



## ● Information Technology Strategic Plan (ITSP) – Quarterly Report for the period ending September 2009

### Summary

---

This report provides a quarterly update on the progress to implement the Information Technology Strategic Plan (ITSP) and on information technology (IT) activities in general for the period ending September 30, 2009. There were a number of important milestones achieved during the period that are summarized in this report. Key milestones for the upcoming quarter ending December 31, 2009 include implementing the Learning Management Module as part of the PeopleSoft HR system; completing testing of the new Inventory Bar-Coding System; and substantially completing the IT Strategic Plan Refresh.

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 currently being updated 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

---

**Attachment 1** provides a summary of Board actions and the appropriations for the ITSP programs through September 30, 2009.

**Attachment 2** provides a summary of the appropriations and expenditures through September 30, 2009.

**Attachment 3** provides a summary list of IT capital projects and their status.




### Detailed Report

---

Below are highlights of progress and major milestones reached on IT projects / initiatives during the period of July 1<sup>st</sup> through September 30, 2009. The projects are categorized by business driver as follows:

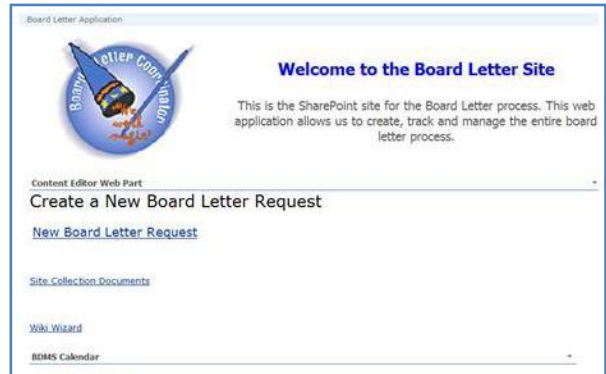


IT STRATEGIC PLAN	
<b>Enhanced Reliability</b>	– Enhance system reliability
<b>Improved Water Quality</b>	– Ensure water quality excellence
<b>Enhanced Cyber Security</b>	– Effectively manage and safeguard assets
<b>Productivity / Cost Efficiency</b>	– Improve process efficiency and effectiveness

<p><b>Productivity / Cost Efficiency:</b></p>	<p><b>Fiscal Year 2009-10</b>  <b>Budget: \$ 0.61 M      Expended: \$ 0.21 M</b></p>
<p><b>Key Accomplishments Included:</b></p> <p><b>Began Rollout of the New Fuel Management System</b></p> <ul style="list-style-type: none"> <li>■ The Fuel Management System will allow Metropolitan to more effectively and efficiently manage fuel inventory. Metropolitan currently tracks fuel usage and fuel inventory information manually. The new system automatically captures fueling data and stores information from the vehicle (e.g., mileage) and the fuel pump (e.g., fuel dispensed), resulting in enhanced productivity while minimizing errors associated with manual data entry.</li> <li>■ To date, installation has been completed at eight of twelve sites. Installation at the four remaining desert sites (Hinds, Eagle, Iron and Gene) is proceeding according to plan. Deployment of the new Fuel Management system is scheduled to be completed in December 2009.</li> </ul> <p><b>Continued IT Strategic Plan Update Effort</b></p> <ul style="list-style-type: none"> <li>■ Metropolitan’s Information Technology Section is in the process of updating its ITSP. The ITSP provides a roadmap to guide the investment and deployment of information technology at Metropolitan. The goal of the plan is to leverage IT investments to increase long-term reliability, while improving Metropolitan’s overall efficiency and effectiveness.</li> <li>■ During the period, a workshop was conducted with the ITSP Steering Committee on the information technology vision and goals, and technology initiatives needed to support Metropolitan’s core mission.</li> <li>■ In September, the Technology Initiatives phase of the ITSP refresh was substantially completed by conducting a gap analysis and assessing needed technology projects and initiatives.</li> </ul> <p><b>Other Key Accomplishments During the Period:</b></p> <ul style="list-style-type: none"> <li>■ During the period, staff conducted training on the new Board Document Management System (BDMS). In preparation for rollout of this new system, training sessions were held to familiarize board letter authors, reviewers and coordinators with the application and how it will be integrated with Metropolitan’s board letter process.</li> </ul>	  

Board Report ()

Expenditures in the Productivity/Cost Efficiency category were lower than planned for the first quarter of fiscal year 2009/10. The fiscal year variance between planned and expended dollars is primarily due to work that has not yet begun for the Ozone Optimization project, as staff researches potential grant funding for this project; and the Material Interface project, which is currently in the planning phase.



**Enhanced Reliability:**

**Fiscal Year 2009-10  
Budget: \$ 4.13 M    Expended: \$ 1.68 M**

**Key Accomplishments Included:**

**Completed Installation in the Main Board Room**

- The Union Station Headquarters Technology Upgrade project will upgrade ten-year-old audio, video and IT-related equipment in the main board room and committee rooms in Metropolitan’s headquarters building at Union Station.
- During the period, equipment installation in the main board room was completed. Key upgrades included replacing all of the room audio, video, computer, voting and video production systems. New touch-panel displays were installed at each director position for voting and viewing of video and presentation slides. New cameras, projectors, audio digital signal processors, microphones and speakers were installed in addition to new control systems for the audio/video operators.
- Upgrades to committee rooms 2-456 and 2-145 were completed in the prior reporting period. Remaining tasks for the project include completing the installation within committee room 1-102, and acoustic adjustments/fine tuning in the main board room in preparation for final acceptance. The Union Station Headquarters Technology Upgrade project is scheduled to be substantially complete in December 2009.



**Completed Phase Two of the New Water Billing System Project**

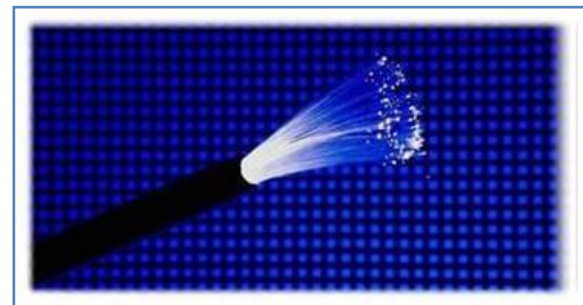
- Metropolitan upgraded its water billing system which was approximately twelve years old. The previous Water Information System (WINS) had become labor intensive to administer and very

complex, as the original system was designed to handle the previous bundled rate structure. WINS processes, stores and reports water transactions, incentive payments, customer usage, revenue data and storage account balances to produce invoices for member agencies and to compute incentive payments for the Local Resources Program and Conservation Credits Program. This project upgraded WINS, which ensures timely, accurate, and auditable invoicing and accounting of all billing system transactions.

- During the period, Phase Two of the project was successfully completed, providing member agencies with the ability to enter certifications online over the internet. Staff will continue to work with the member agencies to provide support and training to familiarize users with the new available features.

**Continued Work on Phase II (Wide Area Network) of the IT Network Upgrade -- 3 of 4 sub-projects completed to date**

- The scope of the IT Network Phase II project is to upgrade Metropolitan's wide area network (WAN) to strengthen its overall reliability by eliminating potential single points of failure, improving electrical grounding of communication sites and increasing capacity to handle growth in traffic. To date, three out of the four sub-projects have been completed.
  - **Completed Fiber-Optic and Cabling Upgrade:** This sub-project enhanced network reliability in the desert region by installing new fiber optic cables at Eagle Mountain, Iron Mountain, and Gene Camp to replace aging wireless communication equipment.
  - **Completed Communication Facility (Grounding / Battery) Upgrade:** This sub-project increased communication reliability by conducting grounding assessments, replacing battery back-up equipment and upgrading the grounding systems at key communication sites.
  - **Completed WAN Monitoring System:** This sub-project deployed a software tool that allows staff to remotely monitor and troubleshoot problems on the WAN, thus providing increased level of network reliability.



- **Continued WAN Microwave Upgrade:**

This sub-project is geared to provide alternate communication paths to/from selected Metropolitan sites to improve reliability by eliminating potential single points of failure.

- During the period, staff continued to work with the contracting team on two remaining procurements associated with upgrading the WAN microwave system. The target completion for this project has been revised to the fourth quarter of fiscal year 2009/10 to allow sufficient time to complete the public works procurement process.

**Other Key Accomplishments During the Period:**

**Conducted IT Disaster Recovery SCADA Exercise**

- As part of an ongoing effort to refine Metropolitan’s ability to recover critical IT systems in the event of a disaster, staff conducted an exercise involving the Supervisory Control and Data Acquisition (SCADA) system. The exercise simulated the failure of SCADA servers at a treatment plant. The Oxidation Demonstration Plant (ODP) was selected for the test because it is a research facility similar to Metropolitan’s treatment plants and could be used without affecting day-to-day water treatment operations. Staff exercised the disaster recovery procedures to bring SCADA back online at the ODP facility by using backup servers located at Metropolitan’s disaster recovery facility.
- The exercise was successfully completed and achieved the following objectives:
  - Tested recovery procedures
  - Validated recovery capabilities
  - Provided on-going IT staff training
- The exercise was carefully planned and coordinated, resulting in no interruptions to the operation of the production SCADA system.

**Intake Pumping Plant (Pump #1) Automation**

- IT staff supported the SCADA portion of the pump automation testing and made enhancements to the SCADA operator screens. When completed, WSO operators will be able to remotely start up and shut down the Pump #1 via the SCADA system.

Expenditures in the Enhanced Reliability category were lower than planned for the first quarter of fiscal year 2009/10. The variance in this category stems



Board Report ( )

from major procurement activities associated with the Electronic Discovery System, Computer Aided Design (CAD) Management and the IT Network Phase II project. The Electronic Discovery System and the CAD Management System project were authorized by the board in September. As a result, planned expenditures for software procurements associated with these two projects will occur in the second quarter of this fiscal year. The schedule for Phase II of the IT Network Upgrade was extended to allow sufficient time to complete the public works procurement. The variance in this category is expected to decrease as activities and expenditures on the new projects increase during the second and third quarters of this fiscal year.

<b>Enhanced Cyber Security:</b>	<b>Fiscal Year 2009-10</b> <b>Budget: \$ 0.41 M      Expended: \$ 0.09 M</b>
---------------------------------	---

**Key Accomplishments Included:**

**Continued Phase II of the Information Security Remediation Initiative**

- Staff continued efforts to enhance and upgrade Metropolitan’s IT security infrastructure as part of Phase II of the Information Security Remediation initiative. In this project, proactive measures were implemented to better secure Metropolitan’s network environment against emerging cyber threats.
- To date, staff has completed six initiatives including:
  - Physical migration of six SCADA - related applications to better segregate and secure the SCADA network.
  - Deployment of Metropolitan’s wireless network and associated security infrastructure.
  - Deployment of a Security Information Management system to provide a dashboard summarizing security monitoring data, and highlighting any suspicious activity.
  - Deployment of a security vulnerability assessment tool.
  - Deployment of a Wireless Local Area Network (LAN) security analyzer.
  - Deployment of a new database security



## Board Report ( )

monitoring and assessment system to better safeguard the information stored in Metropolitan's production databases.


- During the period, staff completed the design phase for implementation of a new security related tool (Microsoft's System Center). Among other capabilities, the new system will facilitate software distribution to Metropolitan's key production servers and users' workstations to ensure that they have the latest critical security software patches to protect against cyber threats. In addition, staff began preliminary design on security account provisioning to automate and assist security staff with managing access to key applications (e.g. Oracle Financials, PeopleSoft, Human Resources, time keeping) for Metropolitan employees.
- The remaining initiatives involve conducting a pilot for laptop disk encryption; implementing additional security protection for key production Microsoft servers; and other measures to further enhance and strengthen Metropolitan's cyber security.

### **Other Key Accomplishments During the Period:**

- Staff continued to monitor and participate in national efforts aimed at enhancing security capabilities for water utilities to ensure that Metropolitan and others meet or exceed national standards. During the period, Metropolitan hosted a Water/Wastewater Cyber Security Workshop sponsored by the Department of Homeland Security. The workshop was designed to improve the knowledge, skills and abilities of water/waste water utility employees who are responsible for control systems (SCADA) security. Department of Homeland Security's Control Systems Security Program representatives from Idaho National Labs provided the workshop training and discussed security best practices for use by Water Sector asset owners and operators. The workshop was attended by approximately 65 individuals from more than 30 utilities, law enforcement, national labs and the California Department of Public Health.
- As part of the ongoing security awareness effort, staff published monthly cyber security tips on Metropolitan's internal website.
- In addition, staff continued to provide IT security orientation for all Metropolitan new hires.



Board Report ()

<p>Expenditures in the Enhanced Cyber Security category were lower than planned for the first quarter of fiscal year 2009/10. The variance relates to time extensions for two security initiatives that required additional analysis (i.e., laptop encryption and implementation of Microsoft System Center). Expenditures (as a percent of budget) are expected to increase in the second quarter, as a result of security initiatives currently underway.</p>	
<p><b>Improved Water Quality:</b></p>	<p><b>Fiscal Year 2009-10</b>  <b>Budget: \$ 0.08 M      Expended: \$ 0.00 M</b></p>
<p><b>Key Accomplishments Included:</b></p> <p><b>Skinner Oxidation Retrofit Program</b></p> <ul style="list-style-type: none"> <li>■ During the period, IT staff continued to support the startup phase at the Skinner plant.</li> </ul> <p><b>Diemer Oxidation Retrofit Program</b></p> <ul style="list-style-type: none"> <li>■ During the period, staff reviewed contractor submittals for compliance with Metropolitan’s specifications.</li> </ul> <p><b>Other Key Accomplishments During the Period:</b></p> <ul style="list-style-type: none"> <li>■ <b>Weymouth Power Systems Upgrade</b> – During the period, staff continued SCADA design support and review of design documents and addenda to the contract drawings.</li> <li>■ During the period, IT staff provided control system design review and technical support, and participated on a number of water quality related Engineering projects that included:             <ul style="list-style-type: none"> <li>■ Weymouth Junction Structure Seismic Upgrade</li> <li>■ Diemer Fire and Potable Water Pump Station</li> <li>■ Skinner East Bypass Screen Project</li> <li>■ Weymouth Polymer and Alum tank Farm project</li> </ul> </li> </ul> <p>There were no expenditures on IT capital projects in the “Improve Water Quality” category during the first quarter of fiscal year 2009/10. This is because the single water quality-related IT project for fiscal year 2009/10 (Water Quality Monitoring and Rapid Event Detection System) did not begin until authorization was received by the board in December 2009. It should also be noted that IT expenditures associated with other capital projects (e.g., oxidation retrofit) are reported as part of those initiatives and therefore are not reflected in this report.</p>	



Board Report ()

**Attachment 1**

**Summary of Board Actions:**

The following table provides a sequential listing of ITSP Board appropriations through September 30, 2009:

Board Action Date	Appropriation No.	Description	Amount Appropriated
September-01	15376	Telecommunication Infrastructure Program	\$ 1,334,000
November-01	15378	IT Security Related Improvements	\$ 879,000
September-02	15378	Peoplesoft Upgrade	\$ 472,000
October-02	15397	Control System Enhancement Program (CSEP)	\$ 11,000,000
February-03	15406	Laboratory Information Management System (LIMS)	\$ 1,175,000
May-03	15408	Maintenance Management System (MMS) Upgrade	\$ 605,000
July-03	15411	Oracle E-Business Suite & Grants Management	\$ 4,038,230
September-03	15376	Enterprise GIS Project	\$ 4,377,000
October-03	15411	Peoplesoft Self Service Modules	\$ 1,850,000
April-04	15376	IT Infrastructure Program	\$ 5,603,000
July-04	15378	IT Security Program	\$ 925,000
February-06	15376	IT Network Upgrade - Phase I	\$ 3,340,000
February-06	15397	Energy Management System (EMS) - Phase II	\$ 963,000
March-06	15397	Programmable Logic Controller (PLC) - Phase II	\$ 1,160,000
July-06	15411	Water Billing System Upgrade	\$ 3,480,000
July-06	15376	Two Way Radio - Phase I	\$ 557,000
October-06	15411	Integrated Budget Management System	\$ 4,440,000
October-06	15378	IT Security Remediation Initiative	\$ 2,160,000
November-06	15376	IT Network Upgrade - Phase II	\$ 3,950,000
March-07	15411	Human Resources Improvement - Phase II	\$ 2,500,000
March-07	15376	Union Station Headquarters Technology Upgrade	\$ 1,910,000
April-07	15397	Phase II of the Automatic Meter Reading Upgrade Project	\$ 4,410,000
June-07	15411	Transportation Management System	\$ 846,000
June-07	15376	Phase One of the Information Technology Infrastructure Upgrade	\$ 1,590,000
August-07	15411	Inventory Bar-Coding System	\$ 1,235,000
September-07	15376	IT Disaster Recovery Facility Upgrades	\$ 1,010,000
February-08	15376	Communication Infrastructure Reliability Upgrade	\$ 10,200,000
July-09	15376	Phase Two of the Two-Way Radio System Upgrade	\$ 390,000
September-09	15411	Computer-Aided Design Management System	\$ 760,000
September-09	15411	Electronic Discovery Management System	\$ 2,370,000
			<b>\$ 79,529,230</b>

Details of Board Items during this period:

- On July 14, 2009, the Board appropriated \$390,000; and authorized Phase Two of the Two-Way Radio System Upgrade (Approp. 15376)
- On September 15, 2009, the Board appropriated \$760,000; and authorized: (1) the Computer-Aided Design Management System; and (2) agreement with Bentley Systems, Inc. in an amount not to exceed \$320,000 (Approp. 15411)
- On September 15, 2009, the Board appropriated \$2.37 million and authorized agreement with Autonomy in an amount not to exceed \$1.67 million to procure and implement an Electronic Discovery Management System (Approp. 15411)
- In September, 2009, staff provided quarterly updates on the Information Technology Strategic Plan (ITSP), and information technology (IT) activities in general, for the period ending June 30, 2009.

Board Report ()

**Attachment 2**

**Summary of Board Actions:**

The following table provides a summary of ITSP Board appropriations and expenditures through September 30, 2009:

<b>Appropriation No.</b>	<b>Program Description</b>	<b>Total Amount Appropriated</b>	<b>Expenditures (Through September 30, 2009)</b>
15397	Control System Enhancement Program (CSEP)	\$ 17,533,000	\$ 15,087,353
15406	Laboratory Information Management System (LIMS) Program	\$ 1,175,000	\$ 1,013,956
15408	Maintenance Management System (MMS) Upgrade Program	\$ 605,000	\$ 493,798
15411	Business, Finance & Human Resource (BF&HR) Program	\$ 21,519,230	\$ 16,322,013
15376	Information Technology Infrastructure Program	\$ 34,261,000	\$ 21,279,217
15378	Information Technology Security Program	\$ 4,436,000	\$ 3,790,668
		<b>\$ 79,529,230</b>	<b>\$ 57,987,005</b>

# Board Report ()

## Attachment 3

### Summary list of IT capital projects:

<b>Enhanced Reliability</b>	
Control System Data Storage and Reporting	Completed
Email System Upgrade	Completed
Energy Management System (Phase I)	Completed
IT Business Systems / Data Recovery	Completed
Maintenance Management System Software Version Upgrade	Completed
Peoplesoft Software Version Upgrade (from 7.5 to 8.3)	Completed
Peoplesoft Software Version Upgrade (v8.9) as part of HMRS Phase II	Completed
Programmable Logic Controller Standardization (Phase 1)	Completed
Telecommunication Infrastructure Upgrade Program	Completed
Phonemail Replacement	Completed
Field Emergency Generator Upgrade	Completed
IT Network Upgrade (Phase I)	Completed
Energy Management System (Phase II)	Completed
Programmable Logic Controller - Lifecycle Replacement (Phase II)	Completed
Two Way Radio Upgrade (Phase I)	Completed
Control Systems Communications Upgrade	Completed
SMART Operations - formerly Real Time Operating System (RTOS)	Completed
Communication Infrastructure Reliability Upgrade	Completed
Control System Enhancement Program Implementation	In Progress
Automatic Meter Reading / Remote Terminal Unit Upgrade	In Progress
Employee Relations Module and Learning Management Module Implementation	In Progress
Inventory Bar-Coding System	In Progress
IT Disaster Recovery Facility Upgrades	In Progress
IT Network Upgrade (Phase II)	In Progress
Exchange Upgrade	In Progress
Union Station Headquarters Technology Upgrade	In Progress
Water Billing System Upgrade	In Progress
Phase Two - Two Way Radio System Upgrade	In Progress
Computer-Aided Design Management System	In Progress
Electronic Discovery Management System	In Progress
Colorado River Aqueduct (CRA) Control Integration	On Hold (*1)
Enhanced Distribution System Control	On Hold (*1)
<b>Improved Water Quality</b>	
Laboratory Information Management System Upgrade	Completed
Oxidation Demonstration Plant (ODP) Control System Replacement	Completed
Plant Influent Flow Metering Upgrade	Completed
<b>Enhanced Cyber Security</b>	
Information Security Administration Software	Completed
Information Security Assessment/Remediation (Phase I)	Completed
IT Security Monitoring Improvement	Completed
SCADA Operator Authentication	Completed
SCADA Security Improvements	Completed
Information Security Assessment/Remediation (Phase II)	In Progress
<b>Productivity / Cost Efficiency</b>	
E-Business Suite	Completed
Enterprise Geographic Information System (Phase I)	Completed
Human Resources (Peoplesoft) Improvement Plan (Phase I)	Completed
Project Accounting and Grants Management	Completed
Integrated Budgeting Management System	Completed
Transportation Management System	Completed
IT Testing Tools	In Progress
Fuel Management System	In Progress
IT Infrastructure Upgrade (Phase I)	In Progress
Mobile Technology and Materials Interface	In Progress

**Footnote\***The Enhanced Distribution System Control and Colorado River Aqueduct (CRA) Control Integration projects are on-hold pending completion of predecessor projects.