

- Information Technology Strategic Plan (ITSP) – Quarterly Report for the period ending March 2006

## Summary

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This report provides a quarterly update of the Information Technology Strategic Plan (ITSP) and information technology (IT) activities in general for the period ending March 2006. There were a number of important milestones achieved during the period that are summarized later in this report.

The ITSP provides a roadmap to guide the investment and deployment of information technology 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 management, and the Capital Investment Plan (CIP) Evaluation Team as part of the annual CIP planning process.

## Attachments

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**Attachment 1** provides a summary of Board actions, appropriation and expenditure status for the ITSP programs through March 31, 2006.

## Detailed Report

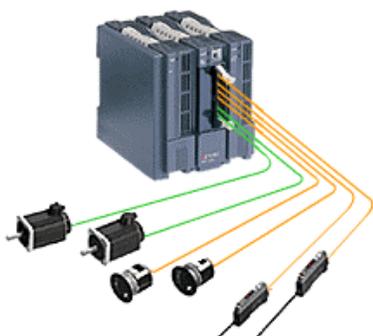
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### IT Strategic Plan by Business Driver

Below are highlights of progress and major milestones reached for ITSP projects during the period of January 1<sup>st</sup> through March 31<sup>st</sup>, 2006. The projects are categorized by business driver as follows:



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

<b>Enhanced Reliability:</b>	<b>Through 3<sup>rd</sup> Quarter</b> <b>Budget: \$ 3.15 M      Expended: \$ 1.81 M</b>
<p><b>Key accomplishments included:</b></p> <p><b>Completed Phase I of the Programmable Logic Controller Standardization Project</b></p> <ul style="list-style-type: none"> <li>■ The programmable logic controller (PLC) units are used to control critical processes, such as hydroelectric plants, ozone and treatment plant flocculation systems. These devices are tied into Metropolitan’s Supervisory Control and Data Acquisition (SCADA) system.</li> </ul> <p>Over the years, Metropolitan has acquired over 100 PLCs from 10 different manufacturers, comprised of 18 different models. Several of these are no longer supported by the vendors. The PLC standardization project was devised as a system-wide effort to select and implement a single brand of PLC equipment and software.</p> <p>During the period, Phase I was completed. Now all PLCs have been standardized on one brand. Metropolitan support staff was trained.</p> <p><b>Obtained Board authorization to implement Phase II of the Programmable Logic Controller project</b></p> <ul style="list-style-type: none"> <li>■ Phase II of PLC initiative is geared at proactively replacing the oldest PLCs units before they fail. The criteria will be to replace standard PLCs that are older than 10 years. The replacement of the PLC devices is important as these devices are reaching the end of their normal life cycle. Also, these are field devices that are typically exposed to environmental extremes such as temperature, moisture and dust. Given the criticality of the water system-related processes controlled by PLCs, it is important to replace these units before they fail.</li> </ul> <p>During the period, the Board appropriated \$1.16 million for Phase II of the Programmable Logic Controller initiative.</p>	<div style="text-align: center;">  <p>Programmable Logic Controllers</p> </div> <div style="text-align: center; margin-top: 200px;">  </div>

**Obtained Board Authorization to implement Phase II of the Energy Management System**

- The Energy Management System (EMS) is a new software application designed to streamline power management and billing. Previously in Phase I, the system was deployed to assist staff in managing power generation at Metropolitan’s 16 hydroelectric plants.

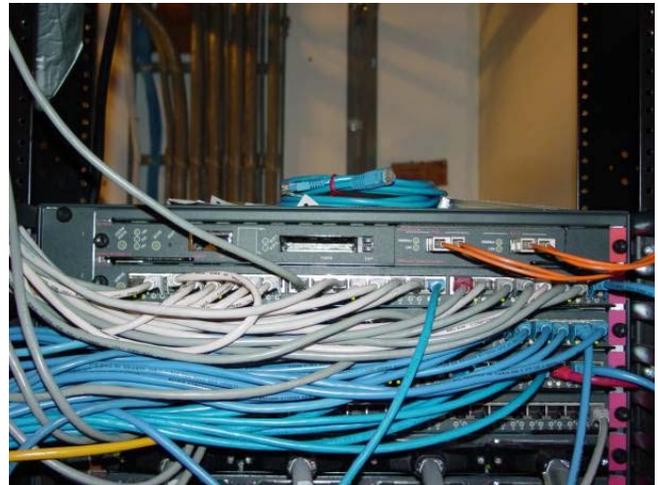
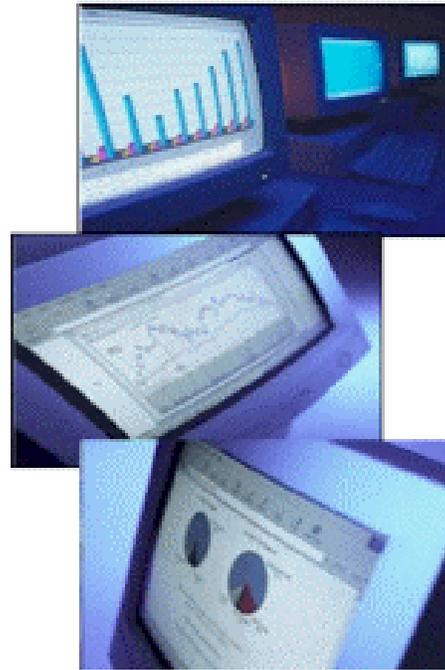
Phase II of the EMS project will expand on the software already implemented in Phase I and provide assistance in managing the power scheduling and purchasing of approximately \$10 to \$20 million in energy required each year to operate the pumps on the CRA. As part of the scope of Phase II, an assessment will be performed to determine the practicality of using EMS to also monitor and manage the approximately \$5 million in energy required to run Metropolitan’s treatment plants.

During the period, the Board appropriated \$963,000 to implement Phase II of the Energy Management System.

**Obtained Board Authorization to Implement Phase I of the Network Upgrade**

- Phase I of the IT Network Upgrade is a part of a comprehensive effort to ensure continued reliability of the Information Technology infrastructure used to run core business applications.

The objective of Phase I of the IT Network Upgrade project is to increase the capacity of Metropolitan’s local area network and to replace end-of-life network equipment at the field facilities and Headquarters. This equipment controls core business applications such as Computer Assisted Design, Geographical Information System, Oracle financials, time keeping and Peoplesoft human resources/payroll. The existing network equipment was put into operation at the field sites and Headquarters in 1998. Industry best practices and benchmarks for these types of devices indicate they have a useful service life of approximately five years.



Networking Equipment

During the period, the Board appropriated \$3.34 million to complete Phase I of the IT Network Upgrade project.

**Completed monitor replacement initiative at Union Station Headquarters and major facilities for Metropolitan’s regular staff**

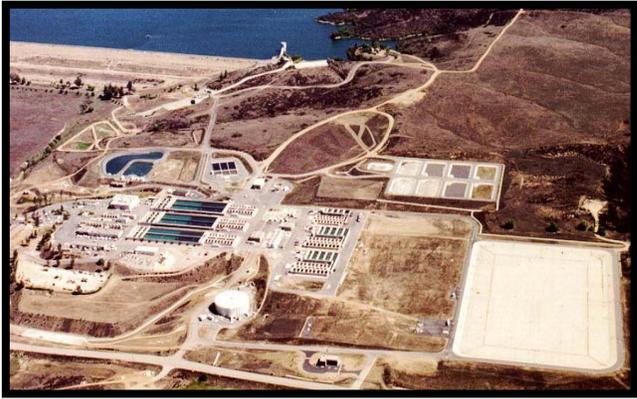
- The objective of this project was to proactively replace outdated monitors before they fail, resulting in employee downtime. Metropolitan launched this initiative to replace outdated CRT-style computer monitors with energy efficient flat panel models. As part of this initiative, all primary monitors at Union Station and all field site offices were replaced. Most of the monitors were over ten years old and were due for replacement consistent with industry standards and Metropolitan’s normal replacement cycle.

During the period, the monitor replacement initiative was completed. Old tube style monitors that served as the primary display unit for staff located at all major Metropolitan facilities have now been replaced.

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.



Flat Panel Monitor

<p align="center"><b>Improved Water Quality:</b></p>	<p align="center"><b>Through 3<sup>rd</sup> Quarter</b>  <b>Budget: \$139.2 K    Expended: \$ 127.4 K</b></p>
<p><b>Key accomplishments included:</b></p> <p><b>Skinner Treatment Plant</b></p> <ul style="list-style-type: none"> <li>■ The Skinner Oxidation Retrofit Program (ORP) is a large capital program to add ozonation to the Skinner Treatment Plant. A major component of this program includes design, programming, and installation of hardware and software to control the ozone process.</li> </ul> <p>During this period, the design of the ORP interface between field instrumentation and the SCADA system was completed.</p> <ul style="list-style-type: none"> <li>■ As part of the Skinner Expansion No. 4, a new Washwater Reclamation plant is being constructed which will pump reclaimed washwater to the new plant inlet control structure.</li> </ul> <p>During this period, IT staff provided field support for implementation of the SCADA instrumentation interfaces for the new Washwater Reclamation Plant Number 3.</p> <p><b>Diemer and Weymouth Treatment Plants</b></p> <ul style="list-style-type: none"> <li>■ The Diemer and Weymouth Oxidation Retrofit Programs are large capital programs to add ozonation to the treatment plants. A major component of these programs include design, programming, and installation of hardware and software to control the ozone process.</li> </ul> <p>During this period, IT staff continued to support ORP design efforts for the Diemer and Weymouth treatment plants. Major accomplishments included completing review of ORP final design drawings for the Weymouth Treatment Plant.</p> <p>Overall, expenditures in the Improve Water Quality category were within budget. Expenditures are currently on target for the fiscal year.</p>	 <p align="center">Skinner Treatment Plant</p>   <p align="center">Weymouth Treatment Plant</p>

<p align="center"><b>Enhanced Cyber Security:</b></p>	<p align="center"><b>Through 3<sup>rd</sup> Quarter Budget: \$331.3 K    Expended: \$367.1 K</b></p>
<p><b>Key accomplishments included:</b></p> <p><b>Implemented self-service password reset</b></p> <ul style="list-style-type: none"> <li>This project provides Metropolitan computer users with the ability to reset their own passwords for the network and three commonly used applications. This self-service capability significantly reduced the requirement for Metropolitan staff to call into a help desk for assistance in resetting passwords. IT will look at expanding this feature to cover other applications in the future.</li> </ul> <p>The system was deployed to all Metropolitan staff in January 2006.</p> <p><b>Deployed SCADA Operator Authentication</b></p> <ul style="list-style-type: none"> <li>The objective of the project was to implement an easy to use security system that would allow water system operators to access SCADA. A biometric based authentication system was selected and procured for use in all SCADA control rooms. The system is based on thumb and/or fingerprint recognition technology.</li> </ul> <p>During the period the project team completed the project by implementing the new biometric system for SCADA users at the remaining sites.</p>	 <p align="center">Self-service password reset system</p>  <p align="center">SCADA Control Room</p> <div align="center" data-bbox="1003 1486 1308 1612"> </div>

**Hosted SCADA / IT Security Forum**

- Metropolitan worked in conjunction with the Association of California Water Agencies, the California Department of Health Services, Santa Clara Valley Water District, El Dorado Irrigation District and Eastern Municipal Water District to organize and plan a forum concentrating on best practices for providing cyber security for SCADA systems. The initial meeting was held at Metropolitan's headquarters on March 30<sup>th</sup>. Approximately 60 individuals representing water utilities throughout the state of California attended the forum. Very favorable comments were received from attendees. The next meeting is slated to be held in northern California in the fall.



Overall, expenditures in the Enhanced Cyber Security area were above budget. Expenditures are targeted to be slightly above budget for the fiscal year as some incurred costs were planned in the prior fiscal year.

**Productivity / Cost Efficiency:**

**Through 3<sup>rd</sup> Quarter**  
**Budget: \$ 4.64 M      Expended: \$ 1.81 M**

Key accomplishments included:

**Developed easy-to-use mapping and analysis software tools for special purpose applications**

- During the period, the Condition Assessment QuickMap was finalized and implemented for use by Engineering and Water System Operations. The QuickMap provides a geographic view of condition assessment data for the distribution system as surveyed by Engineering Services between July 2004 and December 2004. It provides information about each structure as well as pictures taken during the inspection. It is also used for planning maintenance and rehabilitation work.



- Software vendors recently released new three-dimensional geographic viewing products (e.g., Google Earth). In the light of these developments, the Enterprise Geographic Information System User Committee recommended extending the project schedule to allow time to evaluate these new products for possible use at Metropolitan.

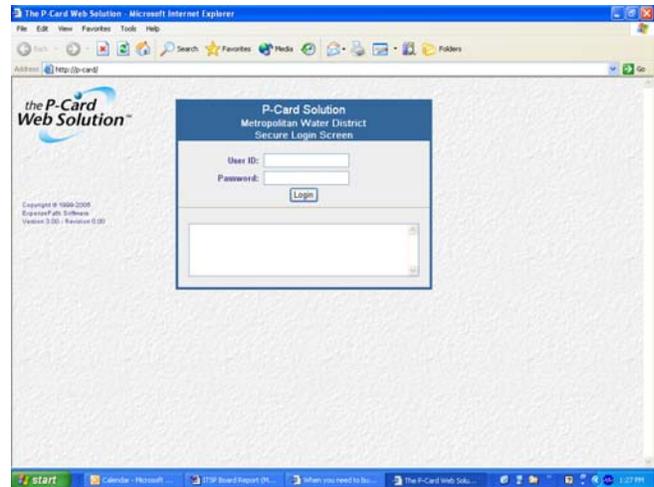
**Upgraded Purchase Card System:**

- During the period, the upgrade of the Purchase Card system was successfully completed and deployed in March 2006. The Purchase Card system provides an efficient, cost effective method of buying and paying for small dollar transactions.

**Established Member Agency IT Forum**

- A new forum was established to exchange ideas and information on IT best practices among Metropolitan and its Member Agencies. The first meeting was held at Metropolitan’s headquarters’ facility on January 26<sup>th</sup>. The forum was very well received and the group decided to continue to meet on a periodic basis.

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.



Board Report (Information Technology Strategic Plan (ITSP) - Quarterly Report for the period ending March 2006)

**Attachment 1**

**Summary of Board actions:** The following table provides a summary of ITSP Board actions from February 2002 through March 2006.

Board Action Date	Appropriation No.	Description	Appropriation	Expenditure (Through March 31, 2006)
October-02	15397	Control System Enhancement Program (CSEP)	\$ 11,000,000	\$ 3,667,283
February-03	15406	Laboratory Information Management System (LIMS)	\$ 1,175,000	\$ 1,015,696
May-03	15408	Maintenance Management System (MMS)	\$ 605,000	\$ 498,968
July-03	15411	Oracle E-Business Suite & Grants Management	\$ 4,038,230	\$ 3,505,959
September-03	15376	Enterprise GIS Project	\$ 4,377,000	\$ 3,557,558
October-03	15411	Peoplesoft Self Service Modules	\$ 1,850,000	\$ 1,492,938
April-04	15376	IT Infrastructure Program	\$ 5,603,000	\$ 4,970,655
July-04	15378	IT Security Program	\$ 925,000	\$ 565,633
February-06	15376	Phase I - IT Network Upgrade	\$ 3,340,000	\$ 57,502
February-06	15397	Energy Management System (EMS) Phase II	\$ 963,000	\$ 4,604
March-06	15397	Programmable Logic Controller (PLC) Phase II	\$ 1,160,000	\$ -
			<b>\$ 35,036,230</b>	<b>\$ 19,336,796</b>

**Details of Board Actions during this period:**

On February 14, 2006, the Board appropriated \$3.34 million to complete Phase 1 of the IT Network Upgrade project as part of the Information Technology Strategic Plan; and authorize a procurement contract with MTM Technologies, Inc., in an amount not to exceed \$1.416 million (Appropriation 15376)

On February 14, 2006, the Board appropriated \$963,000 million to implement Phase II of the Energy Management System and authorize increase of \$670,000 to professional services agreement with Fortech for Metropolitan’s power operation (Appropriation 15397)

On March 14, 2006, the Board appropriated \$1.16 million to complete Phase II of the Programmable Logic Controller project (Appropriation 15397)