



## ● Information Technology Strategic Plan (ITSP) - Quarterly Report for the period ending December 2008

### 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 December 31, 2008. There were a number of important milestones achieved during the period that are summarized in this report. Key milestones for the upcoming quarter ending March 31, 2009 include completing the installation of Fuel Management System, finishing the Integrated Budget Management System effort, and completing the upgrade of remaining field remote terminal units for the Automated Meter Reading project.

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 and the appropriations for the ITSP programs through December 31, 2008.

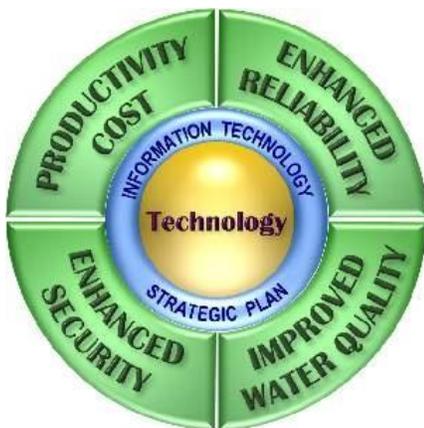
[Attachment 2](#) provides a summary of the appropriations and expenditures through December 31, 2008.

[Attachment 3](#) provides a summary list of IT capital projects and their status.

### Detailed Report

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Below are highlights of progress and major milestones reached for IT projects / initiatives during the period of October 1<sup>st</sup> through December 31, 2008. The projects are categorized by business driver as follows:



#### IT STRATEGIC PLAN

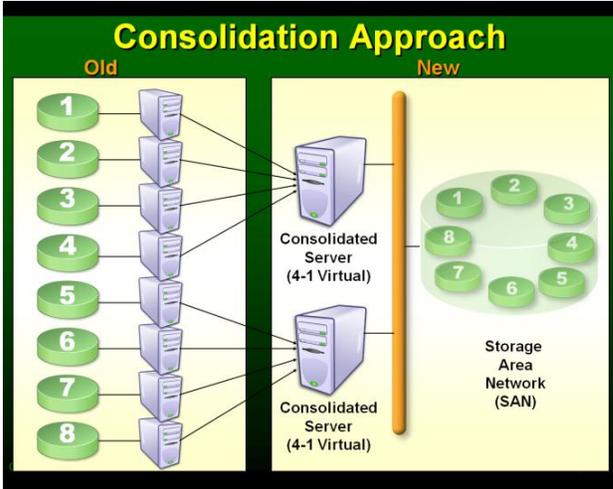
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**Enhanced Reliability** – Enhance system reliability

**Improved Water Quality** – Ensure water quality excellence

**Enhanced Cyber Security** – Effectively manage and safeguard assets

**Productivity / Cost Efficiency** – Improve process efficiency and effectiveness

<p><b>Productivity / Cost Efficiency:</b></p>	<p><b>Fiscal Year 2008-09 to date</b>  <b>Budget: \$ 1.62 M      Expended: \$ 1.28 M</b></p>
<p><b>Key accomplishments included:</b></p> <p><b>Use of Videoconferencing Systems in Lieu of Travel</b></p> <ul style="list-style-type: none"> <li>As an on-going effort to increase productivity and reduce costs, staff has been challenged to use of videoconferencing where practicable instead of traveling to meetings. A formal tracking method was developed to verify the anticipated savings as a result of reduced travel cost by using videoconferencing. Fiscal year to date, the savings are approximately \$304,000 as a result of staff using Metropolitan’s videoconferencing systems installed at primary Metropolitan sites.</li> <li>Staff will continue to look for ways to reduce costs through technology and to keep the Board informed of IT cost saving initiatives.</li> </ul> <p><b>Continued Deployment of Servers for Phase One of the Information Technology Infrastructure Upgrade</b></p> <ul style="list-style-type: none"> <li>Phase One of the Information Technology Infrastructure Upgrade will improve reliability and is estimated to avoid \$2.6 million future capital expenditures over five years by implementing special “virtualization” software that allows one physical server to act as many separate “virtual servers.” This will enable Metropolitan to significantly reduce the forecasted number of servers to be purchased over the next five years.</li> <li>During the period, staff continued the creation and deployment of the virtual servers. Twenty four virtual servers were created to date translating to a cost avoidance of approximately \$360,000.</li> <li>Staff will continue the server and storage consolidation efforts. The target is to complete this consolidation effort is June 2009.</li> </ul>	  

**Began installation of the Fuel Management System**

- 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 Fuel Management System will automate the capture of fueling data by eliminating the manual entry of fuel tickets, tracking of fuel usage, and inventory records resulting in an estimated productivity savings of approximately \$180,000 annually with a payback period of approximately six years, once the system is fully implemented.
- In the prior period, staff successfully completed a pilot of the new fuel management system at the Weymouth facility. To date, staff has installed the new fuel management system at seven of the twelve sites (Weymouth, Diemer, Soto Street, Sunset, Jensen, Mills and Skinner).
- Installation is scheduled to be completed in March 2009.

**Continued Phased Implementation Tasks for the Integrated Budget Management System**

- The Integrated Budget Management System (IBMS) provides a single integrated system by replacing five separate, existing budgeting systems. The new IBMS will improve the budgeting process by ensuring timely, complete, and consistent budget development, analysis, and reporting to budget and financial staff, budget coordinators, management and staff at all levels of the organization.
- Staff anticipates that the payback period for IBMS will be approximately five years through increased staff productivity by eliminating redundant data input, the need to perform manual calculations to summarize data in accordance with the organizational hierarchy, and improved efficiency in preparing and publishing budget documents. In the prior period, IBMS core functions were made available for use as part of the fiscal year 2009/10 budgeting process. The system is currently being used by budget coordinators throughout Metropolitan to develop both O&M and capital



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<p>budgets.</p> <ul style="list-style-type: none"> <li>Staff continues to work on remaining improvements, remaining tasks, and scheduling of additional training for the capital budgeting portion of the system. The current target completion date for the IBMS project is March 2009.</li> </ul> <p>Expenditures in the Productivity/Cost Efficiency category were lower than forecasted for the second quarter of fiscal year 2008/09. It is projected that expenditures in this category will remain under budget for the fiscal year as the approach for the Video Conference System Upgrade was reassessed and scaled down significantly. In addition, other projects in this category have been delayed as internal resources were reassigned to higher priority projects.</p>	
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<p><b>Enhanced Reliability:</b></p>	<p><b>Fiscal Year 2008-09 to date</b>  <b>Budget: \$ 7.20 M    Expended: \$ 4.52 M</b></p>
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<p><b>Key accomplishments included:</b></p> <p><b>Completed Phase II of the Programmable Logic Controller Project</b></p> <ul style="list-style-type: none"> <li>Programmable Logic Controllers (PLCs) are industrial process control devices, typically tied into Metropolitan’s SCADA (Supervisory Control and Data Acquisition) system. Metropolitan has approximately 130 PLCs to control and monitor a variety of important water system related processes such as filtration, chemical feed, and washwater reclamation. These devices are typically exposed to environmental extremes such as temperature, moisture, and dust. This initiative involves replacement of PLCs that are over 10 years old with new hardware and improved control logic.</li> <li>During this period, IT completed Phase II of the multi-year effort which included replacement of 20 PLCs at Jensen, Weymouth, Mills and Diemer</li> </ul>	 
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facilities. IT intends to proactively replace PLCs as they reach end-of-life in the future.

### **Executed Contract for the Union Station Headquarters Technology Upgrade Project**

- The Union Station Headquarters Technology Upgrade project will upgrade audio, video and information technology-related equipment in the main Board room and committee rooms in Metropolitan's headquarter building at Union Station.
- During the period, Metropolitan executed a contract with Cibola Systems for upgrading the Board room and three committee rooms. The team initiated detailed planning and final design activities.
- Upcoming milestones include: installation of a mockup of the new Director stations in the Board room; and a demonstration of the new web streaming/video archiving system to the E&CP committee scheduled for the third quarter of fiscal year 2008/09.



### **Continued Integration Testing for the Water Billing System Upgrade**

- Metropolitan is upgrading its water billing system which is approximately 12 years old. The existing Water Information System (WINS) has become labor intensive to administer and very complex as the original system was design to handle the previous bundled rate structure.
- This project will upgrade Metropolitan's Water Information System (WINS) and ensure timely, accurate and auditable invoicing and accounting of all billing system transactions critical to Metropolitan's core business functions. 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.
- During the period, staff continued WINS integration testing, addressing any issues as they arose. Upon successful completion of integration testing, formal parallel testing will be performed where results from the current and upgraded



systems are compared to ensure billing accuracy and acceptable system performance.

- The initial deployment (Phase I) for the WINS Billing System Upgrade is scheduled for the fourth quarter of the current fiscal year. A subsequent deployment (Phase II) will provide member agencies with the ability to enter certifications on-line over the internet. Phase II is slated to be completed by the first quarter of fiscal year 2009/10.

**Continued Main Deployment Phase for the Automatic Meter Reading (AMR) Project**

- This project involves upgrading the AMR meter sites that support Metropolitan’s billing and monitoring of water delivery through service connections to member agencies. The current AMR system is based on outdated technology that is no longer supported by the telecommunications industry and must be replaced to continue functioning properly. There are approximately 480 water meters located throughout Metropolitan’s distribution system. Prior to the current main deployment phase, a comprehensive pilot phase was conducted to ensure a successful deployment.
- The AMR remote terminal units (RTUs) are computers installed at the meter sites which are used to transmit water meter readings. Through December 2008, staff successfully replaced approximately 312 units (65%) of the 480 RTUs located throughout Metropolitan’s distribution system. Once installation and testing are completed, the upgraded RTUs are immediately put into service, replacing the corresponding old RTUs and becoming an active part of the system. Staff continues to replace the outdated RTU’s. The AMR project is scheduled to be completed in the second half of fiscal year 2008/09.

**Other key accomplishments during the period:**

- In November 2008, IT participated in Metropolitan’s district-wide functional exercise. This exercise was part of the statewide Golden Guardian 2008 emergency exercise sponsored by the California Office of Homeland Security. The exercise focused on emergency communications procedures, problem-solving processes, and Incident Command System (ICS) roles and responsibilities. As part of the exercise, staff



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<p>simulated emergency procedures in the transfer of key IT services/applications to Metropolitan’s disaster recovery facility.</p> <p>Expenditures in the Enhanced Reliability category were lower than projected for the second quarter of fiscal year 2008/09. A variance in this category is expected to remain as projects were deferred to focus available resources on the highest priority efforts. These projects include Preliminary Design for DVL Control System Upgrade/Replacement, Electronic System Register, Water Planning Application, Water Treatment Process Optimization, and CAD Drawing Management System.</p>	
<p><b>Enhanced Cyber Security:</b></p>	<p><b>Fiscal Year 2008-09 to date</b>  <b>Budget: \$ 0.42 M      Expended: \$ 0.27 M</b></p>
<p><b>Key accomplishments included:</b></p> <p><b>Continued Phase II of the Information Security Remediation Initiative</b></p> <ul style="list-style-type: none"> <li>■ Staff continued its 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.</li> <li>■ To date, staff has completed four components including: <ul style="list-style-type: none"> <li>■ Physical migration of six SCADA-related applications to a separate secure network.</li> <li>■ Deployment of Metropolitan’s wireless network and associated security infrastructure.</li> <li>■ Deployment of a Security Information Management system to provide a dashboard summarizing security monitoring data, and highlighting any suspicious activity.</li> <li>■ Deployment of a security vulnerability assessment tool.</li> </ul> </li> <li>■ The remaining initiatives involve installing a new monitoring and scanning security system for Metropolitan’s database environments; evaluating/implementing encryption as appropriate for data on laptops and for email; implementing additional security protection for key servers; and other measures to strengthen Metropolitan’s cyber security.</li> </ul>	 

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<ul style="list-style-type: none"> <li>■ During the reporting period, staff completed testing and began implementing a database security system. This system will provide vulnerability assessment and real-time network traffic monitoring for critical databases.</li> <li>■ Staff acquired a wireless Local-Area-Network (LAN) security analyzer. The analyzer is used to monitor, troubleshoot and detect unauthorized wireless access points on the network.</li> </ul> <p><b>Other key accomplishments during the period:</b></p> <ul style="list-style-type: none"> <li>■ As part of the on-going security awareness effort, staff published monthly cyber security tips on Metropolitan’s internal website and continued to provide IT security orientation for all Metropolitan new hires.</li> </ul> <p>Expenditures in the Enhanced Cyber Security category are slightly below budget for the second quarter of fiscal year 2007/08. The forecast for this category is expected to be on target for the fiscal year.</p>	 <p style="text-align: center;"><b>November 2008 Information Security Tip</b></p>
<p><b>Improved Water Quality:</b></p>	<p><b>Fiscal Year 2008-09 to date</b>  <b>Budget: \$ 0.01 M      Expended: \$ 0.04 M</b></p>
<p><b>Key accomplishments included:</b></p> <p><b>Continued Programming for the Plant Inlet Flow Metering Upgrade Project</b></p> <ul style="list-style-type: none"> <li>■ The purpose of the Plant Inlet Flow Metering Upgrade project is to ensure WSO operators and the SCADA system receives accurate inlet flow readings. Accurate inlet flow readings are critical for determining proper chemical feed dosages. This project involves modifying SCADA Automated Process Control (APC) programs to calculate plant inlet flow using multiple methods to help ensure the inlet flow figures provided to the WSO treatment plant operators are correct, even when one of the meters is not providing accurate readings.</li> <li>■ To date, redundant flow metering calculations have been rolled-out for the Mills, Weymouth and Jensen Treatment Plants. During the period, programming for Skinner was substantially completed and testing was initiated, while</li> </ul>	

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development for Diemer is currently underway and should be completed in February. This project is scheduled to be completed in the third quarter of fiscal year 2008/09.

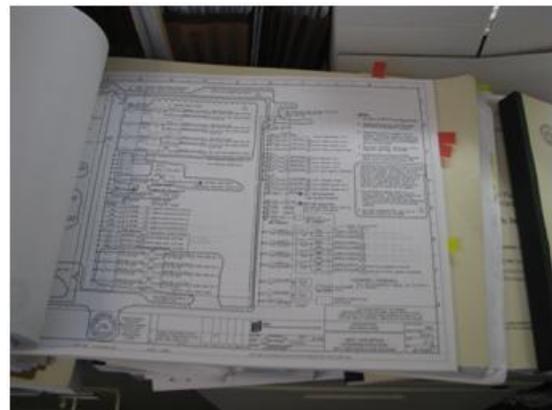
**Skinner Oxidation Retrofit Program**

- During the period, IT staff continued support of the construction effort at the Skinner plant by responding to technical questions and requests for information; and ensured compliance with Metropolitan specifications related to the design, programming, and installation of hardware and software to control the ozone process at the Skinner facility.

**Other key accomplishments during the period:**

- IT continued to provide SCADA-related support such as design reviews and programming for a variety of water quality programs and projects at Metropolitan. Some of the activities during the period include:
  - **Lake Skinner East Bypass Screen Structure Rehabilitation**  
Staff reviewed control design submittals for compliance with Metropolitan’s specification.
  - **Interim Hypochlorite Feed at Lake Mathews**  
IT staff worked with field staff and operators to test the SCADA system prior to project completion in December 2008.
  - **Weymouth Inlet Conduit Relocation and Rapid Mix System**  
Staff reviewed 90% final drawings and provided comments to project designers for implementation during the design review process.
  - **Weymouth Power System Upgrade**  
Staff reviewed 90% final drawings and provided comments to project designers for implementation during the design review process.

Overall, expenditures in the Improved Water Quality category were higher than planned for the second quarter of fiscal year 2008/09. A variance is expected to remain for the fiscal year based on progress and projected expenditures for the Plant Inlet Flow Metering project.



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**Attachment 1**

**Summary of Board Actions:**

The following table provides a sequential listing of ITSP Board appropriations through December 31, 2008:

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
			<b>\$ 76,009,230</b>

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

- On December 8, 2008, staff provided quarterly updates on the Information Technology Strategic Plan (ITSP), and information technology (IT) activities in general, for the period ending September 30, 2008.

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**Attachment 2**

**Summary of Board Actions:**

The following table provides a summary of ITSP Board appropriations and expenditures through December 31, 2008:

<b>Appropriation No.</b>	<b>Program Description</b>	<b>Total Amount Appropriated</b>	<b>Expenditures (Through December 31, 2008)</b>
15397	Control System Enhancement Program (CSEP)	\$ 17,533,000	\$ 12,732,705
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	\$ 18,389,230	\$ 14,453,769
15376	Information Technology Infrastructure Program	\$ 33,871,000	\$ 18,328,686
15378	Information Technology Security Program	\$ 4,436,000	\$ 3,396,754
		<b>\$ 76,009,230</b>	<b>\$ 50,419,667</b>

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**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 System Enhancement Program Implementation	In Progress
Automatic Meter Reading / Remote Terminal Unit Upgrade	In Progress
Control Systems Communications 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
SMART Operations - formerly Real Time Operating System (RTOS)	In Progress
Communication Infrastructure Reliability Upgrade	In Progress
Union Station Headquarters Technology Upgrade	In Progress
Water Billing System Upgrade	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	In Progress
<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
Transportation Management System	In Progress
Fuel Management System	In Progress
Integrated Budgeting Management System	In Progress
IT Infrastructure Upgrade (Phase I)	In Progress
IT Testing Tools	In Progress
Mobile Technology and Materials Interface	In Progress

Footnote\*

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