

● Information Technology Strategic Plan (ITSP) – Quarterly Report for the period ending December 2005

Summary

This report provides a quarterly update of the Information Technology Strategic Plan (ITSP) for the period ending December 2005. There were a number of important milestones achieved during the period that are summarized later in this report.

The Information Technology Strategic Plan (ITSP) provides a roadmap to guide the investment and deployment of information technology (IT) at Metropolitan over the next three to five years. The plan is updated periodically in light of changing business needs and technologies. The goal of the plan is to leverage information technology investments to increase long-term reliability, while improving Metropolitan’s overall efficiency and effectiveness. Oversight of IT investments is provided by the IT Guidance Committee consisting of senior and executive management, and the Capital Investment Plan (CIP) Evaluation Team as part of the annual CIP planning process.

Attachments

Attachment 1 provides a summary of Board actions, appropriation and expenditure status for the ITSP programs through December 31, 2005.

Attachment 2 provides an updated list of candidate projects where project management services may be provided by consultants selected through RFP 666. These projects are included in the Information Technology Strategic Plan (Approps. 15376, 15259, and 15397). Authorization was previously granted by the Board in August 17, 2004 to establish professional services agreements with three consulting firms (Westin Engineering, Inc., CSC Consulting Inc., and Geer & Geer Engineering) selected through RFP 666 for an aggregate contract amount not to exceed \$2.2 million.

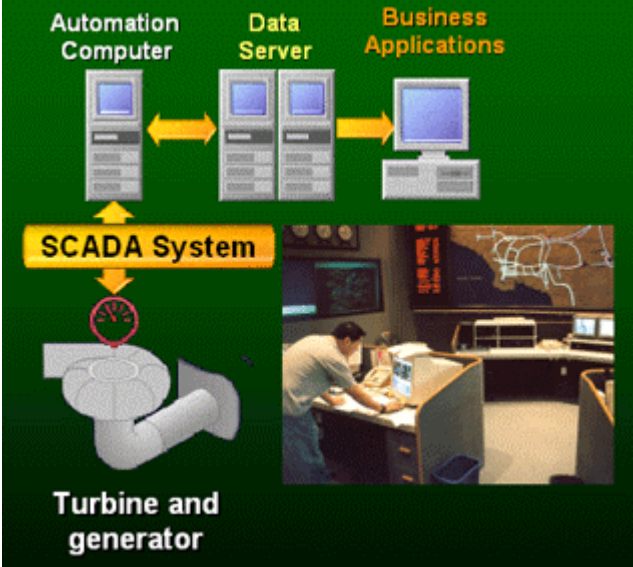

Detailed Report

IT Strategic Plan by Business Driver

Below are highlights of progress and major milestones reached for ITSP projects during the period of October 1st through December 31st, 2005. The projects are categorized by business driver as follows:



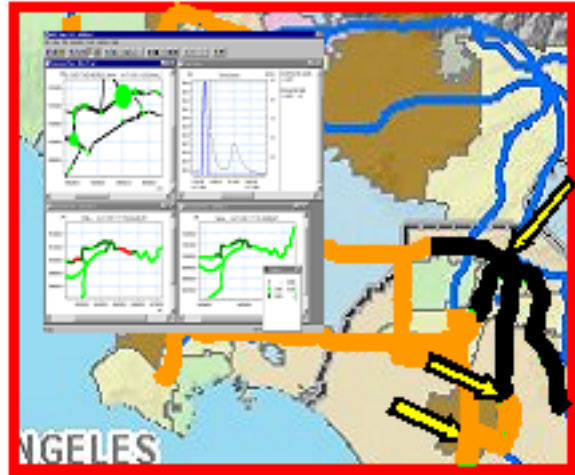
IT STRATEGIC PLAN
<p>Enhanced Reliability – enhance system reliability</p> <p>Improved Water Quality – ensure water quality excellence</p> <p>Enhanced Cyber Security – effectively manage and safeguard assets</p> <p>Productivity / Cost Efficiency – improve process efficiency and effectiveness</p>

<p align="center">Enhanced Reliability:</p>	<p align="center">Through 2nd Quarter Budget: \$ 1.85 M Expended: \$ 1.75M</p>
<p>Key accomplishments included:</p> <p>Implemented Energy Management System (EMS) – Phase I</p> <ul style="list-style-type: none"> ■ The Energy Management System is new software designed to streamline hydroelectric plant (HEP) power management and billing. Previously, this was primarily a manual function augmented by the use of spreadsheets. The revenue generated by Metropolitan through hydroelectric power management ranges from \$15 million to \$20 million per year. An automated system was needed to facilitate recordkeeping and ensure sufficient audit trails are maintained for the power management process. Recent deregulation and accounting changes in the power industry have made these processes much more complex, thereby increasing Metropolitan’s workload. This new system will help Metropolitan manage this additional work without increasing staff in this area. ■ During the period, final testing was completed and the new Energy Management System was deployed in October 2005 to streamline HEP power management and billing. <p>Initiated Automated Meter Reading System Upgrade Project</p> <ul style="list-style-type: none"> ■ The Automated Meter Reading (AMR) System is the primary source of data for water billing, providing information on the amount of water delivered to each member agency. There are approximately 450 water meters located throughout Metropolitan’s water distribution system. The current AMR system is based on outdated technology that needs to be upgraded to continue functioning properly. 	 <p>The diagram illustrates the data flow in the Energy Management System. At the bottom, a 'Turbine and generator' is connected to a 'SCADA System'. The SCADA System then feeds data into an 'Automation Computer', which is linked to a 'Data Server'. The Data Server, in turn, provides information to 'Business Applications'. An inset photograph shows a person working at a computer workstation in a control room.</p>  <p align="center">Water flow meter tied into AMR system</p>

- This project will upgrade the AMR system based on a phased approach implementing commercially available off-the-shelf technology. The first phase will upgrade the AMR remote terminal units at approximately 30 water meter locations.
- A contractor, FluidIQs, was selected through a competitive request for proposals (RFP) process. In October 2005, the Board authorized entering into an agreement with Fluid IQs to help implement Phase I of the AMR Upgrade project.
- Upon FluidIQs’ successful deployment of the new AMR units and completion of Phase I, staff plans to return to the Board with a recommendation to proceed with Phase II. Phase II will upgrade the AMR remote terminal units at the remaining 420 meter locations, at an estimated cost of \$4 million.

Completed Definition Phase of the Real Time Operating System project

- The Real Time Operating System (RTOS) Modeling project will develop and implement a set of hydraulic models to simulate the behavior of Metropolitan’s water distribution system. Currently, Metropolitan relies heavily on experienced operators and planners in conjunction with a combination of disparate systems, spreadsheets and manual efforts to plan and implement the necessary adjustments. This is very a time consuming task. Further, it is becoming an increasingly difficult task to perform in this manner given the growing water system complexity, increased water demands, high variability of water resources, and more and increasingly stringent water quality regulations.



Real Time Operating System

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- During this period, a comprehensive set of system requirements was completed. Project cost estimates were reassessed based on the detailed requirements identified. In light of the more comprehensive understanding of the requirements, the total project estimate was revised from \$3.422 million to \$4.644 million.
- The pilot phase is scheduled to begin in January 2006. The pilot will serve as a “proof of concept” by developing working hydraulic and water quality models that simulate water grade, flow and quality for the Rialto Feeder portion of Metropolitan’s distribution system.
- Upon successful completion of the Rialto Feeder pilot, staff will report to the Board on results and will request funds to complete the implementation of RTOS for the remaining portions of the Metropolitan’s distribution system.

Completed procedure development exercises to test IT recovery capabilities

- The business systems / data recovery project is underway and will increase Metropolitan’s capability to recover and restore its critical IT systems in the event of a disaster so that water and business functions can resume in a timely manner. This project will ensure that Metropolitan’s critical IT infrastructure components, including servers, data and voice networks, and key software applications and data can be recovered in a timely manner.
- During the period, the remaining Procedure Development Exercises (PDEs) were successfully completed. PDEs are functional exercises that are used to document the recovery processes for Metropolitan’s critical IT infrastructure components and key software applications.



Metropolitan’s Disaster Recovery Facility

- The final testing phase of the project (Integrated Recovery Testing) will be conducted in the first quarter of calendar year 2006 and will involve end users executing realistic business scenarios to validate the usability and full capabilities of the disaster recovery IT recovery plan, procedures, and infrastructure.

Issued “Mobile Technology” RFP for Maintenance Management System

- The objective of the Maintenance Management System is to better manage the performance of WSO maintenance and operations activities. Mobile technology will allow maintenance staff to enter information on work completed directly into the system from the field, streamlining the process. This process improvement is expected to save maintenance staff up to 15 minutes per day per employee. This translates to a savings of up \$360,000 per year.
- During the period, responses to the Mobile Technology RFP were received. The mobile technology project is expected start this fiscal year 2005/06, with deployment scheduled for fiscal year 2006/07.



Mobile Technology



Pocket PCs

Completed Telecommunication Study for Two Way Radio

- The overall project objective is to enhance the reliability of Metropolitan’s two-way radio system used to communicate during emergencies.
- During the period, a consultant study for the two-way radio system was completed. The study included analysis of two-way radio coverage and cost estimates for upgrading the system.



Other IT accomplishments related to Enhanced Reliability

Monitor replacement initiative

- Metropolitan launched an initiative to replace outdated CRT-style computer monitors with energy efficient flat panel models. As part of this initiative, all primary monitors at Union Station and all field site offices will be replaced. Most of the monitors are over ten years old and are due for replacement consistent with industry standards and Metropolitan’s normal replacement cycle.
- The objective of this project is to proactively replace outdated monitors before they fail, causing employee downtime. Other anticipated benefits include reduced eyestrain for users and lower energy costs.
- During the period, primary monitors were replaced at Jensen, Diemer, and Mills Treatment Plants, Lake Mathews, Sacramento and part of Union Station headquarters.



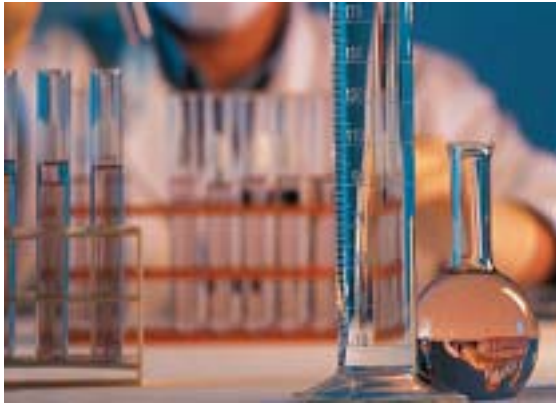

Flat panel monitor

PC Replacement

- Planning was initiated for the replacement of desktop and laptop PCs for next fiscal year. The current equipment is more than five years old.

Expenditures in the Enhanced Reliability category were less than budgeted. The focus of staff's effort was devoted to completing the highest priority projects already in progress. Work on other new initiatives was deferred until additional resources become available.



Improved Water Quality:	Through 2nd Quarter Budget: \$39.2 K Expended: \$ 116.8 K
<p>Key accomplishments included:</p> <p>Completed the Oxidation Demonstration Plant Control System Replacement project</p> <ul style="list-style-type: none">■ The Oxidation Demonstration Plant (ODP) is Metropolitan’s primary research facility and is used to test emerging technologies and improve the District’s ability to meet new water quality regulations.■ This project replaces an old Westinghouse distributed control system that has been in operation since 1991 and has reached the end of its life cycle. The upgrade allows the ODP to be operated using Metropolitan’s standard SCADA system.■ During the period, final programming work and testing was completed and the new ODP control system was brought on-line in December 2005. <p>Technology accomplishments for water quality related projects include:</p> <p>Jensen Treatment Plant</p> <ul style="list-style-type: none">■ The Jensen Oxidation Retrofit Project (ORP) is a large capital program to add ozonation to the Jensen Plant. A major component of this program included design, programming, and installation of hardware and software to control the ozone process.■ During the period, staff completed final remote terminal unit (RTU) instrumentation and graphic screen checkout for each ozone process.	  <p>Jensen Treatment Plant</p>

Skinner Treatment Plant

- The Skinner ORP is a large capital program to add ozonation to the Skinner Plant. A major component of this program includes design, programming, and installation of hardware and software to control the ozone process.

During this period, major accomplishments included:

- Developed specifications and initiated purchase of SCADA RTUs for the ozone and chemical feed systems.
- Completed design of interfaces between field instrumentation and the SCADA system for Washwater Reclamation Plant Number 3 and Washwater Reclamation Plant Number 2 Flocculators.
- Participated in the failure analysis of the ozone control systems, which was conducted in concert with the primary vendors: Ozonia and Imalog.

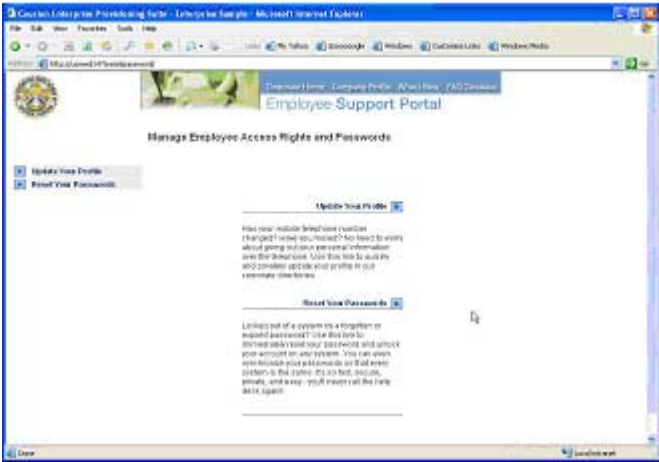
Expenditures in the Improved Water Quality category were greater than budgeted because costs expected in fiscal year 2004/05 were not incurred until fiscal year 2005/06. A portion of the variance is attributed to final invoices associated with the LIMS Upgrade, which was completed under budget. Remaining variance is associated with the ODP project, which is scheduled to close under budget in January 2006.

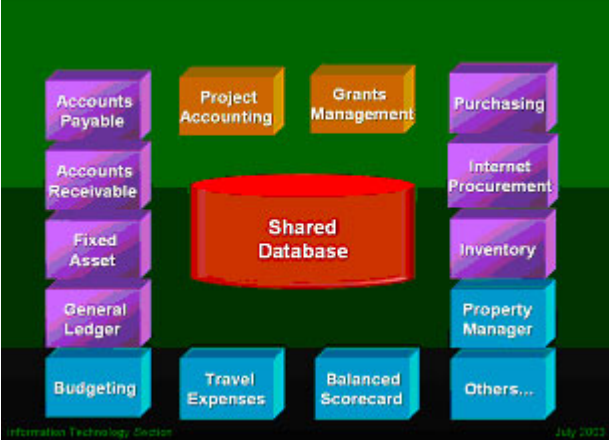


Oxidation Retrofit Program



Lake Skinner

<p style="text-align: center;">Enhanced Cyber Security:</p>	<p style="text-align: center;">Through 2nd Quarter Budget: \$92.4 K Expended: \$ 174.6 K</p>
<p>Key accomplishments included:</p> <p>Completed pilot for self-service password reset</p> <ul style="list-style-type: none"> ■ This project will provide Metropolitan computer users with the ability to reset their own passwords. This self-service capability will significantly reduce the requirement for staff to call into the help desk for password resets, thereby yielding labor savings. The estimated annual savings is \$120,000. ■ During the period, the pilot phase was successfully completed. The deployment of the self-service password reset system is planned for January 2006. <p>Overall, expenditures in the Enhanced Cyber Security area were above budget. Expenditure variances are due to costs being incurred earlier in the fiscal year than planned. It is anticipated that these projects will be completed on budget.</p>	 <p style="text-align: center;">Self-service password reset</p>

<p>Productivity / Cost Efficiency:</p>	<p>Through 2nd Quarter Budget: \$ 3.05 M Expended: \$ 1.36 M</p>
<p>Key accomplishments included:</p> <p>Assessed Interface between Project Scheduling and Project Accounting modules</p> <ul style="list-style-type: none"> ■ Project accounting was a new software module that was implemented in September 2005 to provide project managers with improved visibility over charges and credits that impact their programs, and with the ability to efficiently monitor both actual and committed costs. The project accounting module also contains additional controls that help avoid incorrect charges to projects. In addition, other project accounting work, such as cost transfers, can be accomplished much more efficiently. ■ During the period, an assessment was completed to investigate establishing an interface between the project scheduling software (Primavera) used at Metropolitan with the new Project Accounting System. Such an automated interface would avoid the duplicate data entry that is required now. Via this interface, project tasks in the project scheduling system would be used to automatically update the project accounting system. In addition, actual project costs captured in project accounting would be used to automatically update the project scheduling system. <p>Overall, expenditures were below budget in the productivity/cost efficiency category during the fiscal year, as some projects expected to begin were deferred to focus available resources on the highest priority efforts. Projects underway are all projected to be completed within budget.</p>	 <p style="text-align: center;">Project Accounting and Grants Management</p>

Board Report (Information Technology Strategic Plan (ITSP) –
Quarterly Report for the period ending December 2005)

Attachment 1

Summary of Board actions: The following table provides a summary of ITSP Board actions from February 2002 through December 2005.

Board Action Date	Appropriation No.	Description	Appropriation	Expenditure (Through December 31, 2005)
October-02	15397	Control System Enhancement Program (CSEP)	\$ 11,000,000	\$3,375,025
February-03	15406	Laboratory Information Management System (LIMS)	\$ 1,175,000	\$1,015,696
May-03	15408	Maintenance Management System (MMS)	\$ 605,000	\$493,657
July-03	15411	Oracle E-Business Suite & Grants Management	\$ 4,038,230	\$3,492,626
September-03	15376	Enterprise GIS Project	\$ 4,377,000	\$3,191,732
October-03	15411	Peoplesoft Self Service Modules	\$ 1,850,000	\$1,479,694
April-04	15376	IT Infrastructure Program	\$ 5,603,000	\$4,895,504
Jul-04	15378	IT Security Program	\$ 925,000	\$373,094
			\$ 29,573,230	\$18,317,028

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Attachment 2

Following is an updated list of candidate projects where project management services may be provided by consultants selected through RFP 666. These projects are included in the Information Technology Strategic Plan (Approps. 15376, 15259, and 15397).

1. Energy Management System (previously called Power Management System)

This project is to investigate, select and install an energy management system to help manage and administer power operations for Metropolitan's hydroelectric generators, Colorado River Aqueduct pumps and, potentially, treatment plant power operations.

3. Automated Meter Reading System Upgrade

The automated meter reading (AMR) system remote terminal unit (RTU) upgrade will replace the existing AMR RTUs with an enhanced unit that provides additional capabilities while simplifying maintenance.

4. Enhanced Distribution System Control

This project provides the SCADA programming that will unify distribution system processes together to be controlled as one comprehensive system.

5. CRA Control Integration

Upon completion of the pump station upgrades, as part of the Colorado River Aqueduct (CRA) reliability program, this project will tie together the pump plants and allow the CRA to be controlled as one system.

6. Control System Enhancement Program

An oversight project that will house program management activities and a number of studies and implementation efforts designed to coordinate implementation of Phase I projects in the Water System Control Master Plan, as well as provide direction and preparation for Phases II and III of the plan.

7. Maintenance Management System – Mobile Technology Deployment And Materials Management System Interface

This project provides mobile technology for use by maintenance field staff and implement an interface between the material and maintenance management systems to capture material costs along with labor costs associated with maintenance work orders.

8. Real Time Operations System (RTOS) Project

This project will provide an integrated set of water system models used to dynamically simulate the behavior of the water delivery system. This application will be used for operations simulations and scenario management, emergency response, operator training, control system design and testing, engineering evaluations, water system planning, etc.

9. Programmable Logic Controller (PLC) Replacement

Metropolitan currently has over 120 installations of PLCs controlling various areas of the water system. Until the recent completion of Phase I, these installations were comprised of 18 different models from 10 different manufacturers, many of which were no longer supported. Metropolitan is now using a standard PLC units, including uniform programming, parts, training and security. Phase II of this initiative will replace older standard PLC's as they reach the end of their life cycle.

10. Phase One Network Upgrade

This project's objective is to replace end-of-service-life equipment used for local area networks at Union Station and at the field locations.

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11. Phase Two IT Network Upgrade

This project's objective is to improve the performance and increase the reliability of Metropolitan's wide area network that interconnects all Metropolitan facilities.

12. Enterprise Infrastructure Upgrade

This project will upgrade and consolidate IT infrastructure components such as servers, disk storage devices and software.

13. Two-Way Radio System Upgrade

This project's objective is to upgrade Metropolitan's two-way radio system to strengthen its reliability, improve coverage and simplify use of the radio system.

14. Videoconference Systems Upgrade

This project's objective is to replace old and unreliable videoconferencing systems which support communications for Water System Operations, Executive Offices, and all other Metropolitan staff between facilities and other entities for meetings, training and emergency response.

15. Automation Documentation Survey

This project will deliver a survey of Engineering, IT and operations documentation in support of water system failure analysis activities to be performed in the future.

16. Local Process Optimization

This project's objective is to provide software that helps optimize water processes (e.g., ozone production costs) at Metropolitan's treatment plants.

17. Chemical Inventory Usage System and Electronic System Log Upgrades

This project upgrades the Chemical Inventory Usage System (CIUS) and Operator's Electronic System Log (ESL) applications. The CIUS system is used to track and order treatment plant chemicals with respect to regulatory storage and availability requirements. The ESL is used to monitor and archive operations activities on an ongoing basis, across the system.

18. Water Planning System

This project's objective is to provide an integrated application to support Water Resource Management and Water System Operations in water planning activities.

19. Communications Subnet Upgrades

Subnets are relatively small communications loops used to monitor and control a variety of operations instruments and equipment. This project will standardize and upgrade, where necessary, the array of field communications sub-networks currently installed throughout the water system. The project also will establish standards for future deployments.