

Business and Operations Support



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

Sub-phase	Scope	Status
Security Equipment & Installation	Design and installation of security systems at various MWRA facilities and sites.	Active
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. Equipment was purchased in 2008.	Completed
FY14-18 Major Laboratory Instrumentation	Purchase major laboratory instrumentation, such as high resolution GC-MS or LC-MS to provide for lab testing of newly regulated contaminants.	Completed
FY19-23 Major Laboratory Instrumentation	Purchase major laboratory instrumentation, such as high resolution GC-MS or LC-MS to provide for lab testing of newly regulated contaminants.	Active
<i>Vehicles:</i>		
High Lift Fork Loader (Lull)	Purchase High Lift Fork Loader (Lull) to move equipment and materials at Deer Island.	Completed
Prior Vehicle Purchases	Vehicle purchases including TV Inspection Truck, Two Back Hoes, Vector Truck, Water Service Truck, Bucket Machine, Excavator, Grove Crane, Land Fill Loader, Power Sweeper/Catch Basin Cleaner, Front-End Loader, Two Dump Trucks, Crane, and International Tractor/Trailer.	Completed
Ramp Truck	Purchase of Ramp Truck to support Fleet Services.	Completed
Street Sweeper	Purchase of Street Sweeper to support MWRA facilities and community assistance.	Completed
Contaminant Monitoring Equipment	Contaminant monitoring system panel replacement or expansion, and buoys.	Active
FY11-13 Vehicle Purchases	Vehicle purchases planned for FY11-13.	Completed
FY14-18 Vehicle Purchases	Vehicle purchases planned for FY14-18.	Completed

Sub-phase	Scope	Status
FY19-23 Vehicle Purchases	Vehicle purchases planned for FY19-23.	Active
FY24-28 Vehicle Purchases	Vehicle purchases planned for FY24-28.	Future

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

Total Budget	Payments thru FY21	Remaining Balance	FY22	FY23	FY19-23	FY24-28	Beyond FY28
\$42,357	\$25,291	\$ 17,067	\$2,876	\$3,661	\$9,970	\$10,530	\$0

Project Status 5/22	61.4%	Status as % is approximation based on project budget and expenditures. Purchase and installation of security equipment is in process and will continue into FY24.
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Changes to Project Scope, Budget, and Schedule

Project Cost			Scheduled Completion Date			FY19-23 Spending		
FY22	FY23	Chge.	FY22	FY23	Chge.	FY22	FY23	Chge.
\$41,106	\$42,357	\$1,251	Jun-28	Jun-28	None	\$10,092	\$9,970	(\$122)

Explanation of Changes

- Project cost and spending changed primarily due to updated cost estimates for Security Equipment and Installation and FY19-23 Vehicle Purchases.
- Project spending changed due to updated cost estimates listed above and updated cash flow for Contaminant Monitoring Equipment.

CEB Impacts

- No 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 hazardous materials assessment and land appraisals.

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

Expenditure Forecast (in \$000s)

Total Budget	Payments thru FY21	Remaining Balance	FY22	FY23	FY19-23	FY24-28	Beyond FY28
\$1,300	\$0	\$1,300	\$433	\$432	\$865	\$435	\$0

Changes in Project Scope, Budget, and Schedule

Project Cost			Scheduled Completion Date			FY19-23 Spending		
FY22	FY23	Chge.	FY22	FY23	Chge.	FY22	FY23	Chge.
\$1,350	\$1,300	(\$50)	Jun-23	Jun-24	12 mos.	\$899	\$865	(\$34)

Explanation of Changes

- Project cost changed due to updated cost for Land Appraisal and removal of surveying costs.
- Project schedule and spending changed to reflect continuation of contracts for an additional year.

CEB Impacts

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

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 \$8 billion for fiscal years 1986 through 2018.

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.

The purpose of technical assistance contracts is to make available, on a continuing basis, the services of qualified, professional engineering firms to assist MWRA staff on engineering study and/or design initiatives. The contracts involve the engineering disciplines of architecture, civil, structural, geotechnical, surveying, environmental and sanitary, mechanical and process, fire protection, electrical, control systems, chemical, corrosion and odor control, permitting and security. These agency-wide technical assistance contracts supplement in-house staff on high-priority or unanticipated projects, or provide expertise on short-term assignments requiring specialized disciplines that are not cost effective for MWRA to maintain on an in-house basis and will ensure that adequate resources are available to quickly and comprehensively respond to MWRA's needs, particularly when emergency or unanticipated situations arise.

Scope

Sub-phase	Scope	Status
Inventory & Evaluation Phases 1 & 2	Development of a comprehensive, strategic maintenance plan for MWRA. (Completed by July 2005).	Completed
As-Needed CS/REI 1 & 2	As-Needed Construction Services/Resident Engineering Inspection Services. Services/Contracts can be used in circumstances when additional Resident Engineers or senior level Resident Engineers with special expertise are required as well as CS/REI services for in-house or as-needed technical assistance design contracts.	Active
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.	Active

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

Total Budget	Payments thru FY21	Remaining Balance	FY22	FY23	FY19-23	FY24-28	Beyond FY28
\$28,764	\$18,704	\$10,060	\$3,721	\$2,193	\$10,418	\$4,146	\$0

Project Status 5/22	69.5%	Status as % is approximation based on project budget and expenditures. All tasks in <i>Inventory & Evaluation Phases 1 & 2</i> are complete. As-Needed Design 7 was substantially completed in July 2012. As-Needed Design 8 was completed in February 2012. As-Needed Contracts 9 and 10 were completed in January and February 2014, respectively. Contract 11 was completed in August 2015. Contracts 12 and 13 were completed in July 2016 and August 2016, respectively. As-Needed Contracts 14 and 15 commenced in June 2016 and were completed in December 2018. Contracts 16 and 17 commenced in June 2018 with Contract 16 completed in December 2020 and Contract 17 to be complete in December 2021. Contracts 18 and 19 were awarded in October 2020 with Notice-to-Proceed issued in late 2020.
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Changes to Project Scope, Budget, and Schedule

Project Cost			Scheduled Completion Date			FY19-23 Spending		
FY22	FY23	Chge.	FY22	FY23	Chge.	FY22	FY23	Chge.
\$26,869	\$28,764	\$1,895	Dec-22	Dec-24	24 mos.	\$12,669	\$10,418	(\$2,251)

Explanation of Changes

- Project cost and spending changed due to updated cost estimates and addition of two new contracts (As-Needed Design Contracts 20 and 21) offset by the removal of As-Needed CS/REI 2 contract.
- Schedule completion date changed due to the addition of As-Needed Design Contract 21.

CEB Impacts

- 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 consolidated existing MWRA projects (DI Maintenance Facilities and DI CSB Demolition) to provide a central point of review and decision making for space planning decisions across the organization.

The 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. The project also included funds for demolition of the CSB (Construction Support Building) which was built as a temporary structure and has also deteriorated. The CSB Demolition contract was completed in September 2009.

Scope

Sub-phase	Scope	Status
Design & Engineering Services	Design and engineering services to support space plan.	Future
Facilities Construction	Construction of modifications to MWRA facilities in accordance with space plan.	Future
Office Space Modifications	Office space modifications needed as a result of staff moving from CNY to DI and Chelsea facilities.	Active

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

Total Budget	Payments thru FY21	Remaining Balance	FY22	FY23	FY19-23	FY24-28	Beyond FY28
\$18,375	\$371	\$18,004	\$2	\$15,305	\$15,307	\$2,698	\$0

Project Status 5/22	2.1%	Status as % is approximation based on project budget and expenditures. CSB Demolition contract was substantially complete in September 2009. Records Center Shelving and Moving to the interim warehouse/records center was completed in the spring of 2009. Remaining work is to demolish old Administration Building on Deer Island. Some rehabilitation work will need to be done as well. Also, office space modifications for DI and Chelsea.
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Changes to Project Scope, Budget, and Schedule

Project Cost			Scheduled Completion Date			FY19-23 Spending		
FY22	FY23	Chge.	FY22	FY23	Chge.	FY22	FY23	Chge.
\$5,071	\$18,375	\$13,304	Aug-24	Aug-27	36 mos.	\$3,075	\$15,307	\$12,232

Explanation of Changes

- Project cost and spending changed due to addition of Office Space Modifications contract.
- Project schedule updated for Facilities Construction contract.

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 completed to-date include: A comprehensive “green energy” initiative that brought solar, wind and hydroelectric power to a number of MWRA facilities.

Scope

Sub-phase	Scope	Status
DI Solar Residuals Odor Control (ROC)	Design and construction of 100 kw photovoltaic array. Projected annual output estimated at 105,000 kwh.	Completed
DI Wind	Design and construction of 2 600kw solar wind turbine systems. Projected annual output estimated at 2,300,000 kwh. Project added to include repair/rehabilitation contract.	Completed
DI Solar Maintenance/Warehouse	Design and construction of 180kw photovoltaic array. Projected annual output estimated at over 200,000 kwh. Project funding includes \$735K million from the American Recovery and Reinvestment Act (“ARRA”).	Completed
Future Renewable Energy (7270)	Design and construction for future renewable energy projects throughout the Authority.	Future
DI Solar Power Purchase Agreement (PPA)	Design and construction of 456 kw photovoltaic array through a third party 20 yr Power Purchase Agreement. Projected annual output estimated at 520,000 kwh. Project partially subsidized by \$1.1M from ARRA program. No capital costs to MWRA; pay for electricity generated.	Completed
Loring Road Hydro	Construction of a 200 kW hydropower turbine/generator at Loring Road. Projected annual output estimated at 1,200,000 kwh. Project funding includes \$1.5 million from the ARRA program.	Completed
Energy Advisory Consultant Services	Consultant for comprehensive energy advisory services on throughout the Authority.	Completed
Technical Assistance	Various technical assistance contracts to aid solar, wind, and hydro initiatives.	Completed
Carroll WTP Solar Construction	Installation of photovoltaic cells with generating capacity of 496 kw at Carroll WTP plant. Projected annual output estimated at over 616,000 kwh. Project funding includes \$2.2 million from the ARRA program.	Completed

Charlestown Wind	Design and construction of 1.5 MW wind turbine system. Projected annual output estimated at 3,000,000 kwh. Project funding includes \$4.8 million from the ARRA program.	Completed
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Expenditure Forecast (in \$000s) and Project Status

Total Budget	Payments thru FY21	Remaining Balance	FY22	FY23	FY19-23	FY24-28	Beyond FY28
\$26,184	\$18,184	\$8,000	\$0	\$0	(\$234)	\$8,000	\$0

Project Status 5/22	69.4%	Status as % is approximation based on project budget and expenditures. Carroll Water Treatment Solar and Loring Road Hydro Construction were completed in May 2011. Carroll Water Treatment Plant Solar Construction and Charlestown Wind Project were completed in 2011. DITP Solar PPA was completed in 2011. Hatchery Pipeline & Hydro was substantially complete in September 2017.
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Changes to Project Scope, Budget, and Schedule

Project Cost			Scheduled Completion Date			FY19-23 Spending		
FY22	FY23	Chge.	FY22	FY23	Chge.	FY22	FY23	Chge.
\$23,684	\$26,184	\$2,500	Dec-24	Dec-24	None	(\$234)	(\$234)	\$0

Explanation of Changes

- Project cost changed due to updated cost estimate for Future Renewable Energy contract.

CEB Impacts

- None identified at this time.

Information Technology (IT)

The MIS Department provides MWRA with the secure information processing services necessary to carry out the Authority's mission. Applications in use range from financial to operational, and enhance MWRA's ability to access data and improve internal controls, reporting, and management performance. In addition to computing and telephone systems, the department also provides library and records management services. The MIS department supports more than 1,100 MWRA users, including those at the Charlestown Navy Yard (CNY), Chelsea Facility, Deer Island Wastewater Treatment Plant, Southborough Facility, Carroll Water Treatment Plant, and other remote sites.

Cyber security is of the utmost importance to the MWRA and as a result of the American Water Infrastructure Act (AWIA), MIS has placed a renewed focus on assessing the security of IT services it delivers. Cyber security assessments will be incorporated into IT initiatives as needed in order to comply with this regulation.

In order to provide these services, MIS has structured its capital improvement projects as follows:

Application Improvement Program – This program, along with associated projects, continue MWRA's efforts to update and enhance a wide range of applications to improve efficiencies of business processes and effectiveness of the staff while ensuring the availability and integrity of the MWRA's data resources.

Information Security Program – This program focuses on the strength, resiliency, and sustainability of MWRA's cyber security practices for its data and computing-related assets. The program also monitors for and protects against penetrations, intrusions, and malicious actions from both internal and external threats. The projects associated with this program continue to assess, implement, and improve MWRA's information security protections, including recommendations to improve each IT system's security profile.

Information Technology Management Program -This program improves the organization of MIS and the oversight processes for selecting and implementing IT solutions throughout the MWRA. This program updates the IT Steering Committee to ensure that the business and technology priorities of the MWRA are aligned and are being met.

Information Technology Improvement Program-This program assesses and implements consolidated and optimized versions of core IT infrastructure elements to improve and optimize data management practices, including: storage, backup, archive and purge processes, and technologies. These improvements cover the 1,060 desktops, 392 laptops, 60 physical servers, more than 400 virtual machines, 183 tablets, 286 smartphones, 19 Wide Area Network circuits and associated ancillary equipment, as well as the almost 4 petabytes (PB) of data managed and protected by MIS.

S. 940 Applications Improvements Program

Project Purpose

To develop, improve, and procure information technology (IT) applications to improve efficiencies of business processes associated with managing the operations, and support divisions.

Project History and Background

This program will continue the work started in previous years to update and enhance a wide range of applications to improve efficiencies of business process and effectiveness of the staff performing the processes while ensuring the availability, integrity and confidentiality of the MWRA's data resources. The program will continue to enhance the integration and availability of data to provide a more holistic view of the overall operational status with seamless access to the detailed data.

Scope – The table describes the CIP phases and associated projects.

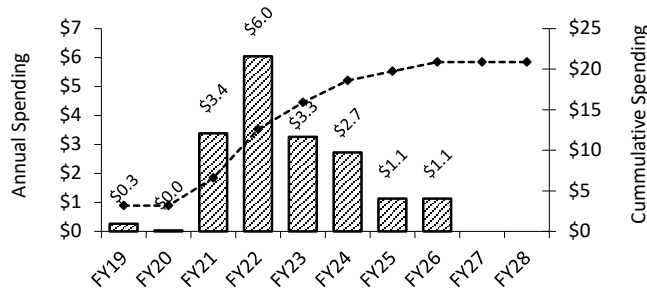
Sub-phase	Scope	Status
GIS Applications & Integration	Expand role of GIS technology for scientific, environmental and engineering applications. This project will assess the current state of the GIS Program and make recommendations for improvements. Scheduled to commence in FY22.	Future
Lawson Upgrade	Migrate to a SaaS environment and upgrade current Infor application system to version 11 and implement these additional application modules: Global Human Resources which will provide the latest enhancements to the Employee Safety, Position Budgeting, Benefits, Employee Relations, Absence and Occupational Health Modules and Work Force Management which will provide a new time entry and tracking system.	Active
Pre-Treatment Information Management System (PIMS) Replace or Build	PIMS is used by the MWRA to monitor the pretreatment program pursuant to MWRA's NPDES permit and EPA regulations. Planned are the PIMS database upgrade to Oracle 19 and mitigation of web page security header vulnerabilities. Additional plans include transitioning from Pilot mode for WebSMR CromERR to live implementation, upgrading Middle Tier & Web Servers from MS Windows 2012 to MS Windows 2019, as well as, upgrading the PIMS Client from 32 bit to 64-bit Client.	Future
SAP BO Upgrade/ Migration	Upgrade SAP Business Objects Suite to v4.3, including Crystal Reports to v2020. The upgraded Business Objects platform will support existing custom reports and provide data visualization to end-users of various data systems. Nearly 1000 existing Crystal reports will be migrated to the new platform. The upgraded platform will also host existing Oracle Discoverer Reports. There is an estimated 500 Oracle Discoverer reports to be migrated. This work involves creating new Universes and Web Intelligence Reports.	Active
Enterprise Content Management	Implement an Authority-wide Content Management Program to address dependence upon paper records, support records management and improve access to information, streamline workflows and replace several department-level solutions.	Active
WQRS Aquarius	Implement functionality improvements to the Water Quality Reporting System.	Completed

Sub-phase	Scope	Status
Maximo Interface Enhancements	The MWRA utilizes a custom interface to synchronize the Maximo Enterprise Asset Management (EAM) and Infor/Lawson Enterprise Resource Planning (ERP) systems. Enhancements are being done in an effort to build on the existing interface by streamlining process flows, enhancing functionality, and adding data validation for optimal performance and transaction integrity. Eliminating user errors ensures better data and reduces staff time involved troubleshooting problems	Active
Laboratory Information Management System (LIMS) Upgrade	Upgrade current Laboratory Information Management system to version 7. Phase II will leverage lessons learned from Phase I and implement ELN for the Wastewater Labs.	Future
Hyperion Pillar	The Hyperion Pillar application, currently used for budgeting, is outdated and no longer supported by Oracle and needs to be replaced with a commercially viable product.	Future
HOML	Harbor outfall monitoring loading application provides a web portal for outside contractors to load Boston Harbor sampling data used to submit NPDES reports to EPA by ENQUAL group. Future plans for HOML include OKTA Integration (Single Sign-On) and negotiating with vendor support company to provide support services.	Complete
PI (OSI)	Upgrade and consolidation of the separate DI and FOD PI systems into one.	Future
Maximo (Upgrade)	Upgrade current IBM Maximo and ICD to version 7.6.1 (\$200,000- FY23)	Future

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

Total Budget	Payments thru FY21	Remaining Balance	FY22	FY23	FY19-23	FY24-28	Beyond FY23
\$21,459	\$3,792	\$17,666	\$2,161	\$4,999	\$8,060	\$10,506	\$0

Application Improvements Program



Changes to Project Scope, Budget, and Schedule

Project Status 5/22	19.9%	Status as % is approximation based on project budget and expenditures.
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Project Cost	Scheduled Completion Date	FY19-23 Spending
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FY22	FY23	Chge.	FY22	FY23	Chge.	FY22	FY23	Chge.
\$20,227	\$21,459	\$1,232	Sep-25	Dec-25	None	\$11,417	\$8,060	(\$3,357)

Explanation of Changes

- Project cost and spending changed primarily due to updated cost estimates for MAXIMO interface Enhancements and SAP BO Migration.
- Spending change due to updated schedules for Lawson Upgrade and MAXIMO Upgrade and updated cost estimates listed above.
- Schedule updated for Lawson Upgrade revised schedule.

CEB Impacts

- None identified at this time.

S. 942 Information Security Program

Project Purpose

To ensure the availability, integrity and confidentiality of the MWRA's data resources through the selection and implementation of information technology solutions associated with cyber security.

Project History and Background

This program focuses on the resiliency and sustainability of the MWRA's data security practices. The projects associated with this program established policies, procedures and an information security awareness program for all of the MWRA. This program included the design of both an information security program and electronic security plans in order to provide a more formal, comprehensive IT security framework that is compliant with Federal Standards.

Scope – The table describes the CIP phases and associated projects.

Sub-phase	Scope	Status
MSSP	The current Managed Security Service Provider (MSSP) contract ends on 1/4/23.	Active
MSSP/SIEM	New contract for Managed Security Service Provider (MSSP) and Security infrastructure technology refresh.	Active
ITSM Access Management	Implementation of additional technologies to manage and monitor user access to IT assets and services.	Active
Information Security Plan Implementation	Coordinate a system-by-system development of Information Security Plan to apply security controls and standards to each system within MWRA's application portfolio.	Future
IT Security Program (ISP) Development	Formal and informal activities to inform staff (including contractors and business partners) of the information security risks associated with their activities and their responsibilities in complying with MWRA policies and procedures designed to reduce these risks.	Ongoing

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

Total Budget	Payments thru FY21	Remaining Balance	FY22	FY23	FY19-23	FY24-28	Beyond FY28
\$8,428	\$2,338	\$6,090	\$557	\$1,503	\$2,690	\$4,030	\$0

Project Status 5/22	28.4%	Status as % is approximation based on project budget and expenditures.
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Changes to Project Scope, Budget, and Schedule

Project Cost			Scheduled Completion Date			FY19-23 Spending		
FY22	FY23	Chge.	FY22	FY23	Chge.	FY22	FY23	Chge.
\$7,976	\$8,428	\$452	Dec-24	Dec-27	36 mos.	\$4,568	\$2,690	(\$1,878)

Explanation of Changes

- Project cost changed due to updated cost estimate for MSSP.
- Project schedule and spending changed due to updated schedules for MSSP/SIEM and IITSM Access Management as well as updated cost estimate for MSSP.

CEB Impacts

- None identified at this time.

S. 944 Information Technology Management Program

Project Purpose

To improve the overall efficiencies in how MIS delivers IT services and to more effectively adapt to the changing business needs associated with managing the operational and administrative systems of the Authority.

Project History and Background

This program improves the organization of MIS and the oversight processes for selecting and implementing IT solutions throughout the MWRA. This program updates the IT Steering Committee to ensure that the business and technology priorities of the MWRA are aligned and are being met.

Scope – The table describes the CIP phases and associated projects.

Sub-phase	Scope	Status
IT Project Management Methodology	Implement a set of procedures, standards, tools and techniques that will improve the predictability of deliverables and cost associated with information technology projects.	Ongoing

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

Total Budget	Payments thru FY21	Remaining Balance	FY22	FY23	FY19-23	FY24-28	Beyond FY28
\$2	\$2	\$0	\$0	\$0	\$2	\$0	\$0

Project Status 7/22	Ongoing	This is an ongoing effort to evaluate and identify opportunities for improvement within the program.
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Changes to Project Scope, Budget, and Schedule

Project Cost			Scheduled Completion Date			FY19-23 Spending		
FY22	FY23	Chge.	FY22	FY23	Chge.	FY22	FY23	Chge.
\$200	\$2	(\$198)	Nov-21	Nov-21	None	\$200	\$2	(\$198)

Explanation of Changes

- Project cost and spending changed due to budget decreased to Life to date actuals for IT Project Management Methodology.

CEB Impacts

- None identified at this time.

S. 946 IT Infrastructure Program

Project Purpose

To assess and implement consolidated and optimized versions of equipment and databases, and improve and optimize data management practices.

Project History and Background

The MWRA currently owns and operates 1,060 desktops, 392 laptops, 60 physical servers, more than 400 virtual machines, 183 tablets, 286 smartphones, 19 Wide Area Network circuits and associated ancillary equipment, as well as almost 1.75 petabytes (PB) of data. This program assesses and implements consolidated and optimized versions of core IT infrastructure elements to improve and optimize data management practices, including: storage, backup, archive and purge processes, and technologies.

Scope – The table describes the CIP phases and associated projects.

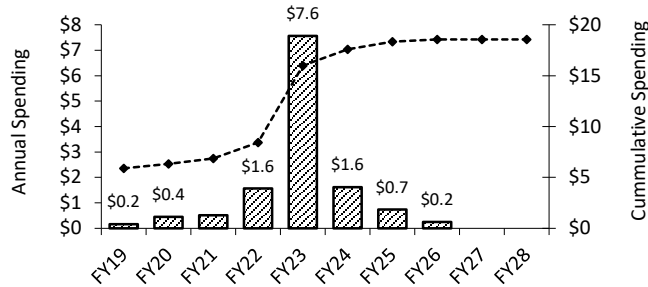
Sub-phase	Scope	Status
IT Infrastructure Upgrades	Server upgrades will be performed in FY18-FY 20 These upgrades will use specifications developed for server hardware and software including the ability to implement greater virtualization as well as take advantage of opportunities to standardize operating systems, and hardware, for greater ease of support.	Completed
Cabling	Replacement of older Ethernet and fiber cabling to support PBX replacement.	Active
SAN Storage	Implement recommended IT infrastructure changes that include enhancements to capacity and performance of networking and communications, storage, backups, server consolidation, disaster recovery, and integration approach and tools.	Active
Oracle Database Appliance	Upgrade Oracle Database appliances that will be end-of-life.	Future
Servers Upgrades	Server upgrades will be performed based on the end-of-life dates for existing hardware.	Future
Near Field Communications	Implementation of wireless asset management technology.	Future
Enterprise Data Management	Develop an Authority-wide data architecture that maximizes benefit from data capture and ongoing maintenance. Implement Authority-wide data modeling and management, to standardize data access across multiple systems for a consistent view of the Authority across all business units.	Future
NetScalers	Upgrade the Netscaler hardware on which the XEN Mobile/XEN App/Work Space applications reside.	Future

Sub-Phase	Scope	Status
Telephone System Upgrade	Replace the end-of-life PBX telephone system. The Authority's current hardware cannot be replaced except with refurbished equipment as it is no longer being manufactured. A new system will offer up-to-date technology with features that are not available in the 20 year old system	Active
Core Switches	Upgrade of existing end-of-life hardware.	Future
Edge Switches	Upgrade of existing end-of-life hardware.	Active
Disaster Recovery	Design and implementation of disaster recovery solution.	Future
Instrumentation & Controls IT	Design and implementation of technologies to monitor and manage IT infrastructure and applications.	Future
Future Workplace	Infrastructure changes and enhancements to support the future workplace initiative to provide a single streamlined user experience regardless of location. Support for remote work, shared work and collaboration spaces.	Active

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

Total Budget	Payments thru FY21	Remaining Balance	FY22	FY23	FY19-23	FY24-28	Beyond FY28
\$18,581	\$6,848	\$11,732	\$1,569	\$7,561	\$10,248	\$2,601	\$0

IT Infrastructure Program



Project Status 5/22	40.3%	Status as % is approximation based on project budget and expenditures.
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Changes to Project Scope, Budget, and Schedule

Project Cost			Scheduled Completion Date			FY19-23 Spending		
FY22	FY23	Chge.	FY22	FY23	Chge.	FY22	FY23	Chge.
\$17,977	\$18,581	\$604	Jul-24	Jun-25	11 mos.	\$10,683	\$10,248	(\$435)

Explanation of Changes

- Project cost changed due to updated cost estimate for Oracle Database Appliance contract.
- Schedule updated for Disaster Recovery contract.
- Project spending changed due to updated schedule for Enterprise Data Management and updated cost estimate and schedule for Oracle Database Appliance contract.

CEB Impacts

- None identified at this time.