation subphase being extended through FY11.

**CEB Impact**

None identified at this time.

# S. 930 MWRA Chelsea Facility

## Project Purpose

*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.*

## Project History and Background

When MWRA was created in 1986, 80 employees and 22 vehicles were transferred from MDC to MWRA to support maintenance of the metropolitan waterworks system and the northern sewerage system. Since then, MWRA has invested significantly in new facilities and improved maintenance and repair of the systems.

While maintenance programs were updated, the inadequacy of MWRA's maintenance support facilities became a serious constraint. In addition to being inefficiently located, virtually all of the maintenance and support facilities were already decades old when inherited from MDC, in disrepair, and too small to house necessary workforce and equipment. To accommodate the maintenance program, a number of temporary measures were taken to provide support facilities, including creation of temporary quarters in rented trailers, leasing of space, and reuse of space in "retired" buildings like the East Boston Pump Station.

MWRA also designed and constructed facilities to meet some specific maintenance program needs. These facilities included the South Maintenance Yard (1990) created at Fore River to serve the sewerage system maintenance needs south of Boston and the Transmission Maintenance Facility in Southborough (1993) to serve waterworks transmission system needs in central and western Massachusetts. In addition, the Deer Island Maintenance Building opened in 1995 to support the new plant.

The most pressing remaining need was for a maintenance facility to serve sewerage facilities north of Boston and waterworks facilities not efficiently served from Southborough. MWRA's new Chelsea facility consists of two buildings, a 124,000 square feet administration building and a 92,000 square feet maintenance building. There are nearly three acres for outside material and equipment storage, parking for more than 650 MWRA and employee vehicles, an on-site fueling station, and a radio communications tower and 400 square feet radio equipment building. Upon completion of the administration building in June 2001 MWRA relocated staff from the Charlestown Navy Yard and Linden Street. Relocation of staff to the Maintenance building from the Chestnut Hill Pump Station, the East Boston Steam Station, Glenwood Yard, Mystic Shops, Nay Street, Winchester Yard, FRSA, and Charlestown Pump Station began in December and was completed by the end of January 2002. In FY06, additional staff were relocated from the Charlestown Navy Yard enabling MWRA to complete the reorganization of its engineering function and reduce the amount of leased space needed in CNY. A total of 563 staff now work out of the Chelsea facility.

## Scope

Sub-phase	Scope
Planning	Planning for the new MWRA Chelsea facility.
Conceptual Design	Conceptual and schematic architectural programming and design services for development of a Request for Proposals.
Negotiating Support	Real estate consultant to assist with lease negotiations.
Legal Services	Contract for a real estate attorney to assist with lease negotiations and review of lease documents.
Design Review	Architectural review of proposals and verification of specifications.
Fit out/Office Furnishing/Equipment	Purchase of furnishings and equipment for the new facility.

Sub-phase	Scope
Information/ Telecommunication Consultant	Consultant to implement plan for information and telecommunications systems at the new facility.
Fit out – All other items	Purchase of equipment, furnishings, and specialized items for the Operations Control Center, Emergency Operations Center, water quality laboratory, maintenance shops, data center, warehouse, vehicle maintenance facilities, training rooms, library, TRAC sampling area, and muster room.
Existing Facility Button Up	Closeout of existing facilities and sites that were vacated by MWRA and declared surplus.
Moving Expense	Costs associated with moving staff to the Chelsea facility.
Moving Expense- CNY	Costs associated with moving staff from Building 36 to Buildings 39 and 34 in the Charlestown Navy Yard.
CNY Retrofit	Construction and materials to reconfigure Buildings 34 and 39 to accommodate staff vacating Building 36.
MIS Network and Minicomputer Architecture, Performance, and Implementation	Network, minicomputer, and server performance upgrades, and equipment to provide adequate speed and performance to the new data center. This equipment is designed to accommodate future technology requirements.
Communications Tower	Erection of a communications tower at Deer Island to link Deer Island and the Chelsea facility.

#### Expenditure Forecast (in \$000s) and Project Status

Total Budget	Payments thru FY07	Remaining Balance	FY08 Projected	FY04-08	FY09	FY09-13	Beyond FY13
\$9,875	\$9,850	\$25	\$25	\$1,323	\$0	\$0	\$0

Project Status 11/07	99.9%	Status as % is approximation based on project budget and expenditures. This project is substantially complete. Expect remaining balances to be paid in FY08
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#### Changes to Project Scope, Budget, and Schedule

Project Cost			Scheduled Completion Date			FY09-13 Spending		
FY08	PFY09	Chge.	FY08	PFY09	Chge.	FY08	PFY09	Chge.
\$10,227	\$9,875	(\$351)	Jun-07	Jun-07	0 mo.	\$0	\$0	(\$0)

#### Explanation of Changes

- Budget decreased based on revised cost estimate for fit-out all other.

#### CEB Impact

No additional impacts identified at this time.

## S. 925 Technical Assistance

### *Project Purpose*

*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.*

### Project History and Background

Efficient implementation of MWRA's Capital Improvement Program and other projects often requires specialized skills and technical assistance that are not available from in-house staff. This project ensures ready access to a variety of services through a series of task order contracts with pre-set limits. Task orders are used when immediate expertise on projects is required. When a task order is complete, the expense is transferred to the appropriate capital project or Current Expense Budget cost center.

### Scope

Sub-phase	Scope
Technical Assistance	MWRA technical assistance contracts include the following: mechanical, materials testing, surveying, hazardous materials assessment, instrumentation control, and wetland/environmental.

**Status** MWRA uses technical assistance contracts in support of various CIP and CEB projects.

### Expenditure Forecast (in \$000s)

Total Budget	Payments thru FY07	Remaining Balance	FY08 Projected	FY04-08	FY09	FY09-13	Beyond FY13
\$ 1,800	\$0	\$1,800	\$0	\$0	\$600	\$1,800	\$0

### Changes in Project Scope, Budget, and Schedule

Project Cost			Scheduled Completion Date			FY09-13 Spending		
FY08	PFY09	Chge.	FY08	PFY09	Chge.	FY08	PFY09	Chge.
\$1,800	\$1,800	\$0	Jun-10	Jun-11	12 mos.	\$1,200	\$1,800	\$600

### Explanation of Changes

- Schedule and spending shift to reflect continuation of some contracts for an additional year.

### CEB Impact

- When Technical Assistance contracts are used to support a project in the operating budget, the costs are charged to the CEB.

# S. 931 Business Systems Plan

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## **Project Purpose**

*To develop, improve, and procure management information systems (MIS) to adapt to the changing business needs associated with managing the waterworks and sewerage systems.*

## **Project History and Background**

During the process of developing the FY94-96 Capital Improvement Program, it became evident that MWRA needed to invest in the upgrade, enhancement, and expansion of its management information systems (MIS) to adapt to the changing business needs of the waterworks and sewerage systems, and to respond to new regulatory requirements. To address these needs, MWRA initiated and implemented a business system planning effort to determine future MIS support requirements. Annual plan updates have assisted staff, external constituencies, and the Board of Directors in understanding the critical role of information systems in carrying out MWRA's environmental and economic mission.

The initial business systems plan focused primarily on FY95-97 (Phase 1) with the goal of getting greater use out of existing systems. Implementation of Phase I improvements was completed in June 1997.

Phase II (FY97-10) built on the progress made during Phase I and continued the development of economies of scale through optimization of existing assets, technology conversion promoting database integration, and infrastructure improvement. Except for improvements to the TRAC Information System, Phase II is complete. The TRAC I/S was competitively bid in FY06 and the project is expected to be completed in FY08.

Phase III (FY99-01) focused on implementing a new, integrated financial, procurement and human resources/payroll system (Lawson) – replacing three separate and obsolete software products. This project was substantially completed in May 2000 and met schedule and budgetary targets. Implementation of a Treasury workstation and integration with MAXIMO was completed by the close of FY01. The system reduces duplication of databases, streamlines several business processes, and improves staff ability to perform trend analysis.

Phase IV of the Business Systems Plan supported MWRA's effort in anticipation of the year 2000 to assess systems and applications and implement corrective actions to avoid systems failures. This phase was completed in February 2000, and MWRA did not experience any major system failures or disruptions. In addition, approximately 65% of Phase IV spending was for items that would have been purchased anyway and have useful lives well beyond 2000.

Phase V (FY01-09) supports MWRA's ongoing program of information system improvements. The focus is on development of a Waterworks Operations Management system similar to the one used to support Deer Island management, implementation of MAXIMO for the Field Operations Department (completed), and improvements to the laboratory information system to keep pace with changing business needs and technology standards. In addition, Phase V includes replacement of obsolete minicomputers and improvements to GIS and TV Inspection systems based on benchmarking results (completed).

Phase VI (FY04-09) supports the replacement of obsolete PBXes at major sites, re-licensing of Microsoft Office products, storage/server improvements for Computer Center operations and the conversion of Lawson portfolio to a current supported operating system.

A new MIS Plan as part of the overall Authority's Master Plan is under development. The major areas of focus are: replacing aging systems and the network architecture, improving disaster recover, enhancing data integration, consolidating server/computing resources, and implementing applicable best practices as part of software vendor solutions. The goal is to continue to support efficient administrative, financial, operational, engineering and planning functions with cost-effective technology. Key projects identified include: a NET2020 project, storage/server improvements (SAN), Computer Center and OCC infrastructure equipment replacements, document management software and telecommunications equipment replacement.

**Scope** – New subphases added to the FY09 CIP are noted in **Bold**.

Sub-phase	Scope
Phase I (FY95-97)	<u>Various improvements (complete):</u> Upgrade of BHP minicomputers; Unix-based minicomputer for GIS integration; implementation and enhancement of the Sewerage Analysis and Management System (SAMS) including high-end workstations to incorporate improved hydraulic modeling capabilities, condition information, mapping, and GIS data so that CSO Master Plan and Transport data requirements are met; PC replacements; storage and functionality improvements for TRAC Information Systems (IS) and wastewater flow data; leasing of three replacement minicomputers for administration and finance systems to address capacity and performance issues; implementation of CADD software and related tools including the establishment of a document management system to index thousands of engineering documents maintained by the Records Management Center and technical information centers at CNY and Deer Island; and development of a network plan for Business Systems Plan updates to address industry changes, maintenance/replacement concerns, and functionality needs.
Phase II (FY97-10)	Eight elements key to MWRA staff productivity: (1) server consolidation, (2) network scalability program, (3) database integration program, (4) PBX replacement, (5) records management inventory program, (6) maintenance management, (7) TRAC I/S replacement, and (8) waterworks programming services. With the exception of the TRAC I/S replacement currently underway, new LIMS, a Storage Area Network (SAN) and other mission-critical applications, this phase is complete. The new TRAC I/S is expected to be in production by April 2008 (the CIP includes 3 years of maintenance (through FY10) and the first SAN with corresponding server replacements in FY07 and enhanced through FY09. MWRA's first SAN will collapse storage for up to 32 minicomputers and servers into one pool over a two-year period. The selection of servers is based on the amount of data, costs, and its mission-critical designation.
Phase III (FY99-01)	Procurement of new integrated financial, procurement and human resources/payroll system. Purchase and installation of a back-up generator for Building 36 in the Charlestown Navy Yard and network project support. Complete.
Phase IV	Year 2000 assessment and improvements. Complete.
Phase V (FY01-09)	<p><u>Waterworks Operations Management System (OMS):</u> Establishment of a system to integrate SCADA, water quality, flow, and related data for management reporting and analysis (SCADA incorporation to Process Book is ongoing; data warehouse completion expected in FY09 once the new LIMS is in production). In FY01, the scope was expanded to include replacement of obsolete Open-VMS minicomputers at Deer Island with current servers running Microsoft-NT and also updating OMS software to run on the new platform (expected completion in FY08 based on vendor product-line extensions). In FY06, a Harbor Outfall Monitoring Database project was identified and the system is expected to be in production in FY08.</p> <p><u>Laboratory Information Management System:</u> Implementation of software improvements to stay current with industry standards and meet ongoing business needs. A competitive bid was awarded in FY08.</p> <p><u>Geographical Information Management System (GIS):</u> Conversion of GIS from UNIX to NT based on vendor software changes (complete). Also, completed recommendations from a TV Inspection Benchmarking Project by purchasing new software to improve data and operational efficiencies. New business requirements, including expansion of GeoXH handhelds to collect information on manhole inspections and its incorporation into GIS, are being handled under the CEB.</p>

Sub-phase	Scope
Phase VI (FY04–09)	<p><u>Telecommunications:</u> Replacement of the Deer Island PBX (completed in FY04).</p> <p><u>Lawson Minicomputer:</u> The original plan was to purchase a backup UNIX minicomputer to be used for Lawson processing, storage improvements for all MWRA's minicomputer and server resources (scheduled for FY08). However, in order to maintain vendor support for the Lawson System, new OS and server replacements and application environment, and application upgrades need to be implemented in FY08/FY09. New servers were procured for Chelsea (production) and Deer Island (disaster recovery/test/development) in FY08. Application Environment upgrade is also scheduled for FY08 and the application software upgrade will follow.</p> <p><u>Disaster Recovery:</u> In FY06, as part of the MWRA-wide Continuity of Operations Planning project, it was determined that a permanent disaster recovery computer center would be located at the Interim Corrosion Control Facility at the CWTP. A disaster recovery computer center was viewed as a higher priority than the originally budgeted server consolidation line item (it was expected due to the decreases in hardware prices that the TRAC I/S replacement project would yield savings to accomplish a SAN). In 2009, the new center is expected to be opened with the goal of providing automatic fail-over capability for all mission-critical applications in the event of a Chelsea disaster.</p> <p><u>Microsoft:</u> Microsoft's current strategy is 2 years of final maintenance on a version once a newer version has been released; Office 2007 is scheduled to be released in 2007. The remaining CIP provides for approximately 350 Office new 2007 licenses (previous re-licensing programs yielded a credit). The outstanding licenses will be purchased under the CEB (estimated cost of \$150,000 over 2 years in FY09 and FY10).</p> <p><u>Document Management:</u> The replacement of InfoStar, the MWRA Document Management System was originally part of this phase but it was eliminated in December 2004 and is requested for FY15.</p>
NET2020 (FY10–FY12)	<p>The current MWRA network architecture was implemented in CY2000 in preparation for the facility and staffing consolidation that took place in Chelsea in 2001. The goal was to establish a computer network architecture that would support MWRA's evolving information technology requirements over a 10-year period through 2010. MWRA's architecture emphasizes manageability, stability, flexibility, and adaptability. MWRA major sites connected to Chelsea are: Advisory Board, Carroll Water Treatment Plant, Clinton, Cosgrove, Deer Island Treatment Plant and CSB, Nut Island, Pellet Plant, Quabbin Reservoir Lab, and Southborough. Due to costs and limited provider options, smaller sites gain access to the MWRA network through a variety of methods such as dial-up (modem over telephone lines) and virtual private network (VPN) over DSL lines or cable company connections. VPN will also be used to support planned projects of wireless connectivity for field staff using MAXIMO, Global Position Units, and for full systems access by the Emergency Services Unit during drills, security incidents, and disasters. The NET2020 project will address the new network architecture for the period 2010 to 2020 including replacing all network equipment (3 main switches, 105 premise switches, and numerous appliances) with newer products</p>
SAN II (FY12) SAN III (FY15)	<p>SANs provide modular scalability, high availability, increased fault tolerance, and centralized storage management. Historical data can also be archived to cheaper storage following industry best practices. The use of a SAN reduces footprint requirements. Also, energy needed to run and cool the SAN equipment is reduced by approximately 50%. The current inventory of major servers and minicomputers is 87 (this does not include site servers for file sharing and printing). The first SAN (Phase II above) will collapse up to 32 servers/minicomputers' direct attached storage. SAN II will collapse up to an additional 32 servers/minicomputers' direct storage in FY12. In FY15, a SAN III has been planned to replace the original SAN with the then current technology.</p>

<b>Sub-phase</b>	<b>Scope</b>
Telecommunications (FY14–FY15)	Voice communication is done using private branch exchanges (PBXs) located at Charlestown, Chelsea, Southborough, Carroll Water Treatment Plant, Deer Island, Clinton, and Nut Island. Because the PBXs are networked, staff at these facilities can use four-digit dialing to call each other at no cost. Charlestown and Chelsea operator consoles are linked to permit Chelsea to be the primary call-intake facility. Likewise, Chelsea and Deer Island are uniquely linked to allow Chelsea to be the backup console. A full replacement of the equipment is not planned until FY14, prior to which new technologies will be reviewed such as Voice over IP (telephone communications using the Internet), before the next 10-year architecture is established.
Computer Center & OCC Infrastructure (FY15–FY16)	The Chelsea facility hosts the Computer Center, Operations Control Center (OCC) and the primary Emergency Operations Center. Specialty fire suppression systems, UPS equipment, environmental control and alarming systems, console apparatus, etc. was purchased in 2000/01 with the facility opening. All of this equipment has a useful life of approximately 15 years and will require replacement beginning in FY15.
<b>Laboratory Instrument Data Management</b>	Purchase either a Chromatography Data Management Server or a more global instrument data management system. This could include a server-based approach to managing instrument data and interfacing with LIMS. Regulation requires laboratory testing and data archiving.
<b>Corporate Server Infrastructure &amp; Document Distribution</b>	The Corporate Server Infrastructure and Replacement Program is one of the major technology changes for the MIS Department along with PIMS and LIMS this year. Based on current Technology Standards, the average hardware system infrastructure have a useful life of 3-5 years. MIS is requesting \$500K for FY09 and \$500K for FY13 to prepare for upcoming technology changes in infrastructure and major applications server replacement in a 4-year cycle.

#### Expenditure Forecast (in \$000s) and Project Status

<b>Total Budget</b>	<b>Payments thru FY07</b>	<b>Remaining Balance</b>	<b>FY08 Projected</b>	<b>FY04-08</b>	<b>FY09</b>	<b>FY09-13</b>	<b>Beyond FY13</b>
\$31,526	\$19,830	\$11,696	\$3,642	\$5,493	\$1,345	\$5,204	\$2,850

Project Status 11/07	63.5%	Status as % is approximation based on project budget and expenditures. Phases V and VI are in process. The TRAC IS system and the LIMS replacement contracts were awarded in FY07.
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#### Changes to Project Scope, Budget, and Schedule

<b>Project Cost</b>			<b>Scheduled Completion Date</b>			<b>FY09-13 Spending</b>		
<b>FY08</b>	<b>PFY09</b>	<b>Chge.</b>	<b>FY08</b>	<b>PFY09</b>	<b>Chge.</b>	<b>FY08</b>	<b>PFY09</b>	<b>Chge.</b>
\$29,976	\$31,526	\$1,550	Jun-16	Jun-16	0 mos.	\$4,519	\$5,204	\$685

#### Explanation of Changes

- Budget and spending increase due Laboratory Instrument Data Management and Corporate Server Infrastructure and Document Distribution being added as new subphases.

**CEB Impact**

- The incremental software and/or hardware maintenance costs for the Phase II TRAC Replacement (\$150,000 in FY11); Phase II SAN & CPUs for TRAC & LIMS (\$90,000 in FY11); PH V LIMS Replacement (GIS & OMS) (\$118,000 in FY10, \$138,000 in FY11, \$187,000 in FY14); PH VI Lawson, MS Licensing & John J. Carroll WTP (\$62,000 in FY11); SAN II (\$100,000 in FY15); NET2020 (\$50,000 in FY14); and SAN III (\$100,000 in FY19) and Telecommunications will have a \$25,000 impact in FY19.

## S. 932 Environmental Remediation

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### Project Purpose

*To implement remedial programs necessary to protect the environment and to ensure compliance with the Clean State Initiative.*

### Project History and Background

Fuel tank replacements at Prison Point CSO, Cottage Farm CSO, and Chelsea Creek Headworks will enable MWRA to meet all current regulatory requirements and provide enhanced spill prevention and leak detection capabilities.

In accordance with the Massachusetts Contingency Plan, MWRA installed an oil recovery system to clean up oil contamination at Prison Point in conjunction with the tank replacement. Removed contaminated soil in conjunction with the tank replacement at the Chelsea Creek Headworks.

Many MWRA underground storage tanks (USTs) have been upgraded or replaced to meet current regulations. Two USTs at the Prison Point CSO were replaced in spring 1999, with remediation work remaining to be completed. Chelsea Creek Headworks and Cottage Farm UST replacement construction was completed in December 2002. The Commercial Point CSO and Hingham Pump Station UST Upgrades construction contract began in February 2003 and was completed in March 2003.

### Scope

Sub-phase	Scope
Technical Assistance – Environmental Remediation	Design, construction oversight, and waste site clean-up services for Prison Point, Cottage Farm, and Chelsea Creek tank replacements.
Prison Point Tank Replacement – Construction	Removal and replacement of two underground fuel storage tanks at the Prison Point CSO facility. Operation of oil recovery system. Assessment, design and installation of system upgrades.
Cottage Farm Tank Replacement – Construction	Removal and replacement of two underground fuel storage tanks at the Cottage Farm CSO facility.
Cosgrove Power Station – Design/CS and Construction	Design and construction of stormwater collection and surface water discharge system.
Oakdale Power Station – Design and Construction	Design and construction of non-contact cooling water disposal system. Design includes resolution of MCP issues associated with ground water conditions.

**Expenditure Forecast (in \$000s) and Project Status**

<b>Total Budget</b>	<b>Payments thru FY07</b>	<b>Remaining Balance</b>	<b>FY08 Projected</b>	<b>FY04-08</b>	<b>FY09</b>	<b>FY09-13</b>	<b>Beyond FY13</b>
\$1,831	\$1440	\$391	\$67	\$368	\$52	\$216	\$108

Project Status 11/07	79.1%	Status as % is approximation based on project budget and expenditures. The Prison Point oil recovery system upgrade assessment is in progress.
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**Changes to Project Scope, Budget, and Schedule**

<b>Project Cost</b>			<b>Scheduled Completion Date</b>			<b>FY09-13 Spending</b>		
<b>FY08</b>	<b>PFY09</b>	<b>Chge.</b>	<b>FY08</b>	<b>PFY09</b>	<b>Chge.</b>	<b>FY08</b>	<b>PFY09</b>	<b>Chge.</b>
\$1,831	\$1,831	\$0	Jan-13	Jan-13	0 mos.	\$216	\$216	\$0

**Explanation of Changes**

- n/a

**CEB Impact**

None identified at this time.

## S. 934 MWRA Facilities Management and Planning

### Project Purpose

*To improve MWRA operations by consolidating projects and providing a central point of review and decision making for space planning decisions.*

### Project History and Background

This project 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 will cover work to rehabilitate or demolish the old Administration Building on Deer Island as the building has deteriorated and certain structures need to be upgraded to current standards if it is to remain occupied. Project also includes installation of the paint and sandblast booths, purchased from the Chelsea Facility developer, in the Chelsea Maintenance Building 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 area at Chelsea. Of the \$6.8 million project budget, \$2.4 million is a transfer of existing phases from DI for maintenance facilities. The remainder is for new work proposed to complete the work in Chelsea and for the development of a small annex near the Chelsea Facility that would house the washdown area and provide garage space for the weather-sensitive wastewater pipeline equipment and vehicles.

### Scope

Sub-phase	Scope
Design & Engineering Services	Design and engineering services to support space plan.
Facilities Construction	Construction of modifications to MWRA facilities in accordance with space plan.
Facilities Fit-out	Purchase of furniture and other items to fit-out new and/or modified facilities.

### Expenditure Forecast (in \$000s) and Project Status

Total Budget	Payments thru FY07	Remaining Balance	FY08 Projected	FY04-08	FY09	FY09-13	Beyond FY13
\$6,928	\$0	\$6,928	\$0	\$0	\$500	\$6,928	\$0

Project Status 11/07	0%	Status as % is approximation based on project budget and expenditures. Planning for this project is in process.
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### Changes to Project Scope, Budget, and Schedule

Project Cost			Scheduled Completion Date			FY09-13 Spending		
FY08	PFY09	Chge.	FY08	PFY09	Chge.	FY08	PFY09	Chge.
\$6,753	\$6,928	\$175	Dec-10	Dec-11	12 mos.	\$5,833	\$6,928	\$1,095

**Explanation of Changes**

- Project cost, schedule and spending increase due to revised cost estimate and schedule for Facilities Construction.

**CEB Impacts**

None identified at this time.

## S. 935 Alternative Energy Initiatives

### Project Purpose

A comprehensive “green energy” initiative that is expected to bring solar, wind and hydroelectric power either alone or in combination to a number of MWRA facilities

### Project History and Background

This project was originally included under Deer Island in previous budget cycles. Building upon its track record in sustainable resource use – most notably dramatic system-wide reductions in water demand, 100% beneficial reuse of biosolids, self-generation of approximately 25% of Deer’s Island power needs, and maximizing revenue through hydropower – MWRA continues to work aggressively to use its resources efficiently, respond appropriately to climate change, and reduce the environmental impacts of its daily operations. Key initiatives now underway or planned for FY09 include: A comprehensive “green energy” initiative that is expected to bring solar, wind and hydroelectric power either alone or in combination to a number of MWRA facilities.

### Scope

Sub-phase	Scope
Alternative Energy Initiatives	An Authority-wide infrastructure initiative to evaluate alternatives to producing energy that may offer cost savings such as wind turbines.

### Expenditure Forecast (in \$000s) and Project Status

Total Budget	Payments thru FY07	Remaining Balance	FY08 Projected	FY04-08	FY09	FY09-13	Beyond FY13
\$7,000	\$0	\$7,000	\$2,500	\$2,500	\$4,500	\$4,500	\$0

Project Status 11/07	0%	Status as % is approximation based on project budget and expenditures. Planning for this project is in process.
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### Changes to Project Scope, Budget, and Schedule

Project Cost			Scheduled Completion Date			FY09-13 Spending		
FY08	PFY09	Chge.	FY08	PFY09	Chge.	FY08	PFY09	Chge.
\$0	\$7,000	\$7,000	Dec-08	Dec-10	24 mos.	\$0	\$4,500	\$4,500

### Explanation of Changes

- Project cost and spending increase due to a reclassified from Deer Island Treatment Plant Asset Protection subphase to an individual project under the Business & Operations Support program.
- Schedule change due to consideration of other energy initiatives throughout the Authority.

### CEB Impacts

- Deer Island energy reflects impacts of (\$134,000) in FY10 for lighting upgrades.