• ITSP Quarterly Report - Written Report (period ending Dec. 2014)

Summary

This report provides a quarterly update on progress to implement Metropolitan's Information Technology Strategic Plan (ITSP) and on information technology (IT) activities for the period ending December 31, 2014. 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 refreshed in 2010 and is currently being 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 CIP planning process.

There were a number of important milestones achieved during the period that are summarized in this report. Selected accomplishments include: obtained Board's approval and authorization for the Network Reliability Upgrade, Voice over Internet Protocol and the Oracle Financial Application projects; successfully rolled out the new Accounts Payable automation system; and upgraded Metropolitan's Electronic System Log application, which integrates with the Supervisory Control and Data Acquisition servers into a centrally managed database.

Key milestones for the upcoming quarter ending March 31, 2015 include: continuing the pilot phase as part of the Emergency Radio System project, continuing to complete the SCADA Multiprotocol Label Switching project, and finalizing a draft IT assessment in support of the Bay Delta Conservation Team.

Purpose

Administrative Code 2700; Article 2 Quarterly Reports; Section 2720 General Manager's Quarterly Reports; (e) To the Organization, Personnel and Technology Committee, the status of all information technology projects throughout the organization.

Detailed Report

Attached are highlights of progress and major milestones reached on IT projects / initiatives during the period of October 1, 2014 through December 31, 2014. 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

Enhanced Reliability:	**Through 2nd Quarter**
	FY Budget: $4.72 M FY Expended: $1.91 M

Key Accomplishments Included:

Network Reliability Upgrades Project

Metropolitan's network connects workstations, servers, and computer equipment via communication lines that extend throughout the distribution system and to the Colorado River Aqueduct (CRA) pumping plants. A majority of Metropolitan's communication network devices have been in continuous operation between 7 and 12 years. Recent inspections have identified network hardware components showing signs of wear and requiring increasingly frequent repairs. Typical useful life expectancy for network hardware ranges from seven to nine years for network equipment. Metropolitan depends on this communication network to transmit data, voice, video, and command signals to operate its distribution and business systems.

- In October, the Board appropriated $6.04 million; awarded a $3.55 million procurement contract for new network equipment; authorized final design of electrical, cooling, and backup power system upgrades for network rooms located on each floor of Metropolitan's Headquarters Building; and authorized preliminary design and field assessments of network equipment.

- During the period, staff submitted the construction drawings for Union Station Headquarters network room upgrades to the Los Angeles City for permits approval. In addition, IT staff completed the procurement negotiation contract with the Board approved vendor.

- Next step, staff is in preparation of the purchase order for building the network backbone.

Voice over Internet Protocol (VOIP) Project

The new VoIP telephone system will replace the existing telephone system that has reached the end of its useful service life. This system has been in continuous operation for over 22 years and is at the end of its useful service life. The upgrade to a VOIP-based system will create the infrastructure foundation to enable future convergence of related communications technologies such as messaging (e-mail, instant messaging, text messaging, fax, and voice mail) and conferencing (audio, video, and web).

- In November, the Board approved and authorized an award of contract to replace the aging

telephone system.

- Currently, staff started the negotiation of the terms and conditions with vendor.
- Next quarter, staff will conclude negotiations, execute the contract, and start the design phase of the project.

Hiram Wadsworth Pumping Plant Project

The Board authorized the final design to replace the control and electrical protection systems for the Hiram W. Wadsworth Pumping Plant at Diamond Valley Lake (DVL). These systems automatically operate and protect the pump/turbine units, enabling the facility to control flows between DVL, the Inland Feeder, and the San Diego Canal. These systems have reached the end of their service life and individual components have begun to fail. The pumping plant's control and electrical protection systems are failing due to their length of time in service, while spare parts are no longer available. The upgrades are needed to maintain full operational control and reliability of the facility.

- During the period, staff and consultants worked together on several project deliverables (e.g. protective relays and programmable functional specification which are critical electrical protection systems). In addition, tests were performed on the generator units to establish and document the baseline performance for the upgrades.
- Next step, staff plans to perform final design on several components required for the pilot implementation phase of the upgrades.

Emergency Radio System (Two Way Radio) Project

Metropolitan staff relies on handheld, vehicle-mounted, and fixed-station radios for both emergency response and day-to-day operational communications. The existing radio configuration uses a combination of three different localized systems which were deployed over a period of three decades. The systems lack reliability, capacity, and coverage to meet disaster recovery needs, and are difficult to use. During recent disaster recovery exercises, the radio systems could not provide an effective means of communication. This project will replace the existing three systems with a single system of sufficient capacity, usability, and coverage to communicate across Metropolitan's entire service area.

- During the period, the Project Team worked on

Automatic Voltage Regulator

the following tasks:

- Completed system design for pilot phase
- Completed the installation at two remote mountaintop sites, one plant site and one tunnel site
- Completed the installation of 10 mobile radios.
- Performed integrated system testing for the pilot phase.

- Next step, target to complete and accept the final system design package. Another critical item is the completion of the RFB for the public-work components of the system.

Oracle 12 Upgrade Project

The Oracle Financial application supports Metropolitan's core business functions. In order to maintain vendor support and provide new functionality, the application requires an upgrade to the current version. There has not been a major upgrade to the Oracle Applications since 2002, when the Project and Grants Accounting module was deployed. Additionally, the existing Travel Expense Reimbursement system is based on older technology that is no longer supported. This project will replace the existing Travel Expense Reporting system with an integrated Oracle module, iExpenses. In addition, existing financial applications cannot run on new hardware.

- In November, the Board approved and appropriated an upgrade to Metropolitan's Oracle Financial Application.

- During this period, staff completed the contract negotiation, mobilized the project and conducted kick off meeting.

- Next step, IT staff is working in conjunction with consultants to plan the design phase.

Enterprise UNIX Server Upgrade

UNIX servers located in Metropolitan's Data Center house the Districts enterprise applications such as the Financial and Human Resource Management systems. These servers support key enterprise business applications (e.g. Oracle and PeopleSoft).

- To date, over 60 out of 72 planned applications/databases were successfully migrated to the new UNIX servers. IT staff continued to work collaboratively with business application owners to test and validate the system.

- Next step, IT staff plans to migrate the remaining applications/databases to the new server by the end of June.
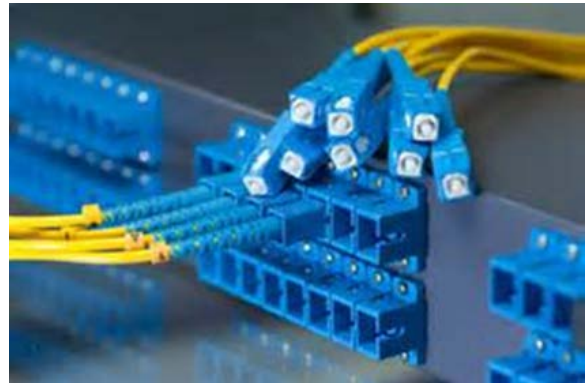
Other Key Activities and Accomplishments

Supervisory Control and Data Acquisition (SCADA) Communication Multiprotocol Label Switching (MPLS) upgrade; The SCADA wide area network communications is based on frame-relay technology that has been in operation for over 16 years. The frame-relay technology is approaching end of life, the telecommunication carrier (e.g. AT&T and Verizon) will end support for this older technology. Like Metropolitan, existing customers are switching to a newer network technology such as MPLS. MPLS will increase reliability and performance by providing greater bandwidth capabilities.

Currently, IT and WSO field staff are working on two projects to convert approximately 105 frame relay sites to MPLS technology. These sites connect to the main MPLS communication backbone that was previously completed.

- During this period, IT and WSO converted the frame-relay to MPLS technology at various sites including Jensen Filtration Plant, Etiwanda Power Plant, and Weymouth Filtration Plant.

- Next step, complete installation at Mills Plant, Diamond Valley Lake and Lake Matthews. This project is scheduled to complete in the June timeframe

The fiscal year variance for the expenditure is less than budgeted for this category. The variance is expected to decrease as the projects complete the planning phase and move into subsequent phases.

Enhanced Cyber Security:	**Through 2nd Quarter**
	FY Budget: $0.45 M FY Expended: $0.15 M

Key Accomplishments Included:

Supervisory Control and Data Acquisition Cyber Security Upgrades Project:

The mission of enhanced cyber security is to secure system and network resources, protect application systems, safeguard the confidentiality of employee and district information, and educate employees about operating policies, procedures and best practices.

Cyber security is a high priority and is a key part of the Information Technology Strategic Plan (ITSP). Maintaining a secure computing environment requires regular enhancements and upgrades to Metropolitan's IT information security infrastructure to ensure protection against continually evolving cyber threats.

- Recent security enhancements to the SCADA network included upgrades such as vulnerability assessment of network monitoring, event logging tool and system center tool have been completed. At this time, the project is substantially complete.
- Next step, staff will conduct a follow up on security assessment to ensure Metropolitan's system network and data are secured. Also, next quarter, staff is preparing to brief the Board on IT cyber security at Metropolitan.

Other Key Activities and Accomplishments

- Continued with the effort to use the National Institute Standards and Technology (NIST) Cybersecurity Framework to assess Metropolitan's cyber security posture. NIST is a Cybersecurity Framework that is developed based on Presidential Executive Order 13636 for Improving Critical Infrastructure Cybersecurity.

- IT Security Team continued to publish monthly cyber security tips on Metropolitan's internal website providing current security issues including data security, social engineering and phishing attacks.

Expenditures in the Enhanced Cyber Security category were within plan for the second quarter. All projects are projected to complete within Board approved budgets.

Improved Water Quality:	**Through 2nd Quarter**
	FY Budget: $0.00 M **FY Expended: $0.00 M**

Key Accomplishments Included:

Upgraded Electronic System Log (ESL)

The IT's Operations Application Support Team upgraded an in-house web application, Electronic System Log (ESL), which integrates with the Supervisory Control and Data Acquisition servers into a centrally managed database. ESL is used by WSO to maintain critical and compliance operation log data mandated by State authorities. The upgraded application provided new capabilities (e.g. authenticate users to enhance security, ease of use and maintenance).

Other Key Activities and Accomplishments

IT staff continued to provide on-going support to important Water Quality software applications used for asset tracking, identifying water movement to capture storages, deliveries and sales, and compliance reporting. These included:

- Interim Enhanced Surface Water Treatment Rule is used to support monitoring and control of microbial pathogens in drinking water. The data is collected to provide risk analysis and trade-offs with disinfection byproducts. The California Department of Health Services assesses filtration plant reliability based on the compliance reports. IT staff performed Disaster Recovery testing of the application.
- Filtration Plant Laboratory Sheet (Labsheet US Environmental Protection Agency (USEPA) and California Department of Health Services (CDHS) require water filtration plans to log specific water quality values resulting from laboratory tests. This information is included in treatment plant compliance reports. Per customer request, IT staff provided programming to enhance the visual ease of use of the application.

No capital dollars were budgeted in the Water Quality category for the second quarter. All activities in this category reflect work being done as part of the fiscal year 2014-2015 O&M budget.

Productivity / Cost Efficiency:	**Through 2nd Quarter**
	FY Budget: $0.69 M **FY Expended: $0.57 M**

Key Accomplishments Included:

PeopleSoft Human Capital Management (HCM) Upgrade 9.2

The upgrade of PeopleSoft application is vital to payroll processing, tracking of employee-related information and monitoring of required compliance training. Staff evaluated alternative solutions and the findings indicate that upgrading the PeopleSoft application is the most reliable path to pursue for Metropolitan. The upgraded HCM application including Employee Relation, Payroll, Benefits and Temporary Worker, and Consultant Tracking Module, will allow Metropolitan to continue to receive vendor support and needed tax updates.

- During this period, the Project Team worked on the following items:
  - Completed 90% of required modifications to screens and reports to meet business needs
  - Completed Set-up of environment in Version 8.9 per the Consultant recommendation
  - Tested Payroll, Benefits Administration and Employee Relations modules in the new environment.
- Next step, staff plans to conduct user acceptance testing on the HCM application with a target completion date at the end of the fiscal year.

Other Key Activities and Accomplishments

- Cloud Computing Technology and Collaborative Work Environment Solutions:
  - In partnership with Water Resources Management (WRM), staff commenced a pilot to evaluate a software-as-a-service cloud solution for managing WRM's agreements. At the conclusion of the pilot phase, stakeholders will assess whether or not this meets the user requirements.
  - Staff attended a Microsoft in Government workshop to evaluate Microsoft's cloud offerings and a demonstration of e-Discovery capabilities for SharePoint Online.
  - Staff created new collaborative work sites by using SharePoint that include:

- Real Estate Portfolio issue tracking; team sites for Business Application Support Team and Technical Control Team; - On-Site Retrofit pilot site for Water Resource Management - Prototype document search and retrieval site for the Annexations Team. - IT coordinated a new internship program sponsored by California State University, Dominguez Hills College. The internship offers student hands on experience while giving Metropolitan access to fresh perspective and leverage technological skills of interns. Expenditures for the Productivity / Cost Efficiency category were within plan for the second quarter. All projects within this category are projected to complete within Board approved budgets.	