

- Information Technology Strategic Plan (ITSP) – Quarterly Report for the period ending June 2007

## 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 June 2007. There were a number of important milestones achieved during the period that are summarized 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 and the appropriations for the ITSP programs through June 30, 2007.

**Attachment 2** provides a summary of the appropriations and expenditures through June 30, 2007.

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

## Detailed Report


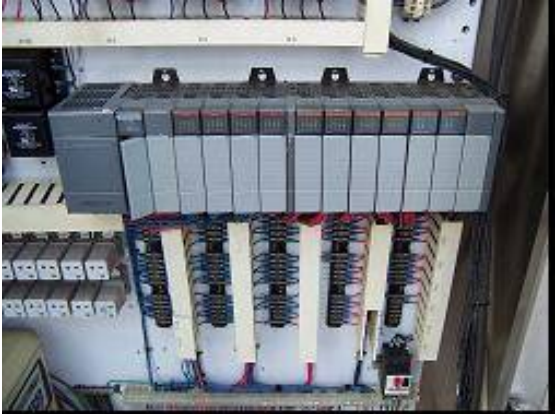
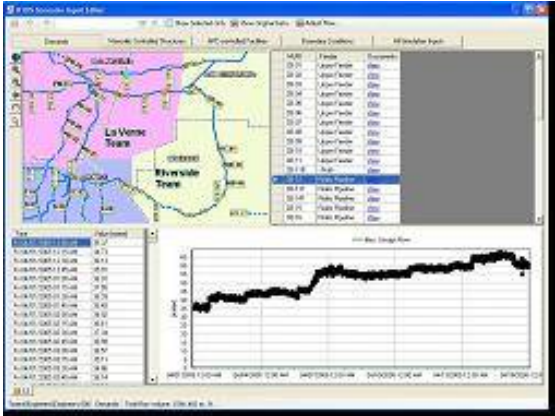
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Below are highlights of progress and major milestones reached for IT projects / initiatives during the period of April 1<sup>st</sup> through June 30, 2007. The projects are categorized by business driver as follows:



### IT STRATEGIC PLAN

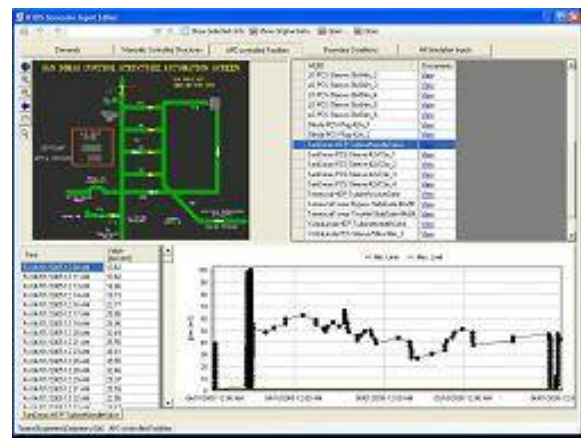
- Enhanced Reliability** – Enhance system reliability
- Improved Water Quality** – Ensure water quality excellence
- Enhanced Cyber Security** – Effectively manage and safeguard assets
- Productivity / Cost Efficiency** – Improve process efficiency and effectiveness

<b>Enhanced Reliability:</b>	<b>Fiscal Year 2006-07 to date</b> <b>Budget: \$ 6.46 M      Expended: \$ 6.14 M</b>
<p><b>Key accomplishments included:</b></p> <p><b>Installed Programmable Logic Controller (PLC) for traveling bridge at the Jensen Treatment Plant</b></p> <ul style="list-style-type: none"> <li>■ Programmable Logic Controllers (PLCs) are industrial process control devices that are often tied into Metropolitan’s Supervisory Control and Data Acquisition (SCADA) system to control and monitor a variety of important water system-related processes such as filtration, chemical feed, emergency generators, and washwater reclamation.</li> <li>■ This initiative is intended to proactively replace the oldest PLC units before they fail; the criterion is to replace standard PLCs that are older than 10 years. These are field devices that are typically exposed to environmental extremes such as temperature, moisture, and dust. Replacement of the PLCs is important as these devices are reaching the end of their normal life cycle and failures can cause upsets in the treatment and distribution process.</li> <li>■ During this reporting period, a new PLC unit was installed on a traveling bridge at the Jensen Treatment Plant. Traveling bridges are mechanical carriage devices that scour the bottom of the sedimentation basins. This is the second unit that has been replaced. Planning is currently underway to replace the remaining six PLC units at the Jensen Treatment Plant. In addition, staff has initiated the documentation of requirements for PLC replacements on the Dry Polymer System at Jensen and the Emergency Generator at Diemer.</li> </ul> <p><b>Rolled out Operations User's Interface as part of the SMART Ops Pilot Phase</b></p> <ul style="list-style-type: none"> <li>■ The objective of the SMART Operations (SMART Ops) project, formerly named the Real Time Operating System (RTOS), is to develop and implement a hydraulic model that simulates the behavior of Metropolitan’s water distribution system, including the Colorado River Aqueduct (CRA). SMART Ops will be used for planning the routing of water during shutdowns, analyzing distribution system control, and facility planning.</li> </ul>	<div style="text-align: center;">  <p>Jensen Traveling Bridge</p> </div> <div style="text-align: center;">  <p>Programmable Logic Controller</p> </div> <div style="text-align: center;">  <p>SMART Ops – Pilot Phase</p> </div>

- The pilot phase serves as a “proof of concept” by developing a working hydraulic model that simulates water grade, flows and levels for the Rialto Feeder portion of Metropolitan’s distribution system. In the prior reporting period, staff successfully completed the initial pilot deployment of the hydraulic model for the Rialto Feeder region and the rollout of the pilot system to users. Staff anticipates that evaluation of the pilot system will be completed in the 3<sup>rd</sup> quarter of 2007.
- During the period, the project team rolled out the Operations User's Interface, which provides an operator’s view into the hydraulic model of the system. Water System Operations (WSO) staff evaluated the model and interface, and approved of the functionality.

**Conducted IT Incident Command Post Exercises and performed Additional IT Disaster Recovery Exercise**

- During the reporting period, IT participated in a District Wide Emergency exercise involving the Emergency Operations Center (EOC) and all Incident Command Centers (ICCs.). In support of this district-wide exercise, IT staff executed recovery procedures based on an emergency/disaster scenario in mobilizing recovery efforts for critical IT systems.
- As part of ongoing efforts to regularly test and exercise IT recovery procedures, staff continued to conduct additional Information Technology disaster recovery exercises. In June, an exercise was conducted to ensure key IT staff members were familiar with the procedures to follow during an emergency/disaster situation. As part the exercise, staff objectives were to meet Recovery Time Objectives (RTO) and Recovery Point Objectives (RPO) and to identify areas requiring enhancements. The IT Disaster Recovery exercises are an integral part of ongoing efforts to refine Metropolitan’s ability to recover critical business processes in the event of a disaster.



SMART Ops – Pilot phase



IT Disaster Recovery Exercise



**Continued the PC Replacement Initiative**

- A project is underway to replace the desktop and laptop PCs for Metropolitan Board members and employees. The current equipment is more than five years old. During this period, a number of accomplishments were achieved including:
  - Deployed new laptops to the Board of Directors.
  - Completed initial deployment of new desktops and laptops to Water Quality staff members as part of the pre-pilot phase of the rollout. Preparations are underway for the next phase, with additional PC units scheduled for deployment at La Verne, and then proceeding to the Mills facility beginning in July.
  - Continued testing Metropolitan’s applications to determine their compatibility with Microsoft’s new Vista operating system.
  - Rolled out the Hewlett Packard (HP) Employee Purchase Program; and Microsoft’s Home Use and Employee Purchase Programs. These programs enable Metropolitan employees to purchase a variety of HP products at a discount. In addition, Metropolitan employees are able to get a licensed copy of select Microsoft Office desktop programs to install and use on a home computer as well as significant discounts off retail pricing on Microsoft's most popular productivity and consumer products.




**Completed Network Data Storage Upgrade**

- During the period, IT staff successfully migrated data from an old data storage system to a new system. This upgrade affected a large number of primary network data drives and required significant planning to ensure that file access permissions transferred properly to the new environment. This migration was a huge undertaking and was conducted over a holiday weekend to minimize any interruption of service to Metropolitan staff.

Expenditures in the Enhanced Reliability category were generally on target for fiscal year 2006-07 as the Automated Meter Reading (AMR) and SMART Ops projects proceeded according to plan.



Sample Data Storage

<p align="center"><b>Improved Water Quality:</b></p>	<p align="center"><b>Fiscal Year 2006-07 to date</b>  <b>Budget: \$ 0.25 M    Expended: \$ 0.02 M</b></p>
<p><b>Key accomplishments included:</b></p> <p><b>Oxidation Retrofit Programs</b></p> <ul style="list-style-type: none"> <li>■ The Skinner, Weymouth and Diemer Oxidation Retrofit Programs (ORP) are capital programs to add ozonation to Metropolitan’s treatment plants. A major component of these programs is the design, programming, and installation of hardware and software to control the ozone process.</li> <li>■ For the Skinner ORP, which is under construction, staff continued to provide technical support to ensure the control system is in compliance with Metropolitan’s specifications.</li> <li>■ For the Weymouth ORP, staff continued to review 100% design documents for SCADA controls and instrumentation.</li> <li>■ For the Diemer ORP, staff continued to provide technical support and participated in the 90% design review meeting.</li> </ul> <p><b>Continued support for Skinner Treatment Plant Expansion</b></p> <ul style="list-style-type: none"> <li>■ For Module No. 7, development of filter backwash APC (Automatic Process Control) programming was completed and tested in the field in preparation for final deployment. In addition, the APC programs for potable water pumps were completed and tested.</li> <li>■ In the chemical areas, APC programs for Alum/Ferric, Ammonia and Polymer were completed and tested in the field in preparation for final deployment.</li> <li>■ Staff is continuing to develop APCs for other chemicals such as Dry Polymer, Fluorosilicic Acid and Sodium Hypochlorite.</li> </ul> <p><b>Other Key Accomplishments included:</b></p> <ul style="list-style-type: none"> <li>■ For the Diemer Solids Handling Facility control system, staff continued to provide technical support for construction and start-up.</li> </ul>	 <p align="center">Skinner Treatment Plant</p>  <p align="center">Weymouth Treatment Plant</p>  <p align="center">Diemer Treatment Plant</p>

- In support of Metropolitan’s initiative to add fluoridation at the five treatment plants, IT staff continued to provide technical support for construction and start-up of fluoridation systems at Skinner, Weymouth, Diemer, Mills and Jensen treatment plant. Support includes development of graphic screens and testing of APC programs.
- In support of chemical system improvements at the Weymouth Plant, staff continued to review 99% design documents for SCADA controls and instrumentation.

**Completed Software Programming in support of the Skinner Treatment Plant Expansion**

- During the period, staff completed programming changes and enhancements in support of Module No. 7. These included implementing software for regulatory and water quality data monitoring.


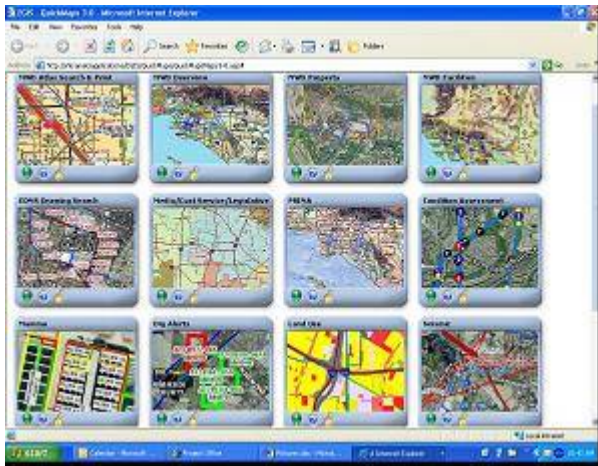
Expenditures in the Improved Water Quality category were lower than projected for fiscal year 2006-07. The variance in this category stems from strategic changes to the Chemical Inventory and Electronic System Log project as requirements were reassessed and subsequently reprioritized.



Chemical System



<p align="center"><b>Enhanced Cyber Security:</b></p>	<p align="center"><b>Fiscal Year 2006-07 to date</b>  <b>Budget: \$ 0.35 M      Expended: \$ 0.31 M</b></p>
<p><b>Key accomplishments included:</b></p> <p><b>Completed Phase I of the Comprehensive Information Security Assessment and Remediation Project</b></p> <ul style="list-style-type: none"> <li>■ During the period, staff completed Phase I of the Comprehensive Information Security Assessment and Remediation Project. The key deliverables from this project included: <ul style="list-style-type: none"> <li>➢ Completion of a comprehensive cyber security assessment by a security consultant (KEMA)</li> <li>➢ Implementation of stronger security on District laptop computers</li> <li>➢ Deployment of enhanced security for the SCADA network</li> </ul> </li> </ul> <p><b>Continued Phase Two of the IT Security Assessment and Remediation Initiative</b></p> <ul style="list-style-type: none"> <li>■ Staff began evaluating of security information management systems and initiated pilot testing to evaluate vulnerability assessment tools from industry- leading security vendors. The pilot phase is scheduled to be completed in the 3<sup>rd</sup> quarter of 2007. Upon completion of the pilot phase, staff will evaluate the findings and provide recommendations to the Information Security Steering Committee on new methods to strengthen Metropolitan’s IT systems.</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 staff continued to provide IT security orientation for all Metropolitan new hires.</li> </ul> <p>Expenditures in the Enhanced Cyber Security category were generally on target for fiscal year 2006-07 with the completion of the Phase I Security Assessment and Remediation Project.</p>	<div data-bbox="987 493 1325 995" data-label="Image"> </div> <div data-bbox="865 1159 1421 1535" data-label="Image"> </div> <p align="center">Cyber Security</p>

<b>Productivity / Cost Efficiency:</b>	<b>Fiscal Year 2006-07 to date</b> <b>Budget: \$ 4.54 M    Expended: \$ 2.32 M</b>
<p><b>Completed On-line Job Application Software Testing and Deployment Planning as part of Phase I of the Human Resource (HR) Technology Improvement project</b></p> <ul style="list-style-type: none"><li>■ One of the initiatives to improve Human Resources services is to implement a tool for self-service on-line job applications. When fully deployed, this will allow both internal and external applicants to submit job applications on-line over the Internet. The self-service capabilities will lead to increased productivity by reducing the data entry time, thus freeing HR staff to concentrate more effort on recruitment activities.</li><li>■ During the period, staff implemented Resume Mirror (Internet-based recruitment software), which will allow both internal and external candidates to submit their job applications and resumes on-line over the Internet. Initially, HR staff will use the system before it is released to job applicants for use. The deployment of Resume Mirror completes Phase I of the HR Improvement project.</li><li>■ Payroll, Benefit, and HR Self-service components of the system have been deployed for approximately three years. The Recruitment module, the final module, was recently deployed. At the start of the project, it was estimated the project will generate benefit in the amount of \$1.79 million over 5 years. To date, the actual savings are \$335,000.</li></ul> <p><b>Completed Phase One of the Enterprise Geographic Information System (EGIS) project</b></p> <ul style="list-style-type: none"><li>■ The Enterprise Geographic Information System (EGIS) project will establish a central geographic database comprised of approximately 200 layers of information (e.g., streets, pipelines, parcels, facilities, etc.) In addition, the EGIS project deploys web-based mapping applications for viewing and analyzing facility and related business data throughout Metropolitan.</li></ul>	 <p data-bbox="971 884 1333 913">On-line Job Application Software</p>  <p data-bbox="1053 1858 1247 1887">EGIS QuickMaps</p>



- During the period, staff completed Phase One of the EGIS project. This project established an EGIS infrastructure that enables electronic sharing of mapping, real property, and facility data throughout Metropolitan. This infrastructure provides a centralized shared GIS database and the initial conversion of key existing map layers and related data from existing systems.
- At the planning of the project, it was estimated that the benefits over five years will be \$4.4 million. As the system was recently deployed, staff is initiating procedures to measure the usage of the system and calculate actual benefits.

**Completed Hand-Held Mobile pilots for the Calabasas Feeder and the East Valley Feeder**

- During the period, as part of the Strategic Operations and Maintenance Management System (SOMMS) Program, staff deployed hand-held mobile devices to maintenance workers on a pilot basis. The hand-held devices were set up to display and create work orders, allow time entry, and collect asset data on approximately 40 structures in the Calabasas feeder.
- In June, staff completed a second pilot test on the East Valley Feeder consisting of 105 structures. The hand-held devices downloaded work orders and asset information, and allowed maintenance workers in the field to process work orders, create new work orders, record time, and collect asset data. WSO-requested enhancements were developed and incorporated into the second pilot on the East Valley Feeder, and were successfully tested. Preliminary results from both pilots were positive. The next step will be to summarize and report the results to WSO management and to the project’s steering committee.
- Staff reviewed expenditures and accomplishments of the SOMMS program from its inception in 1994 and concluded that expenditures and accomplishments were aligned with original program objectives. This oversight process ensures that long running programs meet program budget and appropriation goals.



Overall, expenditures were below budget in the Productivity/Cost Efficiency category during the fiscal year, as some projects were deferred to focus available resources on the highest priority efforts. Examples of projects that were budgeted but did not start in fiscal year 2006-07 include CAD Management, Oracle 11i Upgrade, Water Conservation System, and the Automated Testing Tool project.

Board Report (Information Technology Strategic Plan (ITSP) – Quarterly Report for the period ending June 2007)

**Attachment 1**

**Summary of Board actions:**

The following table provides a sequential listing of ITSP Board appropriations through June 30, 2007:

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	Fleet Management System	\$ 846,000
June-07	15376	Phase One of the Information Technology Infrastructure Upgrade	\$ 1,590,000
			<b>\$ 63,564,230</b>

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

- On April 10, 2007, the Board appropriated \$4.41 million and authorized: (1) Phase II of the Automatic Meter Reading Upgrade Project; and (2) Amendment to an agreement with FluidIQs (Approp. 15397).
- On June 12, 2007, the Board appropriated \$846,000 and authorized: (1) Implementation of Fleet Management and Fuel Management Systems; and (2) An agreement with Total Resource Management, Inc., in an amount not to exceed \$967,000 (Approps. 15259 and 15411)
- On June 12, 2007, the Board appropriated \$1.59 million and authorized Phase One of the Information Technology Infrastructure Upgrade (Approp. 15376)

Board Report (Information Technology Strategic Plan (ITSP) –  
Quarterly Report for the period ending June 2007)

**Attachment 2**

**Summary of Board Actions:**

The following table provides a summary of ITSP Board appropriations and expenditures through June 30, 2007:

Appropriation No.	Program Description	Total Amount Appropriated	Expenditures (Through June 30, 2007)
15397	Control System Enhancement Program (CSEP)	\$ 17,533,000	\$ 7,643,313
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 (B,F&HR) Program	\$ 17,154,230	\$ 7,713,157
15376	Information Technology Infrastructure Program	\$ 22,661,000	\$ 13,838,132
15411	Information Technology Security Program	\$ 4,436,000	\$ 2,226,623
		<b>\$ 63,564,230</b>	<b>\$ 32,928,979</b>



Board Report (Information Technology Strategic Plan (ITSP) –  
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**Attachment 3**

**Summary list of IT capital projects:**

<b>Enhanced Reliability</b>	
Email System Upgrade	Completed
IT Business Systems / Data Recovery	Completed
Energy Management System (Phase I)	Completed
Programmable Logic Controller Standardization (Phase 1)	Completed
Maintenance Management System Software Version Upgrade	Completed
Control System Data Storage and Reporting	Completed
Telecommunication Infrastructure Upgrade Program	Completed
Peoplesoft Software Version Upgrade (from 7.5 to 8.3)	Completed
Automatic Meter Reading / Remote Terminal Unit Upgrade	In Progress
SMART Operations - formerly Real Time Operating System (RTOS)	In Progress
Control System Enhancement Program Implementation	In Progress
Automation Communication Upgrade	In Progress
Energy Management System (Phase II)	In Progress
Programmable Logic Controller - Lifecycle Replacement (Phase II)	In Progress
IT Network Upgrade (Phase I)	In Progress
IT Network Upgrade (Phase II)	In Progress
Field Emergency Generator Upgrade	In Progress
Phonemail Replacement	In Progress
Two Way Radio Upgrade (Phase I)	In Progress
Union Station Headquarters Technology Upgrade	In Progress
Human Resources (Peoplesoft) Improvement Plan (Phase II)	In Progress
Water Billing System Upgrade	In Progress
IT Infrastructure Upgrade (Phase I)	In Progress
Enhanced Distribution System Control	On Hold (*1)
Colorado River Aqueduct (CRA) Control Integration	On Hold (*1)
<b>Improved Water Quality</b>	
Oxidation Demonstration Plant (ODP) Control System Replacement	Completed
Laboratory Information Management System Upgrade	Completed
Plant Influent Flow Metering Upgrade	In Progress
<b>Enhanced Cyber Security</b>	
Information Security Administration Software	Completed
SCADA Operator Authentication	Completed
IT Security Monitoring Improvement	Completed
SCADA Security Improvements	Completed
Information Security Assessment/Remediation (Phase I)	Completed
Information Security Assessment/Remediation (Phase II)	In Progress
<b>Productivity / Cost Efficiency</b>	
E-Business Suite	Completed
Project Accounting and Grants Management	Completed
Human Resources (Peoplesoft) Improvement Plan (Phase I)	Completed
Enterprise Geographic Information System (Phase I)	Completed
Strategic Operations and Maintenance Management System (SOMMS)	In Progress
Integrated Corporate Budgeting System	In Progress
Fleet Management System	In Progress

**Footnote\***

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