Project Progress Report #3

As of January 31, 2003

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"Technology Integration Project"

Report #0311 *February 20, 2003*

Summary

The City is currently in the process of enhancing Utility Services through the implementation and integration of five major information technology systems, Call Center Director (CCD), Interactive Voice Recognition (IVR), Outage Management System (OMS), Work Management System (WMS), and Mobile Workforce Management (MWM). This project, referred to as the Technology Integration Project (TIP), is further described in the Background Section.

Overall, as of January 31, 2003:

- The CCD has been completed.
- Infrastructure improvements for the IVR have been completed, and the IVR is in the implementation phase.
- The OMS, WMS, and MWM are in the planning phase.
- Obligations to date of $3,661,321 are within the amended budget of $6,689,564.
- At this time, it appears that the project will not meet its original September 2003 estimated completion date. Management has estimated a revised target completion date of May 2004, with the understanding that this date may change based on available resources or other unforeseen factors.

This report is the third in a series on TIP. The purpose of our review is to provide assurances that TIP complies with City policies and procedures and contract requirements. Based on our review, we can provide assurances that:

√ Project staff have substantially complied with City policies and procedures and contract requirements;

√ Contract deliverables were received and accepted before payments to vendors were processed; and

√ Except as noted below, risks and project controls are being addressed.

There are three tables provided in this report. Table 1 summarizes the planning, acquisition, and/or implementation components that have been completed satisfactorily, are still in progress or are outstanding. Table 1 also identifies areas where improvements can be made, including:

- Better documenting executive steering committee meetings;
- Better communicating project status to the executive steering committee;
- Designating a functional project manager to work with the ISS project manager; and
- Developing a detailed project budget and improved monitoring of expenditures.

Table 2 of this report summarizes the status of previously identified significant issues from progress report #0130, issued July 2001. For issues previously identified, we have included the status and any additional plans by management to address or resolve each issue.

Table 3 summarizes the status of additional outstanding significant issues identified since the prior report that need to be resolved as TIP progresses. Outstanding issues from Tables 2 and 3 include:

- accuracy of telephone data;
- accuracy and completeness of data in GIS;
- planning for the City's use of 800 MHz data system;
- sharing project-related work order information among TIP information systems;
- duplication of effort among current information systems projects;
- managing the business process changes resulting from implementation of TIP technology;
- determining which business area will be responsible for ("own") the new Work Management System;
- analyzing the impact that increased technology will have on business units and develop a plan to obtain any additional resource needs;
- determining the feasibility (cost benefit) of modifying the IVR so customers can turn on services via the phone;
- implementing standards related to addresses;

and

- implementing processes and resources to provide reliable backup and recovery of GIS data.

This report includes management's planned actions to address or resolve each issue. The extent to which these or such other alternative resolution approaches are utilized by management will be addressed in our next report on TIP implementation activities. These issues are listed at this time for information and for management's further analysis and resolution.

Scope, Objectives, and Methodology

The Office of the City Auditor is providing assurance and consulting services to assist management throughout the implementation of TIP. As part of these services, we will be issuing a series of reports.

Our objectives are to:

- determine compliance with City policies and procedures and contract requirements;
- provide an independent assessment of risk management and project controls;
- report on the project status and accomplishments as of January 31, 2003; and
- communicate the status of previously identified significant issues, and any new issues as of January 31, 2003.

To achieve our objectives, we participated in a consulting capacity on the project team and executive steering committee, reviewed key documentation, tested transactions, and conducted interviews with selected members of the project team and executive steering committee. This audit was conducted in accordance with Generally Accepted Government Auditing Standards and the Standards for the Professional Practice of Internal Auditing, as applicable.

Background

Project Life Cycle

Every information technology (IT) project follows similar life cycle phases, such as:

Planning Phase – defining business problems, potential solutions, project scope, system interfaces, systems and software requirements, and resource needs. Other activities include identifying risks, costs and benefits associated with each solution, developing a project plan, and obtaining funding.

Acquisition Phase – developing a request for proposal and evaluation criteria, evaluating proposals, selecting a vendor, and negotiating the contract.

Implementation Phase – managing the vendor contract and project staff, installing software, defining business rules and processes, converting data, planning and performing testing, preparing technical and user documentation, and putting the system into production.

Post-Implementation Evaluation Phase – evaluating to determine if the system meets the users' needs and requirements.

This project involves multiple information systems including: Call Center Director (CCD), Interactive Voice Recognition (IVR), Work Management System (WMS), Outage Management System (OMS), Mobile Workforce Management (MWM), and an integration hub (also referred to as the "message switch"). Each of these applications, further described below, is expected to follow all of the applicable life cycle phases.

Project Description

TIP was formally initiated in summer 1999. The project's mission is to enhance the City's utility customer services by employing new technologies to manage operations more efficiently and effectively. It strives to develop and implement a seamless integration of the City's major automated systems with a suite of new utility applications. The project team consists of key staff from Information Systems Services (ISS), Electric Operations, Water Utilities, Gas Utilities, Utility Business and Customer Services, and consultants from Mainline Information Systems, Inc., and NCGi (Mainline/NCGi).

The project was suspended between February 2001 through November 2001 while Utility Services staff focused on implementing the utility billing application, Customer Information System (CIS). During that time, a new project manager was assigned to work on TIP.

In January 2002, the City Commission voted to give staff the authority to negotiate and execute a contract with Mainline/NCGi, a partner of Mainline, (referred to as Mainline/NCGi) a local IT consulting firm. Instead of contracting with Mainline/NCGi for all TIP components at once, the City negotiated individual statements of work to complete integral components one-at-a-time. Using state contract #973-503-00-1 as the basis for negotiations, Mainline/NCGi worked with the City to develop the four following separate statements of work totaling $1,072,000:

A. Call Center Business Process Evaluation – work with the City to fully review all business processes, customer requests, workflow requirements and communications needs.

B. Call Center Integration – collaborate with the City in the deployment of its Call Center, Interactive Voice Response system and Customer Information Center to manage operations and the handling of customer telephone calls more effectively and efficiently.

C. Development of an architecture for hub integration – develop a hub integration strategy that uses a standard messaging transport that will enable the City to grow and accommodate other applications as needed.

D. TIP / Convergent plan review – review the plan developed by the prior consultant and update/ revise the plan as needed to provide a new TIP plan and strategy for the City.

A fifth statement of work ($374,070) was negotiated in December 2002 to help the City establish and implement standard physical location data protocol, to develop work processes to ensure the data is kept current, and to insert location data in existing applications.

In the current TIP plan, the City is planning to implement the following components of TIP in this sequence.

1. A Call Center Director application has been implemented to assist Customer Services in managing customer calls. It allows for "smart routing" of calls based on representatives' skill levels. Calls can be routed to the appropriate persons without talking with an intermediary customer service representative (CSR).

2. An IVR application is in the process of being implemented. An IVR is an automated telephone answering system that allows callers to make choices and conduct selected transactions (turn off utilities, request service, etc.) via selections made by the caller either via the telephone keypad or voice recognition. The City is hoping that the combination of the Call Center Director and IVR system will assist the City in better serving the utility customers by streamlining calls and allowing those who wish to conduct business interactively the opportunity to do so.

3. The utilities are currently correcting GIS data and developing work processes to support the operations of the Outage Management System (OMS) and Work Management System (WMS). For example, each piece of utility infrastructure must be specifically identified by location in the GIS system. The GIS will then assist the OMS in troubleshooting outages by identifying where the faulty piece(s) of infrastructure could be located. To ensure the data is correct, a process must be defined and implemented to keep the GIS data current as changes are made in the field. This will directly affect the accuracy of an OMS and WMS system.

4. An OMS will be acquired and implemented. Staff will begin developing a Request for Proposal to request vendor proposals. The OMS will collect information from the CCD/IVR, Geographic Information Systems (GIS), and Supervisory Control and Data Acquisition (SCADA) system to help the electric control center identify where electrical problems are located and facilitate faster corrective measures.

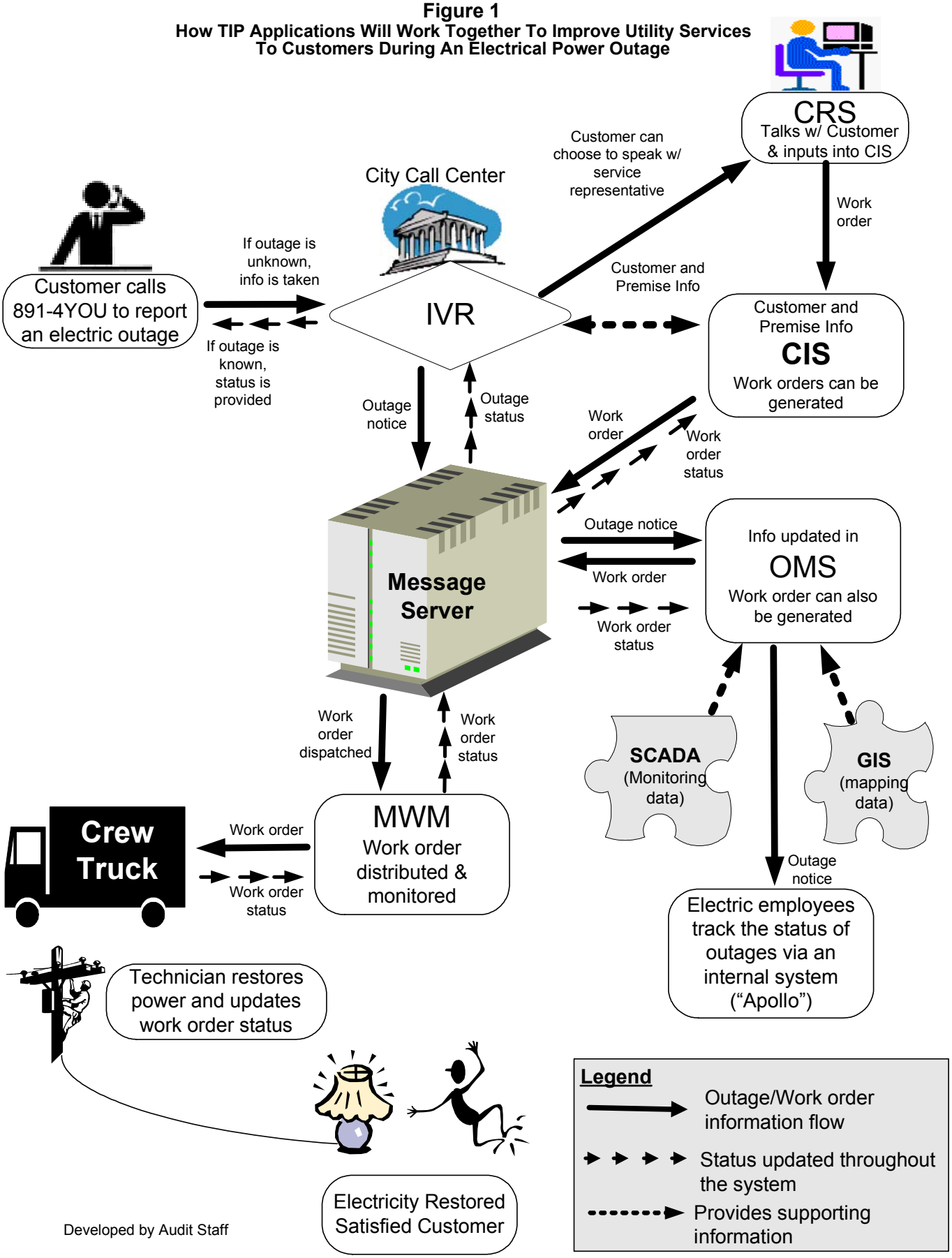
5. As part of the revised TIP plan, Mainline/NCGi recommended using the PeopleSoft Projects module as the City's Work Management System (WMS). Even though the Projects module is already owned by and installed at the City, the application must be implemented to meet the specific needs of the departments. This will require users to define requirements and processes and then set up the business rules and tables in the Projects module to meet those defined needs. Mainline/NCGi has submitted a proposed statement of work to assist the City in implementing the WMS, but as of January 31, 2003, the statement of work has not been accepted.

6. The City wants to acquire and implement a Mobile Workforce Management (MWM) application to dispatch work orders to field crews via a wireless transmission mode, such as the 800 MHz data system. Crews can receive work assignments and report the status back to the call center representatives and dispatchers while remaining out in the field. Workorders can originate from the CIS, OMS, or within the MWM.

7. Lastly, the City would like for all of these applications to be able to communicate and share common sets of data through a central "message switch." The TIP scope includes the integration of the CCD, IVR, OMS, MWM, CIS, GIS, and Apollo (an internal system used by Electric to track the reported outages and certain service requests). As part of the current Statement of Work C (above), Mainline/NCGi is working on designing the message switch infrastructure for the City that will enable these applications to share data with one another.

Figure 1 provides a basic illustration of how these TIP applications are intended to work together to improve utility services to customers during an electrical power outage.

Figure 1
How TIP Applications Will Work Together To Improve Utility Services To Customers During An Electrical Power Outage



Developed by Audit Staff

Project Status

Figure 2 identifies the major milestones for the project.

Figure 2

Month/ Year	Significant Project Milestone
Oct 1999	Project initiated and funded.
Dec 2000	A new ISS project manager was assigned to TIP.
Feb 2001	Contract with Convergent, Inc., was terminated (only $586,019 of the total $9,988,220 total contract was paid).
Nov 2001	Contract with Siemens Enterprise Networks (Siemens) to upgrade the telephone system to prepare for the Call Center and IVR implementations ($813,705).
Jan 2002	City contracted with Mainline/NCGi to complete four separate statements of work totaling $1,072,000.
Mar 2002	Call Center Director application was implemented.
Oct 2002	IVR implementation began.
Dec 2002	Mainline/NCGi began work on the 5th statement of work to help the City establish and implement standard physical location data pointers and develop work processes to ensure the data is kept current. ($374,070)
Jan 2003	IVR implementation was postponed while staff address problems with CIS post-implementation issues. Project expected to resume in March 2003.
Mar 2003	Anticipated completion date for defining GIS work processes.
Mar 2003	Anticipated date to begin implementation of Work Management System (PeopleSoft Projects Module)
Aug or Sept 2003	Anticipated Go-Live date for the IVR application.
Oct 2003	Verify and establish infrastructure connectivity with the converted GIS data.
Dec 2003	Anticipated Go-Live date for the Work Management System.
To be determined	Anticipated date to release RFP for Outage Management System.
To be determined	Anticipated Go-Live date for the Outage Management System.

At this point in time, TIP has multiple "mini" information systems in various project life cycle phases, as shown below in Figure 3.

Figure 3

TIP Information System	Project Life Cycle Phase
Call Center Software	Post Implementation
IVR	Implementation (about 30% completed)
Work Management System	Planning phase completed. Beginning implementation phase.
Outage Management System	Planning Phase in progress.
Mobile Workforce Management System	Planning Phase in progress.
Integration Software	Planning Phase in progress.

As of January 31, 2003, the project budget was:

Appropriations:	$6,689,546
Encumbrances/Expenditures:	$3,661,321
Available balance:	$3,028,225

The estimated recorded project completion date remains September 2003. However, the Work Management System is not expected to go live until December 2003, and it is not known at this time when the OMS will be acquired and implemented. Management has estimated a revised target completion date of May 2004, with the understanding that this date may change based on available resources or other unforeseen factors.

Assurances and Accomplishments to Date

In Table 1 below, we have summarized current relevant project components that have been completed satisfactorily (√), are still in progress (♦), or outstanding (**o**). As described in the project life cycle above, there are common activities conducted during each phase of an IT project. Some of these

activities are considered "good business practices," while others are required by City administrative policies and procedures, or by the vendor contract. Table 1 provides a listing of the planning components that were identified for this project, the status, and auditor comments (if applicable). The source of each required component is also provided.

Table 1

Phase II Components	Status/Comments
City Administrative Policies and Procedures (APP) #801, "IT Acquisition Policy"	
Management oversight: ⇒ An executive steering committee is utilized to provide project oversight. ⇒ The project manager reports regularly to the executive steering committee regarding the project status and advises the committee regarding critical business decisions that need to be made.	√ Executive steering committee exists. ♦ On-going. Last executive steering committee meeting was held on September 19, 2002. Audit Comment: Improvements can be made in this area by documenting meeting minutes to record key discussions and decisions.
Quarterly reports are submitted to the ISS Steering Committee.	♦ While the policy still states that the project manager should regularly report to the ISS Steering Committee, he was directed to regularly report to the individual project executive steering committee. Audit Comment: Improvements can be made in this area by the project manager providing regular updates and status reports to the executive steering committee. During 2002, the past year, the executive steering committee met three times, and these are the only times the project status has been reported to them.
Project Management Plan (PMP): ⇒ A project management plan (PMP) is utilized to manage the project. ⇒ The PMP is continually updated as necessary.	♦ There are individual project plans for each portion of the project, i.e., Call Center, IVR, standardizing the equipment ID, and standardizing the location ID. The plan is managed by the consultant using MSProject. The project manager also keeps a separate project plan in order to track all TIP related components with the various vendors. ♦ The project manager and vendors are updating the plan as changes occur.

Acquisition of each phase of the project: Negotiate contract with vendor, addressing (including, but not limited to): ⇒ Vendor's responsibilities and deliverables ⇒ Payment terms and dates (based on project schedule) ⇒ Acceptance criteria ⇒ Warranties ⇒ Ownership of hardware/software (licenses) ⇒ Access of source code ⇒ Cancellation options	To date, there are contracts with Siemens Enterprise Networks LLC for the Call Center and IVR and with Mainline/NCGi for Statements of Work detailed below. In both cases, State of Florida Contracts were used to procure equipment and services. √ Provided in proposals √ Provided in proposals √ Provided in proposal or statements of work √ Addressed in state contracts √ Addressed in state contracts o Neither contract specifies that the City owns applicable source code √ Mainline/NCGi contract does, but o IVR/Call Center contract does not
Implementation - Develop detailed plans with vendor to address items in updated PMP, including (but not limited to): ⇒ Responsibilities of all parties ⇒ System modifications ⇒ Data conversion ⇒ Testing ⇒ Installation ⇒ User procedures ⇒ System Documentation ⇒ Training ⇒ "Going Live" (In production)	♦ In progress. The only modules this applies to at this time are the IVR and the Service Point ID and Equipment ID sub-projects. There are project plans being utilized that employ the implementation sub-components as necessary for their respective work plans.
City APP #630, "Internal Control Guidelines"	
Execution of Transaction and Events – processing deliverables and contract payments	♦ On-going. The project manager is reviewing and accepting deliverables before payments are approved and processed.
There is direct activity management – including clear communication regarding team members' roles and responsibilities, staff accountability, approving work at critical points.	♦ On-going. The vendor assists the project manager in communicating agendas and meeting minutes to project team members. Audit Comment: Improvements can be made in this area by designating a functional project manager to work with the ISS project manager. This person would be responsible for managing the business side of the implementation efforts.
Top level reviews of actual performance vs. budgets and forecasts, and tracking major initiatives to measure the extent to which targets are being reached.	♦ On-going. This is the responsibility of the ISS project manager. Audit Comment: Improvements can be made in this area in that the project manager should develop a detailed budget; monitor encumbrances and expenditures on an on-going basis; and periodically compare the budget to actual.

Procurement Policy #242CP, APP #4.3, "Competitive Sealed Proposals," and APP #16.6, "Consultant Selection Procedures"	
Comply with all City procurement policies and procedures including:	
⇨ Procuring goods and services via the proper method such as state contract, phone quotes, written quotes, competitive sealed bid, competitive negotiation, etc.	√ To date, the project appears to have complied with these policies and procedures. All procurement of applicable goods and services has been accomplished through State of Florida contracts.
⇨ Obtaining the proper level of approval for all purchases.	√ To date, the proper level of approval appears to have been obtained for purchases.
Contract with Mainline/NCGi	
Statement of Work A - "Call Center Business Process Evaluation"	
⇨ Establish and document a Call Center call rating and skills resume matrix. ⇨ Document current call handling processes, including workflow and routing. ⇨ Document recommended refinements of these processes. ⇨ Document each center's utilization of available resources under their current operating environment. ⇨ Craft and document recommended changes to increase utilization. ⇨ Create and document a training plan for the City and instruction of new and existing users of the new call center and processes. ⇨ Author training documents to be used in training of City employees. ⇨ Produce a master document detailing the processes and scripts that need to be implemented in the Call Center Integration scope of work (Statement of Work B).	√ All deliverables for Statement of Work A were reported as completed by Mainline/NCGi, and the project manager has accepted the deliverables and approved payment.
Statement of Work B -"Call Center Integration "	
⇨ Conduct meetings with the City to identify the business requirements of the IVR and will document these requirements in a needs document.	√ Completed and accepted.
⇨ Research IVR products and identify a list of vendors to evaluate.	√ Completed and accepted.
⇨ *Write a detailed RFP and distribute it to the identified vendors.* ⇨ *Collect the RFP responses and read and provide a written summary and evaluation of each to the City.* ⇨ *Facilitate meetings as needed to review the RFP response summaries, organize vendor meetings and assist the City in making a final selection.*	*n/a - State contract was used. A change order was prepared to reallocate funds toward different deliverables.*
⇨ Conduct and facilitate discovery meetings; develop a project plan outlining the steps needed to meet the Call Center needs and business requirements of the City.	√ Completed and accepted.
⇨ Facilitate the vendor installation of the chosen IVR hardware and software.	♦ In progress.
⇨ Document the integration needs between the IVR and CIS, identifying the data that will be needed from the CIS system.	♦ In progress.

Statement of Work C – "Development of an Architecture for Hub Integration"	
⇨ Review the CIS application and its communication abilities with the City's CIS specialist, documenting areas where the CIS architecture can be leveraged to communicate with an integration HUB.	o Not started. This will need to be fully examined to ensure that CIS data is effectively and efficiently utilized in the hub.
⇨ Review the architecture of the IVR with the chosen vendor and document areas in the architecture that can support an integration HUB.	♦ In progress.
⇨ Review future requirements of the City and options detailed in the TIP review and plan update and document common needs or requirements to ensure the ability to integrate these items with the HUB in the future.	♦ In progress.
⇨ Define an open communication HUB architecture that will enable all components to work together through middleware or a common application program interface. This interface will be provided to the Call Center Integration Team who will write the components needed to facilitate communications between the IVR and CIS systems.	♦ In progress.
Statement of Work D – "Convergent Plan Review'	
⇨ Review the current Convergent plan and document areas that can be updated or revised to reflect new solutions.	√ Completed and accepted.
⇨ Research market options and document recommendations for their products effective in meeting needs identified by TIP.	√ Completed and accepted.
⇨ Facilitate meetings with various departments and individuals in the City to document the new processes and priorities.	√ Completed and accepted.
⇨ Update timelines and cost estimates where appropriate to reflect the new priorities of the City.	√ Completed and accepted.
⇨ Deliver a new IT plan and strategy to the City based on this information and the ongoing TIP effort.	√ Completed and accepted.
⇨ Provide documentation on the working of the integration solution.	♦ In progress.
⇨ Train staff identified by the City in the configuration and usage of integration solution.	♦ In progress.
Statement of Work E - "Service Point ID and Equipment ID, Work Management Project "	
⇨ Create a Conversion Strategy Document to convert the existing meter IDs to service point IDs and determine how to coordinate this effort with CIS.	♦ In progress.
⇨ Evaluate the data accuracy and develop a document that outlines the newly defined processes to ensure data integrity.	♦ In progress.
⇨ Develop and/or modify the GIS editing interface to provide a method of establishing spatial location of future service points in the GIS.	♦ In progress.
⇨ Create test and loading scripts to transport the service point ID data from the CIS to the GIS.	♦ In progress.
⇨ Develop future maintenance process and procedures for service point changes.	♦ In progress.
⇨ Develop a test and development environment for the next steps.	♦ In progress.
⇨ Produce and test a detailed plan for converting service point data.	♦ In progress.

⇨ Set up and prepare the production environment.	♦ In progress.
⇨ Develop a document that outlines any and all existing Department equipment ID and location ID processes.	♦ In progress.
⇨ Develop a labeling process plan to label all equipment IDs.	♦ In progress.
⇨ Develop a departmental gap analysis that identifies departmental differences in location ID processes and provide an evaluation on specific business and system needs.	♦ In progress.
⇨ Develop a location hierarchy and standards document to facilitate implementation of work orders.	♦ In progress.
⇨ Develop a conversion plan to outline how each department will create an asset model in the application.	♦ In progress.
⇨ Develop database standards and data loading scripts to convert new and existing data into the asset data model.	♦ In progress.
⇨ Prepare and oversee the "Go Live" to production.	♦ In progress.
⇨ Oversee the Production review period, document and resolve issues.	♦ In progress.
⇨ Develop a Master Document detailing the processes, methodologies, benchmarks and data quality reports.	♦ In progress.

Table Legend: ⇨ **Sub component** ♦ **In Progress** **n/a Not applicable** √ **Completed Satisfactorily** o **Outstanding**

In summary, we can provide assurances that TIP has complied with City policies and procedures and contract requirements except as stated above in Table 1; and that contract deliverables have been received and accepted before payment to vendors was processed. We have suggested areas where improvements can be made relating to budget monitoring, documenting executive steering committee meetings, management over the project management plan, and regular reporting to the executive steering committee.

Status of Significant Issues Previously Identified

The left column in Table 2 below provides those significant issues that remained outstanding from the prior progress report (#0130, issued July 2001). The right column provides management's actions, the current status, and auditor comments (if applicable). These issues, until resolved, will continue to impact TIP.

During the project, there have been many issues identified by the project team that will impact the project's success, and they were able to resolve many of these issues. However, there are some significant issues that still need to be resolved to ensure the successful implementation of the project. It is important to note that identifying and resolving significant issues are normal activities for every project team. If they are unable to resolve an issue, then they should educate the executive steering committee regarding the issue, recommend alternative solutions, and seek their guidance.

The extent to which these or such other alternative resolution approaches are utilized by management will be addressed in our next report on the progress of TIP. At this time, these issues are listed for information and for management's further analysis and resolution.

Table 2

Significant Issues Previously Identified (as of July 31, 2001)	Management Actions/Status
Call Center / Interactive Voice Recognition Systems	
Configuration and structure of City's customer services (utilities, all City functions, etc.) call center needs to be determined. City must decide whether to have: 1) a centralized call center location to answer all calls in one physical location; or 2) a decentralized call center where calls are made to one number, and are	√ Utility Services management feels this issue has been resolved. There is a "mixed consolidated/virtual" call center design. Three Solid Waste staff have been reassigned over to the Call Center and there is cross-training so that more staff can address more customer requests.

routed to numerous locations based upon customer need. This decision will impact staffing needs and reporting status as it relates to supervision, and could result in staff shifting either location or organizationally in order to best meet the needs of the call center configuration.	Management is also monitoring the call center call levels, skills, and distribution so they can train staff and rearrange call distribution as required to meet the customer needs in a timely manner.
Customer telephone data in CIS needs to be accurate for the IVR to work effectively. Customer telephone data in the current CIS (legacy application) is estimated by City staff to be approximately 30% accurate. This data has not been needed before but will be needed by the call center application and IVR to pre-identify the caller.	o The new CIS has been implemented, but the accuracy of the telephone data remains an issue. Management is aware and is planning to address this issue during the implementation of the IVR.
Outage Management System	
GIS electric data needs to be up-to-date in the City standard format for the outage management system to be effective. The electric GIS data had not been migrated into the City's standard GIS program, and therefore could not be used by other application systems. The OMS relies upon the electric GIS data to be able to identify outages so staff can manage repair work.	♦ Since the prior update, the electric GIS data has been migrated to the City's standard GIS format. There are three sub-projects currently in progress to address electric GIS data needed for the OMS to work effectively: 1) verify and establish infrastructure connectivity within the converted GIS data; 2) develop and implement a business process to ensure the GIS data is updated appropriately; and 3) incorporate a method to individually identify the location of each service point that would be consistent in the GIS and in CIS. Anticipated completion date for sub-project 1 is dependent upon several factors that are being evaluated during the testing phase currently in progress. Until further investigation and testing occur, we estimate a completion date of October 2003 for sub-project 1. Anticipated completion date for sub-projects 2 and 3 is March 2003.
Mobile Workforce Management System	
There is no overall plan for the future usage and maintenance of the City's 800 MHz radio/data channels. As the City plans to implement more technologies that use the 800 MHz radio or data system, there is no strategic plan for funding to acquire additional channels, licenses, maintenance resources, or management resources. Increased usage planned for departments within the City and by non-city agencies indicates that plans for the future are imperative.	♦ ISS is formulating a plan and considering all interested parties, projects, and other potential uses for the system. Anticipated completion date is Summer 2003. Audit Comment: There are other City projects in progress that involve wireless technology. We recommend that City management utilize a citywide committee to oversee all wireless technology projects to ensure that all City needs are being met and efforts are not duplicated.
The current IT implementation plan does not provide for project-related work order information collected in the MWM system to be shared with the Project Costing module in the Financials system. The work order information collected in the MWM will not be shared with the project costing information in the Financials system. For managers to analyze project work and costs, they will need to extract data from these two systems independently and use a separate database or spreadsheet application.	♦ A potential solution has been identified by utilizing the PeopleSoft Projects module as the WMS. Utility Services will need to evaluate the application to determine if it meets their business needs. If used, this will provide an easy integration of all PeopleSoft applications, including financials and human resources systems/modules.

Overall Project	
There may be duplication in system functionality and implementation efforts among concurrent system implementation projects, including CIS, Financials, MWM, and IVR. There are several cases where the system being considered contains functionality that currently exists in another City system. For example, the new CIS being implemented contains some call center, outage, and mobile work order functionality. The new Financials system being implemented contains some work order functionality. While the existing systems' functionality may not meet the business process needs, it should be fully evaluated for its potential value before additional funds are expended.	♦ Ongoing. ISS Project Managers are meeting monthly to discuss current projects, issues, and strategies. In addition, the TIP consultants have met with the CIS and Financials project teams to discuss the various systems' functionality, potential duplications, alternative solutions, and integration needs. ISS staff involved in TIP will facilitate these discussions.
Network security needed to be improved. During a prior assessment of the system architecture, it was reported that information security needed to be improved, including development and implementation of sound security policies and procedures; active monitoring of the network; and segregation of information security responsibilities.	√ Information security has been improved by ISS, in that ISS has developed and implemented security policies and procedures, implemented many network controls, implemented an information security group, and contracted to have periodic network security assessments. Audit Comment: We commend ISS for their efforts to improve network security and recognize that security remains an inherent risk to every project and the City's network.
It has not been decided as to how Utility Services will manage the business process changes resulting from the implementation of enhanced technology. The major technology projects in progress (i.e., CIS, TIP, Financials) encourage management to redesign business processes to obtain the available increased efficiencies. Management needs to determine how to implement their plan to address changes in business processes, employees' current and future job duties and skills, and needed training to provide employees these new skills.	♦ Management acknowledges this risk and is exploring alternatives to assist staff in changing business processes associated with the major changes related to implementing new technologies. Audit comment: Recent project implementations have demonstrated an increased need for effective staff training and communication in order to help them adjust to the sweeping business process changes associated with the new information technologies.
There is a risk that this project can be delayed due to the lack of technical and functional resources. The technical lead position on the project team was vacant, and there are other major technical implementation projects in progress affecting technical staff resources. In addition, the functional project leads for each of the applications being acquired and implemented for TIP are section supervisors with other Utility Services responsibilities.	√ A new project manager was assigned this project in December 2000, and there are functional project team members assigned to work on this project. In addition, the project manager has access to other project managers when their expertise is needed during the project. Audit Comment: There is still a risk in that there is not a functional project manager for the WMS to manage the business efforts of the implementation. We recommend that a functional project manager be assigned to manage and direct these business related activities and work with the ISS project manager.

Table Legend: ♦ **Currently being addressed – in process** √ **Resolved** ○ **Not currently being addressed – Outstanding**

In summary, of the prior nine outstanding significant issues, two have been resolved, with the remaining seven issues unresolved. These issues are listed at this time for information and for management's further analysis and resolution.

Table 3 lists five identified issues since April 2001. The left column describes the significant issues and the right column provides management's actions, the status as of January 31, 2003, and auditor comments if applicable). The unresolved issues will continue to impact TIP.

The extent to which these or such other alternative resolution approaches are utilized by management will be addressed in our next report on the TIP implementation. These issues are listed at this time for information and for management's further analysis and resolution.

Table 3

New Significant Issues Identified as of January 31, 2003	Management Actions/Status
Application and Data Ownership	
Ownership should be determined for the new PeopleSoft Projects module. The Projects module will function as the work management system (WMS) for the utilities, public works, and is available to all other City departments. During and after system implementation, business ownership of the application and its data is crucial. While ISS is the custodian of the application and responsible for its protection, the business owner is responsible for the application business rules and data integrity. At this point, there is not a business owner of the application.	o Management is discussing possible solutions to this issue, but the business owner of the application has not been identified at this point.
Technology Related	
Management needs to analyze the impact that increased technology will have on the business units in order to adequately plan for additional resource needs. Such impacts could include maintenance of mobile data computers, technology training for staff, shifting of workloads and responsibilities.	o Management will be conducting an analysis of the potential impacts the new technologies will have on the business units in order to develop a plan to mitigate the impacts.
Management should determine the feasibility of whether the IVR should be modified so that customers will have the ability to turn on utility services. Currently, utility customers can turn on utilities via the City web site. Customers are linked to a third party vendor to conduct the financial transaction. The Treasurer-Clerk's Office is currently responsible for managing the vendor processes and reconciling the daily transactions. There is a vendor cost associated to develop the interface for the vendor to accept payments via the IVR from both ends of the transaction (IVR and vendor payment acceptance). In addition, there is a risk that the Treasurer-Clerk's Office could change 3rd party providers. If that occurred, a new interface would need to be developed (at a cost) to meet the new vendor's requirements.	o Management will be conducting an analysis to consider all potential costs and benefits to the City in order to determine whether to provide this service via the IVR.

Standards for the use of addresses (home, business, etc.) will need to be defined and implemented across the different information systems in order to be able to share address data accurately. Currently, the PeopleSoft CIS Module, as installed by the City of Tallahassee, captures addresses in a format that is not consistent with US Postal standards and does not comply with current City standards. For the new outage management system to work effectively, the address format will need to be consistent across the various information systems that will share address data.	♦ To attain compliance, new tables are being created outside the PeopleSoft CIS application to capture addresses correctly. A New Data Entry Panel will be created to record the transactions in US Postal standards format. This address table will be used extensively by a number of applications including, but not limited to, TIP. A statement of work identifying the requirements and steps to comply with the address format is currently under way to resolve any outstanding issues. Expected completion of the address project is April 1, 2003.
Backup and recovery strategies for GIS need to be improved so that this data will be available 24/7 for other applications to be able to depend on this data. Per the TIP Implementation Plan, as revised by Mainline/NCGi, the City's "GIS hardware falls short of an industry standard environments for production servers" in that it is not configured so that it will be protected and available should power be interrupted. In addition, there is no formal written documentation to clearly delineate recovery procedures.	♦ Two new servers, one for testing and one for production, will host the Electric data. These servers provide 24/7 capability. Data from the temporary electric server has been loaded to a test server and is undergoing testing until early February 2003. Upon completion of a successful test period, the electric data will be loaded to production. The test server will provide local redundancy to the production GIS server. In addition, the City GIS Project Manager will work with City/County Interlocal staff to ensure written procedures are in place for backup and recovery.

Table Legend: ♦ **Currently being addressed – in process** ○ **Have not started** ✓ **Resolved**

Conclusion

This report communicates the project progress and accomplishments, as well as the status of the significant issues identified as of January 31, 2003. Our Office will continue to provide assurance and consulting services throughout the life of this project, and will focus on the appropriate project phase.

We would like to thank the TIP executive steering committee, project manager, project team, and consultants for their cooperation and assistance during the development of this progress report.

Appointed Official Response

City Manager:

I want to thank the City Auditor for his staff's participation and assistance in this project. Their advice and recommendations will ensure this important project is completed successfully.

This proactive approach of participation by the internal audit staff on our technology projects has been effective in ensuring we don't miss any critical issues throughout the project.

GLOSSARY

24/7	24 hours a day and 7 days a week
Apollo	Name of an internal application used to notify electric employees of outages
CCD	Call Center Director
CIS	Customer Information System
CSR	Customer Service Representative
GIS	Geographic Information System
ID	Identification
ISS	Information Systems Services
IT	Information Technology
IVR	Interactive Voice Recognition
MHz	Megahertz, this describes the transmission speed of the radio/data system (800 MHz)
MWM	Mobile Workforce Management
OMS	Outage Management System
PC	Personal computer
PMP	Project management plan
RFP	Request for Proposal
SCADA	Supervisory Control and Data Acquisition
SOW	Statement of Work
TIP	Technology Integration Project
US	United States
WMS	Work Management System

Copies of this progress report #0311 (Project #0204) may be obtained via web site (http://www.ci.tallahassee.fl.us/citytlh/auditing/audsumpg.html), request by telephone (850 / 891-8397), by e-mail (dooleym@talgov.com), by FAX (850 / 891-0912), or by mail or in person (City Auditor, 300 S. Adams Street, Mail Box A-22, Tallahassee, FL 32301-1731).

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