



- **Information Technology Strategic Plan (ITSP) – Quarterly Report for the period ending March 2011**

## Summary

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This report provides a quarterly update on progress to implement Metropolitan's Information Technology Strategic Plan (ITSP) and on information technology (IT) activities in general for the period ending March 31, 2011. There were a number of important milestones achieved during the period that are summarized in this report. Key milestones for the upcoming quarter ending June 30, 2011 include completing the IT Infrastructure Upgrade project and beginning deployment of the new Water Quality Monitoring and Rapid Event Detection System.

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 was recently updated based on 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.

## Detailed Report

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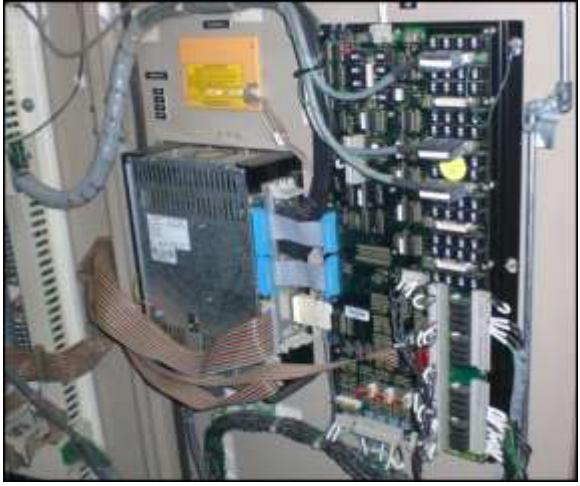
Attached are highlights of progress and major milestones reached on IT projects / initiatives during the period of January 1 through March 31, 2011. The projects are categorized by business driver as follows:



### IT STRATEGIC PLAN

- 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

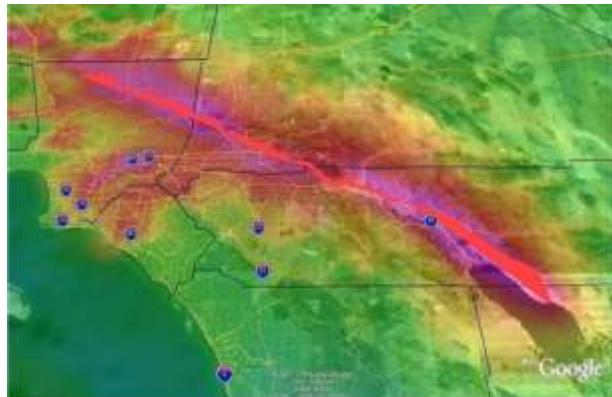
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<b>Enhanced Reliability:</b>	<b>Fiscal Year 2010-11</b> <b>Budget: \$ 5.25 M      Expended: \$ 2.09 M</b>
<p><b>Key Accomplishments Included:</b></p> <p><b>Completed Initial Investigation Report and Issued RFQ 975 for Hiram W. Wadsworth Pumping Plant Upgrades</b></p> <ul style="list-style-type: none"> <li>▪ Per the Board's authorization, staff continued the initial investigation of a rehabilitation project that will upgrade the controls, communications, and protection relay system, vibration monitoring system, and pump/generator unit power controls for the Hiram W. Wadsworth Pumping Plant at Diamond Valley Lake. Based on a detailed condition assessment conducted in 2009, near-term upgrades are needed to address end-of-life service issues, projected equipment failure rates, and component obsolescence.</li> <li>▪ During the period, the project team and consultant (Black &amp; Veatch) completed the final Initial Investigation Report. As a part of the initial investigation, staff also issued Request-For-Qualifications 975 in March to solicit qualified firms capable of assisting Metropolitan in executing a project of this size and complexity. Upon completion of the initial investigation phase, staff will return to the Board with a recommended approach for moving forward, currently scheduled for the second quarter of fiscal year 2011-12.</li> </ul> <p><b>Continued Development and Testing of the Electronic Discovery Management (E-Discovery) System</b></p> <ul style="list-style-type: none"> <li>▪ The objectives for implementing the automated E-Discovery system are to reduce legal risk, effort, time and costs associated with responding to discovery requests for electronically-stored information and to enhance legal compliance efforts.</li> <li>▪ During the period, staff continued development and testing of email archiving and E-Discovery software tools for the Legal Department to use in responding to discovery and public records requests.</li> </ul>	
	

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**Conducted IT Disaster Recovery Supervisory Control and Data Acquisition (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 in January involving the SCADA system. The exercise simulated the failure of SCADA servers at a treatment plant. The Oxidation Demonstration Plant (ODP) was used for the testing because it is a research facility similar to Metropolitan's treatment plants and can be used without affecting day-to-day water treatment operations. Staff exercised the disaster recovery procedures by bringing SCADA back online at the ODP facility using backup servers located at Metropolitan's disaster recovery facility. All recovery objectives in the exercise were met.
- The exercise was conducted in close coordination with Water System Operations' staff to ensure no interruptions in service to the operation of the production SCADA system.
- In addition, staff completed detail planning for an upcoming training exercise involving IT Emergency Management Team members who provide critical support in the event of an incident/emergency. The IT Incident Command Post is a part of Metropolitan's overall Incident Management System and may be activated should an emergency occur that requires recovery of key applications and/or communication systems.



**Issued a Request For Proposals (RFP) for Environmental, Health and Safety Management Information Systems Project**

- In support of the Water System Operations (WSO) Group, IT has initiated the Environmental, Health and Safety Management Information Systems (EMIS) Project. As a part of the project, the plan includes acquiring a comprehensive integrated system to replace existing standalone applications. Increasing regulations mandate more frequent reporting and compliance plans which require meticulous record keeping. By leveraging technology, a new integrated system provide staff the tools needed to better manage and track compliance, schedules, deadlines, and report metrics and trends across the organization. The new system will enhance Metropolitan's ability to monitor and track over 800 permits for equipment



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<p>and processes related to air quality, wastewater, hazardous material, hazardous waste and safety.</p> <ul style="list-style-type: none"><li>▪ As part of the first phase of the project, IT staff worked closely with WSO staff to complete the development of Request for Proposals 972 to seek a qualified firm to provide Environmental, Health and Safety Management Information Systems. The selection process is expected to be completed by June 2011.</li></ul> <p><b>Other Key Activities and Accomplishments</b></p> <ul style="list-style-type: none"><li>▪ <b>Two-Way Radio Upgrade Project</b> – Staff continued to work with Legal in the preparatory process related to the acquisition of radio-frequencies (e.g., X.W. licenses) needed for the Two-Way Radio System Upgrade project. The two-way radio system is an important element of Metropolitan's communication strategy and emergency response plan.</li><li>▪ <b>Communication Infrastructure Reliability Upgrade (CIRU) Project</b> – Metropolitan is seeking to replace the telephone system which is over 18 years-old and has reached the end of its useful life.</li><li>▪ During the period, staff reevaluated the sole brand approach for the CIRU project and a decision was made to not specify a particular brand to promote greater competition among firms providing Voice and Unified Communications solutions. Staff also continued to evaluate delivery approaches to identify cost saving opportunities. Delivery approaches being considered include on-premise, managed service, and cloud options.</li><li>▪ <b>Email (Exchange) System Upgrade</b> - As a part of the upgrade to enhance the reliability of Metropolitan's e-mail system, staff migrated BlackBerry users to a new server.</li></ul> <p>Expenditures in the Enhanced Reliability category were lower than planned through the third quarter fiscal year 2010/11. The fiscal year variance between planned and expended dollars were primarily due to projects being deferred to allow additional time to investigate cost effective options and alternative approaches such as cloud computing.</p>	
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Enhanced Cyber Security:	Fiscal Year 2010-11 Budget: \$0.34 M      Expended: \$0.07 M
<p><b>Key Accomplishments Included:</b></p> <p><b>Rolled-out Security Message Included in Metropolitan Emails</b></p> <ul style="list-style-type: none"><li>▪ In conjunction with the upgrade to Metropolitan's e-mail system, staff rolled out a standardized security message that appears at the bottom of all emails sent from Metropolitan. Incorporating such language in messages is a best practice and helps prevent unauthorized use of information sent via emails.</li></ul> <p><b>Continued on-going Cyber Security Monitoring and Controls</b></p> <ul style="list-style-type: none"><li>▪ Information Technology Security utilizes a complement of security software tools and related methods to proactively protect Metropolitan's network, infrastructure and databases. On-going monitoring and controls are key parts of ensuring a safe computing environment. Examples of security monitoring and control activities are described below:<ul style="list-style-type: none"><li>▪ Over a typical month during the reporting period, Metropolitan's security system monitored and blocked over 274,000 SPAM emails including ones containing known viruses.</li><li>▪ In addition, approximately 360 probes were made daily to the perimeter of Metropolitan's business network. The probes were detected and blocked by security software in place.</li></ul></li></ul> <p><b>Other Key Activities and Accomplishments</b></p> <ul style="list-style-type: none"><li>▪ During the period, IT Security staff completed the procurement of new encryption software to enhance security and provide safeguards to protect sensitive data stored on laptop hard drives in the event the devices are lost or stolen. Final preparations are underway to initiate roll-out of the new software beginning next quarter.</li><li>▪ Staff continued to publish monthly cyber security tips on Metropolitan's internal website to promote best practices on maintaining computer security, protecting personal information, and how to guard against Internet fraud.</li></ul>	 <p><b>IT Security Best Practices</b></p>  

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<ul style="list-style-type: none"> <li>▪ Provided on-going IT security orientation for all Metropolitan new hires.</li> </ul> <p>Expenditures in the Enhanced Cyber Security category were lower than planned for fiscal year 2010/11. The variance stems from a slight deferral of the Supervisory Control and Data Acquisition (SCADA) Cyber Security Upgrades project to focus available resources on wrapping up remaining elements of Phase II of the Information Security Remediation Initiative.</p>	
<p><b>Improved Water Quality:</b></p>	<p><b>Fiscal Year 2010-11</b>  <b>Budget: \$0.68 M      Expended: \$0.72 M<u>[u1]</u></b></p>
<p><b>Key Accomplishments Included:</b></p> <p><b>Completed Development Phase of Water Quality Monitoring and Rapid Event Detection System</b></p> <ul style="list-style-type: none"> <li>▪ Metropolitan's Water Quality Monitoring and Rapid Event Detection (WQMRED) System will provide real-time analysis of water quality information and help ensure water quality reliability. The event detection software collects and analyzes a vast amount of water quality data from instrumentation located throughout the treated water distribution system.</li> <li>▪ During the period, the development phase of the project was completed. The WQMRED system has been installed in Metropolitan's data center and is currently being configured and tuned to run well in Metropolitan's computer environment. Test plans are being finalized for system/user acceptance testing. Key milestones for the upcoming period include completion of system configuration and testing, completion of user acceptance testing, and initiating the roll-out of the new WQMREDS to Metropolitan's Water Quality staff.</li> </ul> <p><b>Other Key Accomplishments:</b></p> <p><b>Oxidation Retrofit Programs</b></p> <ul style="list-style-type: none"> <li>▪ For the Diemer Oxidation Retrofit Program (ORP), IT staff continued to review and provide comments and feedback on contractor submittals for compliance with Metropolitan's control system/software specifications.</li> <li>▪ For the Weymouth ORP, IT staff continued</li> </ul>	

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<p>review of the 99% design documents and specifications.</p> <p><b>Provided IT Services to Other Key Water Quality-Related Projects and Programs</b></p> <ul style="list-style-type: none"> <li>▪ IT services performed for other key water quality related-capital projects included control system design review, programming, technical support, and system start-up support. The projects worked on were:           <ul style="list-style-type: none"> <li>▪ Distribution System – Automated Process Control Upgrades</li> <li>▪ Weymouth Power System Upgrade</li> <li>▪ Diemer Fire and Potable Water Pump Station</li> </ul> </li> </ul> <p>Expenditures in the Improved Water Quality category were slightly higher than planned through the third quarter. This category is forecast to be on-target for the fiscal year.</p>	
<p><b>Productivity / Cost Efficiency:</b></p>	<p><b>Fiscal Year 2010-11</b>  <b>Budget: \$0.65 M      Expended: \$0.45 M</b></p>
<p><b>Key Accomplishments Included:</b></p> <p><b>Continued Cloud Computing Evaluations</b></p> <ul style="list-style-type: none"> <li>▪ During the period, staff continued to evaluate cloud (Internet-based) computing technology options for applicability at Metropolitan. IT projects are being evaluated to determine whether cloud-based applications may provide a viable and cost effective alternative to traditional "on-premise" installed software applications. For example, staff is currently evaluating proposals for the Environmental Health and Safety (EHS) Reporting / Documentation System Replacement project, which include both cloud-based solutions as well as on premise installed applications.</li> </ul> <p><b>Substantially Completed the Mobile</b></p>	

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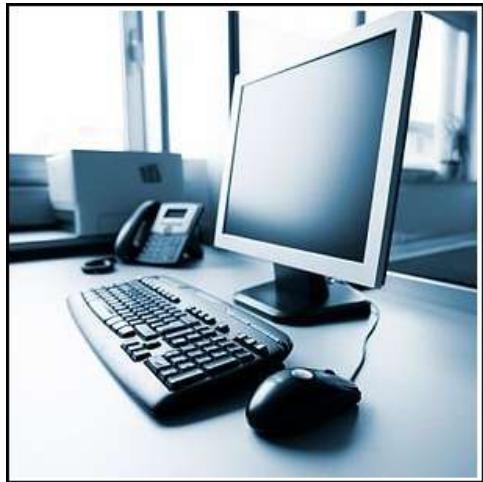
**Technology Initiative**

- In support of WSO's Mobile Technology initiative to streamline maintenance management operations, the Materials Interface and Mobile Technology (MIMT) project was established to deploy hand-held units for field maintenance workers to use with the goal of improving the quality and completeness of maintenance data by capturing information in the field as part of the actual work process. This mobile computing capability allows staff to enter timekeeping information, work order data, and other key information about field assets.
- During the period, staff began receiving the final shipment of handheld units. Remaining tasks include inspection and acceptance of the units, and final user acceptance of the project.



**Continued CAD Management System**

- The Computer-Aided Design (CAD) Document Management System replaced an obsolete application for storing and managing engineering drawings with a system that is fully integrated with the CAD system used by engineering staff to create design drawings. The system was previously rolled-out and successfully implemented.
- During the period, IT staff began working with engineering staff on defining requirements for adding a digital signature capability to the CAD Document Management System. Implementing the capability to apply digital signatures to engineering drawings would streamline the process as follows:
  - Routing to obtain signatures on the hardcopy CAD drawings will no longer be required, as routing can be done electronically;
  - The additional step to scan the drawing into PDF format, after it is signed, will no longer be required.



Expenditures in the Productivity/Cost Efficiency category were lower than planned through the third quarter of the fiscal year. The fiscal year variance is due to the deferral of the Accounts Payable Imaging project, as requested by the project sponsor.