



Winston-Salem

*Information Technology Strategic Plan
For
Fiscal Years 2009-2011*

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1 Executive Summary

If we were to plot the rate of change driven by investments in information technology over the past 10 years, it would be characterized by an increasingly steeper curve. It is anticipated that this trend will continue into the foreseeable future, leaving us with the continuous challenge of choosing which future investments, amongst all the alternatives, are best for the City of Winston-Salem. The purpose of this Information Technology Strategic Plan is to ensure that we make intelligent choices that support the strategic objectives of the City. It provides a basis for choosing new I.T. projects over the 3 year period of FY 2009 through 2011.

This I.T. Strategic Plan was developed with the participation of City departments and takes into account dependencies between projects and other factors required for success. It starts by identifying the focus areas to be used for selecting projects. 6 Focus Areas are defined, and then used to measure gaps between current state of operations or services, and a future state that represents significant improvements. The 6 Focus Areas are:

Citizen Convenience
Smarter Government

Government Outreach
Knowledge Management

Disaster Recovery
Enhancing Productivity

Consideration is also given to the management and governance of the City's information technology infrastructure. As city services become even more dependent on technology, it is critical that there be an efficiently managed infrastructure capable of supporting department needs.

It is not as important that all of these projects are completed over the next 3 years, as that we complete those projects that best serve our community. This plan is structured so that progress can be measured within each of the Focus Areas and that final decisions on new funding can be decided through the annual budget process.

Introduction

Changes driven by information technology over the past 25 years have dramatically changed the way government operates. Automation has reduced labor costs, analysis methods have changed the decision making process, electronic access provides greater conveniences, and new communication methods enable more efficient business processes. The City's ability to improve through advancements in information technology has been limited more by the organization's ability to accommodate the changes than factors such as direct costs or staff skills. Management's challenge is to satisfy the overall change rate expected by the community by shortening the time associated with city departments identifying best practices, developing plans, approving funding, and implementing successful solutions.

The goal of I.T. strategic planning is to ensure effective and efficient use of information technologies through a methodical process that aligns the priorities of the organization

with I.T. investments. Excellent planning significantly reduces the time associated with obtaining approvals by establishing management's confidence that the proposed investments are consistent with the City's priorities, are worthy selections, and are likely to satisfy the business objectives. A three year planning horizon is used to show how investments will work together while staying within a predictable period of time.

This I.T. Strategic Plan provides a three year plan for the major technology investments for all City departments. It shows the relationship between the priorities as defined by City management and the expected benefits expressed in terms of operating efficiencies and new or enhanced services. The process used for developing the plan included participation of senior staff throughout the City. Upon final acceptance, the Plan should be used as a guide for the annual budget process in selecting I.T. investments.

2 Investment Goals and Requirements

New investments in information technology are categorized into improving the quality of services and delivering existing services more efficiently. Quality of services is about providing an excellent customer experience by making it convenient, timely, and efficient. The goal is to utilize maturing technologies to improve existing services and create new services consistent with community expectations. The challenge is to deliver quality services as cost effectively as possible. New investments in information technology are evaluated to determine if there is a sufficient direct or indirect return on investment to justify the expense.

Focus areas for I.T. investments are organized according to quality of services and efficiency initiatives. This organization is then used to identify and recommend further investments.

2.1.1 Improving Quality of Services to the Public

Three categories are recommended for selecting I.T. projects that will improve quality of existing services or deliver new services.

Focus Area 1. Citizen Convenience

Any City service that can be provided electronically should be available through the Internet and the City's Home Page. Many services are available today, but there are still a large number of services that are not available through the web and should be made available for self-service 24 hours per day.

Focus Area 2. Government Outreach

It is the government's responsibility to keep the public informed about items that may be of individual importance. This has historically been accomplished through a combination of newspaper advertising, media coverage, and posting of signs. Rather than these types of broad disseminations, direct distribution through the Internet enables personalized disseminations. Relevant information can be distributed directly to the interested person in a timely manner using a process where individuals register for topics of interest.

Focus Area 3. Disaster Recovery

A natural disaster or major loss within the data center could interrupt City services for an extended period of time. Some computing capabilities are maintained in a secondary location, but are insufficient to maintain most services. Information technology disaster recovery capabilities should be aligned with the City's business continuity strategy to ensure continued services when they may be needed most.

2.1.2 Operate Effectively and Efficiently

Three categories are recommended for I.T. investments that are expected to improve operational efficiencies. Some will have immediate payback while others are an important step in moving the overall organization forward.

Focus Area 4. Smarter Government

Internal support systems use electronic distribution and on-line information to efficiently communicate with staff. These systems continue to be duplicated with manual or paper processes in order to serve staff that do not have access to the City network. These duplicate processes could be eliminated if all staff used the electronic systems. Substantial efficiencies would be gained through a smarter workforce fully participating in the City's electronic support systems.

Focus Area 5. Knowledge Management

A great deal of information is maintained in City databases. This information is typically raw data limited in use for which it was originally collected. Expanding use of the data to include analysis across systems leads to greater knowledge and better decisions. Common elements across data sources like name and address can be used to develop a more complete view of citizen's interactions with the City. Common elements can be analyzed to identify important relationships that assist in financial management and to enforce dependencies across service areas.

Focus Area 6. Enhancing Productivity

Productivity is enhanced when information technology automates manual processes enabling available resources to be allocated to new work; when it speeds up processes through electronic communications; and when it enables business processes to be made more efficient. Opportunities exist in the City where information technology is already in place but productivity enhancements have not been fully obtained. Further productivity can be achieved through some combination of process, technology, or resource allocation changes.

3 I.T. Assessment

An I.T. assessment provides recommendations for achieving a defined set of objectives. For the purpose of developing an I.T. Strategic Plan, the first step in selecting areas for investment is to determine the current level of services for each of the five Focus Areas. This is then compared to the vision of how improved services could be delivered, with

consideration to cost and other resources. Once the gap between current level and desired levels of service are understood, then a plan is developed to include recommendations that move the City closer to the objective.

Focus Area 1. Citizen Convenience

Current State: Many City services can be obtained via self-service through the web. Web based services provide the most convenient means at the lowest cost to the customer and to the City. Significant web based services include:

- Payments of water bills
- On-line service requests
- Building Permits
- Employment

Vision: Any service that can be provided through the Internet should be available through the City's Home page. Significant web based services that could be made available are:

- Reserving Recreation facilities
- Web payments for all City services
- Online submission of building plans

Focus Area 2. Government Outreach

Current State: There are two methods by which the City can electronically contact citizens. All businesses and residences with published telephone numbers within a selected geographic location can be notified through a 'reverse 911' system that delivers a voice message to the designated telephone number. Through MyCityofWS, anyone with an e-mail address can select topics of interest and be notified when a new article is available on the City's web site that matches selected items within their profile.

Vision: Citizens can sign up to receive notifications via email on new content related to City services. This would include items in any data source that is identified as having relevant information. Permits, zoning, crime, streets, utilities, and recreation all have activities that are of interest to different groups of citizens. Selection can be based upon a combination of content type and geographic location, where notifications would only include activities occurring within a selected radius of a preferred location. Citizens or businesses would then be notified via email in a timely fashion about selected City related activities occurring near them.

Focus Area 3. Disaster Recovery

Current State: Computing resources are maintained in a secondary data center located in City Yard. There is sufficient capacity to provide e-mail, limited Internet access, and some Financial application support. Most application data is copied to this location and there is the ability to recover all data from backup tapes. Recovery of applications used by departments would take several days and limited by the number of available computers. No plans are in place to support desktop computer capabilities in the case of a disaster that required relocation of staff from City Hall or Bryce A. Stuart building.

Vision: A proven and tested disaster recover strategy would be in place to support the City's business continuity strategy. A risk analysis study would identify City services that are important enough to justify an investment to ensure continued operations in the case of a disaster. Staff would be trained to know what to do in the case of a major loss and facilities would be identified for relocation that could be supported with network and computer services.

Focus Area 4. Smarter Government

Current State: No manual processes for distributing and communicating information to staff have been completely replaced by electronic processes. Electronic memos are printed and posted, paper flyers are distributed with payroll checks, and HR staff assist in benefits enrollment. Timely delivery of information occurs only to a portion of staff, and many staff are not able to participate in on-line activities such as surveys, or access City benefits like retail discounts.

Vision: All City employees have personal e-mail accounts and voice mail. Kiosk computers are conveniently available to employees who do not have assigned computers in order to access e-mail, the Intranet, and the web. Voice mail messages can be accessed from home or work. Manual distribution processes are eliminated and information for employees is distributed only through e-mail, the Intranet, or voice mail. This would include payroll receipts and any other document that can be legally distributed in an electronic format.

Focus Area 5. Knowledge Management

Current State: Departments maintain customer information within their software applications. The data is developed and maintained independent of data within other applications. Common information such as name and address is duplicated across systems with inconsistent standards. It is difficult, and in many cases impossible to share relevant data across systems. Customers can obtain a refund from one department while owing money for another City service. Permits can be granted without knowing pertinent safety conditions that may be available in other information systems.

Vision: Information from disparate systems is accessible for reporting and analysis. Standard methods for recording customer address, customer name, and property information is used in all support systems. There is a common view of all information related to a particular address or individual. Customer balances across all City accounts can be generated on demand. All known information on any property can be obtained to determine compliance, or for an investigation.

Focus Area 6. Enhancing Productivity

Current State: Most City employees whose primary work is outside of the office typically obtain work assignments by starting at a main city office location. Any support information such as maps or customer data is carried with the employee in paper form. Information collected in the field is written on paper and upon returning to the office the

information is keyed into a computer application. During the day the employee may return to the office to pick up directions for new work or to obtain additional support information. Some departments have computer access in the field or at the job site, but still return to the office on a daily basis.

Paper based methods are used by City staff for receiving and reviewing materials from businesses. This includes plats and design drawings that are reproduced by staff for review and comment. Copies are carried into the field as required for the work assignment.

Vision: Employees are able to work throughout the City with direct access to required support information and work assignments. Many staff visit the office only for weekly meetings or for scheduled appointments. All support materials are received into the City in electronic form and distributed electronically for review, comments and approval. Electronic documents are delivered to mobile devices and data is entered into the same devices by staff in the field. E-mail, voice communications, and automated vehicle location (AVL) systems are used as supervision and management tools. There is no dedicated office space for staff that work predominantly in the field.

4 I.T. Management Strategy

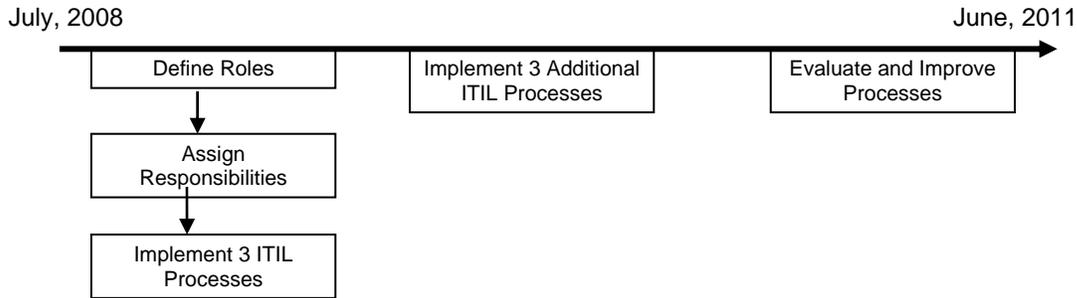
The City's information technology management practices must continue to improve in order to effectively deploy and manage new technology solutions. Improvements will result from a process that starts with guiding principles aligned with the Focus Areas. Staff and organizational development activities are then identified to achieve specific goals and objectives. These activities should occur in parallel to developing new I.T. projects as an on-going continued improvement process.

4.1.1 Guiding Principles

Effective growth in the use of information technology requires a set of principles that guide management methods, selection and enforcement of technical standards, and I.T. organizational oversight. Principles set the framework within which operational decisions are made to ensure efficient development of improved City services through information technology investments. Three guiding principles have been identified as key to achieving the visionary state of the Focus Areas. These principles are:

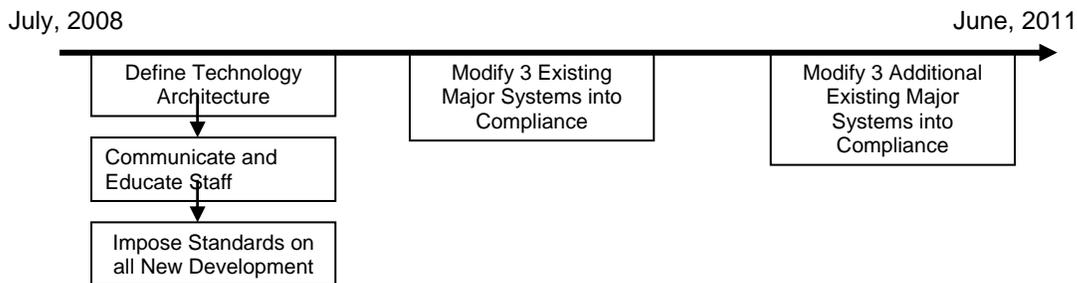
1. Establish an industry best practice for enterprise systems management

It is recommended that all information technology system management follow the best practices as defined in the Information Technology Infrastructure Library (ITIL). ITIL defines processes for handling incidents, deploying new technologies, securing access, managing changes, and planning for growth. Over 50 City staff have been certified in the first level 'foundation' of ITIL. A plan should be developed to deploy ITIL processes consistent with the principle that an industry best practice be established for enterprise system management.



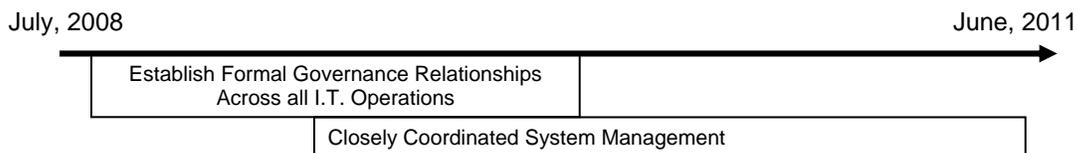
2. Require consistent technical standards across all technology platforms

Consistent technical standards make it practical to share information across disparate systems. Historically, I.T. solutions have been selected based upon preferred functionality without consideration to technical standards. This has created an environment where it is difficult to share data or find common information across systems. Future integration across business systems depends upon following a principle that requires strict technical standards be used for selection and development of systems.



3. Further the integration of disparate I.T. management functions

Technology solutions are increasingly more complex as they further integrate multiple data sources and cross operational boundaries. Quality services require closely coordinated I.T. management activities following consistent practices across divisions and business functions. I.T. staff residing outside the central I.S. organization must work closely with the central staff. Emphasis should be on excellent communications with shared goals between I.S. and other departments at the staff and supervisory levels.



5 Plan Implementation

The I.T. Strategic Plan is intended as a road map for investments to support the strategic objectives of the City. Included in this road map are potential investments in technology, people, and processes that will contribute to the five Focus Areas. The

recommendations include complex I.T. projects, new or modified policies to support changes in business processes, and purchase of tools to enable new capabilities. During the implementation period, new opportunities will be discovered which should also be considered.

Ideally, all of the projects would be funded and approved. Since funding must compete with other priorities in the City, a final decision on which of the investments will be approved should occur through the annual budget process.

Information Systems will develop implementation plans based upon approved spending and will work with departments to define schedules consistent with the overall plan's objectives. Progress against the plan will be reported annually, recognizing that circumstances in addition to available funding may adjust priorities.

5.1.1 Governance

Recommendations for support of the strategic plan in the annual budget process will occur through the I.T. Steering Committee review process. The review will consider other technology related requests and final recommendations for funding will be made to the Budget Office and City Manager's Office. It is the responsibility of the Chief Information Officer to periodically report to the Steering Committee and City Manager on the progress against the plan.

6 Recommended Investments and Implementation Schedule

Departments participated in an assessment to determine their business priorities and information technology requirements over a three year period. This was combined with information management best practices to develop recommended I.T. investments that will achieve progress within the five Focus Areas. High-level I.T. projects were then defined to determine the resource requirements, dependencies, and delivery-time requirements.

The resulting initiatives are organized into new programs and scheduled with consideration to dependencies. The speed with which development can occur will be limited by the availability of funding as determined in the annual budget process, and the organization's capacity for change.

Proposed I.T. Projects are listed in Appendix I by Focus Areas with a prescribed order of implementation. Appendix II is a visual representation of the projects along with their relationship with I.T. Management Strategies.

Appendix I: Projects by Focus Area

<i>Focus Area 1 - Citizen Convenience</i>			
Project Name	Description	Benefits	Fiscal Year(s)
Electronic Plan Review	Electronic submission and review of development plans	Citizen convenience, staff efficiencies	FY 2009-11
On-line Recreation Services	Through the Internet, sign-up for classes, reserve facilities, pay for services	Citizen convenience, staff efficiencies	FY 2009-10
On-line Payments for all Invoices	Payment of parking deck spaces, bulk container pick-up, Housing services bills, and other general invoices.	Citizen and business convenience, staff efficiencies	FY 2009-10
IVR Support for Parking Tickets and General Invoices	Citizens and businesses can make payments 24x7 through the telephone	Citizen and business convenience, staff efficiencies	FY 2009

<i>Focus Area 2 – Government Outreach</i>			
Project Name	Description	Benefits	Fiscal Year(s)
MyCityofWS Expansion <ul style="list-style-type: none"> • Zoning changes • Crime data • Building Permits • Entertainment • Recreation • Road closures • Newsletters 	Register and receive notifications on subjects of interest or related to a location.	Timely notification to Citizens on topics of personal interest. Cost effective communications method.	FY 2009-11
Self-service Housing Inspections	Citizen performs inspection of residence and reports findings to the City through an on-line form.	Relief from fines and time to repair. Improved neighborhoods.	FY 2010

<i>Focus Area 3 – Disaster Recovery</i>			
Project Name	Description	Benefits	Fiscal Year(s)
Risk Assessment Study	Identify acceptable periods of time for a City service to be unavailable in the case of a disaster.	Establishes priorities and justifications for investment decisions.	FY 2009
Develop Disaster Recovery Plan	Define technology solution that would satisfy the findings of the Risk Assessment Study.	Establishes a plan for recovery during a disaster.	FY 2010
Implement Disaster Recovery Plan	Purchase, deploy, and test the technology solution defined in the Disaster Recovery Plan.	Ensures that the plan can be executed successfully in the case of a disaster.	FY 2010

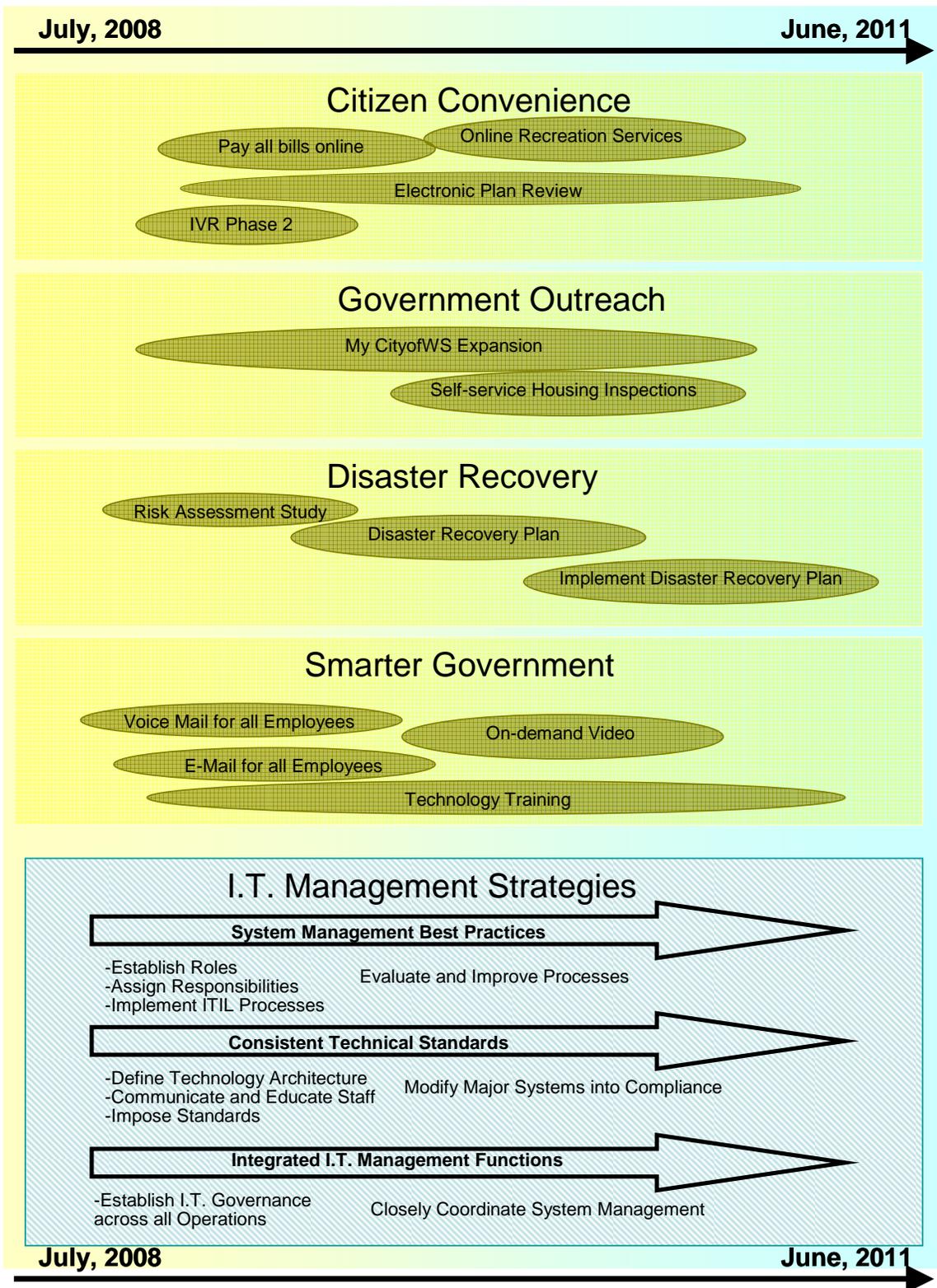
<i>Focus Area 4 – Smarter Government</i>			
Project Name	Description	Benefits	Fiscal Year(s)
Voice Mail for all Employees	Voice mailboxes are assigned to all employees	Increased likelihood of reaching employee. Ability to distribute by defined groups. Reduction in use of paper.	FY 2010
E-mail for all Employees	Email accounts are assigned to all employees	Better informed staff. Reduction in use of paper. Establishes structure for new processes: ex: electronic check stubs	FY 2010
Technology Training	Basic computer literacy courses	Expanded use of electronic systems.	FY 2010-11
On-demand Video	A library of on-line videos to include staff presentations on department operations.	Staff are more knowledgeable on the operations of other City departments.	FY 2010-11

<i>Focus Area 5 – Knowledge Management</i>			
Project Name	Description	Benefits	Fiscal Year(s)
Master Address Database (MAD) Integration	Business systems validate against MAD when entering addresses	Enables access of common data across systems.	FY 2009-10
Consolidated Billing	On-demand account balances across business systems	Increased revenue collections.	FY 2010-11

<i>Focus Area 6 – Enhancing Productivity</i>			
Project Name	Description	Benefits	Fiscal Year(s)
Capital Planning Management	A software application supporting request submittals, project tracking, and on-demand reporting.	Improved management decisions based upon accurate information.	FY 2009-10
Performance Management Reporting	Dashboard presentation of performance for all departments and services	Awareness of problem areas, data for setting priorities, improved reporting.	FY 2009-10
Human Resource Management System	Integration of existing and new application support systems	Greater efficiencies and improved services to departments.	FY 2009-10
Integrated Security Systems	Consolidated access control systems including network, buildings, and parking	Reduced costs to manage and deploy. Employee convenience.	FY 2010-11
Telework Program	Approved employees can work from home	Reduced costs, greater productivity, improved staff retention.	FY 2010
Automated Vehicle Locator (AVL)	Real-time tracking and logging of location of mobile staff.	Improved productivity through effective assignments. Greater staff accountability.	FY 2009-10

<i>Focus Area 6 – Enhancing Productivity</i>			
Project Name	Description	Benefits	Fiscal Year(s)
Workflow Expansion	Electronic approvals for purchasing cards, request for checks, and trip number.	Reduced spending through better controls, labor savings, and more efficient operations.	FY 2009-10
On-line Vendor Bids and Submissions	RFPs are distributed and bids received via the Internet	Increased businesses participation, staff efficiencies	FY 2010
Unified Communications	One interface to employee communication across voice and data platforms.	A single interface for communicating through e-mail, land phone, cell phone, pager or radio.	FY 2010-11
Mobility Solutions	Deployment of support applications on mobile devices.	Reduced costs and improved services by eliminating travel time and duplicate systems.	FY 2009-11
Electronic Document Imaging Expansion	Converting paper to electronic images in Inspections and Planning.	Wider access for staff and citizens with easier, on-line retrieval	FY 2009-11
Recreation Management System	Management system to support Recreation services. Includes reservations, sign-up, payments, and reporting.	Reduces costs, greater accountability, and improved services for citizens.	FY 2009-11
Property Maintenance Management System	Management system to track labor, maintain facilities, and perform financial reporting.	Improved facilities maintenance and financial management.	FY 2009-11
'Green' Initiatives	Select energy-efficient computer technologies. Initiate programs that conserve power used by computers and network.	Reduced electrical costs and support environmentally friendly solutions.	FY 2009-11
Aerial and Ortho-photographic Update	Updated aerial photographs tied into GIS.	Decisions based upon accurate representations of structures and land development.	FY 2009-10

Appendix II: Project Schedules by Focus Areas



July, 2008

June, 2011

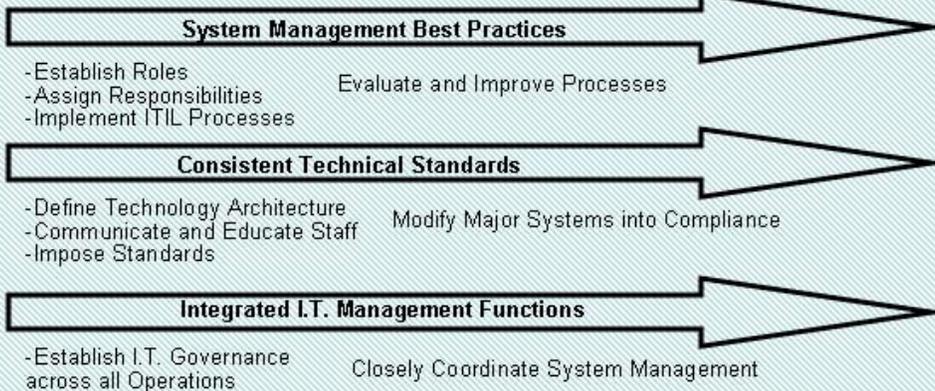
Knowledge Management



Enhancing Productivity



I.T. Management Strategies



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