



INFORMATION TECHNOLOGY MASTER PLAN

REPORT

MARCH 2013

Presented to Danielle Garcia, Interim CIO
City of Redlands
DoIT

by

CLIENTFIRST
TECHNOLOGY CONSULTING

TABLE OF CONTENTS

ENGAGEMENT PURPOSE & BACKGROUND.....	3
Project Objective.....	3
Methodology and Approach	4
CURRENT STATE OF INFORMATION TECHNOLOGY	5
Summary IT Environment.....	5
Key Statistics & Metrics	6
IT STRATEGIES, GOALS & OBJECTIVES	10
INFORMATION TECHNOLOGY (IT) PRINCIPLES	13
IT INITIATIVE SUMMARIES	14
Introduction.....	14
IT Initiative Categories	14
Best Practices	15
Applications / Departmental Systems	17
Gov 2.0 (E-Government)	19
IT Infrastructure	20
IT Operations	22
IT Security.....	23
IT Staffing	24
Telecommunications.....	24
KEY ISSUES	25
Infrastructure	25
Customer Service and Staffing	26
Metrics and Measurement.....	27
Application Utilization	28
Data Integrity	30
Governance	31
CONCLUSION.....	33
Moving Forward	33
Benefits.....	35
Immediate Next Steps.....	35
IT MASTER PLAN CAPITAL BUDGET.....	36
APPENDIX – IT MASTER PLAN INITIATIVES	37

ENGAGEMENT PURPOSE & BACKGROUND

PROJECT OBJECTIVE

The City engaged *CLIENTFIRST* Technology Consulting to develop an Information Technology (IT) Strategic Master Plan. The intention is to guide the organization over the next five years in planning, procuring, implementing, and managing current and future technology investments and resources related to Information Services provided by the City of Redlands. The plan involved a thorough analysis of the following:

- A comprehensive assessment of existing technologies and staffing that will highlight current strengths and weaknesses
- Recommended projects
- Cost estimates
- Prioritization of recommended projects
- A proposed implementation plan to be incorporated into the Capital Improvement Plan process for FY2012 through FY2017 and annual budget deliberations. The implementation plan must take into account the current IT staffing level and budgetary considerations.
- Recommendations for cost savings, effectiveness and sustainability

Information Technology Assessment and Master Plan (IT and Telecommunications Consulting Services)

The IT and Telecommunications Consulting include the following types of services: cost and financial analyses, recommendation of information systems and telecommunications systems management solutions.

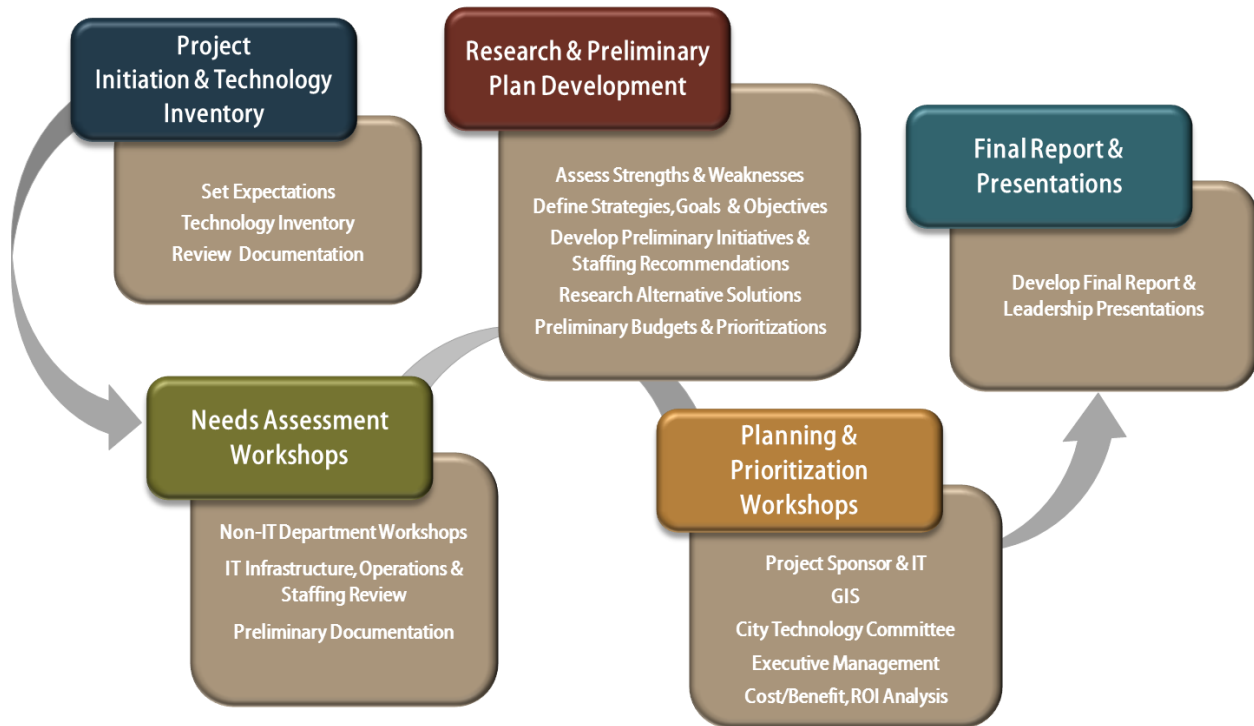
Examples of expected services:

- Document and assess the current condition of the City's IT and Telecommunication
- Prepare an analysis of the City's IT and Telecommunication needs and develop an action plan that addresses the concerns, if found, and recommend corrective actions
- Recommend a strategy for the City with potential interim steps or phases for implementation based on the current condition survey mentioned above
- Provide expertise to identify opportunities for integration and economies of scale across systems and/or organizations through the development or creation of enterprise architecture
- Evaluate current and emerging technologies and assist agencies with planning the tactical and strategic migration of business services to these technologies
- Develop IT strategic plans that align City business and technology plans with City business technology, goals and objectives



METHODOLOGY AND APPROACH

We have developed a five-phase methodology upon which we base our IT master planning projects. While this serves as the cornerstone of the project, allowing the collaborative process to shape and develop our recommendations and approach will enable us to tailor each step to fit your unique specifications. We desire to work in partnership with you to improve the City's information technology environments so they can better meet the needs of your staff and constituents.



CURRENT STATE OF INFORMATION TECHNOLOGY

SUMMARY IT ENVIRONMENT

IT Staff (FTE Equivalent)	9
City Employees	479
PC's	Approx. 325
Laptops	Approx. 50
MDCs (Public Safety)	Approx. 35
Tablets	Approx. 94
Telephones	Unknown
Cellular Phones	Estimated 150
Total Servers	Approx. 68
Network Devices	23
Platforms	Windows, AIX
Databases	SQL, PICK
Citywide software applications/modules	Over 150
Avg. Reported Help Desk Tickets per Week (w/o Oracle Financials)	Unknown
Closed 24 Hours	Unknown
Closed 48 Hours	Unknown
Closed 72 Hours	Unknown
Average Resolution Time	Unknown
Average Open after 7 Days	Unknown

KEY STATISTICS & METRICS

The following analysis provides feedback on three key measurements regarding IT operations:

IT Budgeting/Expenditures	IT spending vs. Revenue Fund budgets
IT Staffing Resources	Overall IT staffing vs. key equipment counts
IT Capital Replacement Schedules	Equipment replacement schedules for major IT items

These measurements provide indications of issues that may affect the organization's IT effectiveness as it relates to providing IT support of systems and application solutions.

IT spending versus revenue fund budgets provides an overall indication of whether the IT function receives a sufficient level of organizational resources to provide the necessary services. Underfunding over time typically reduces IT's ability to respond to requests, reduces system availability and negatively impacts organization-wide productivity.

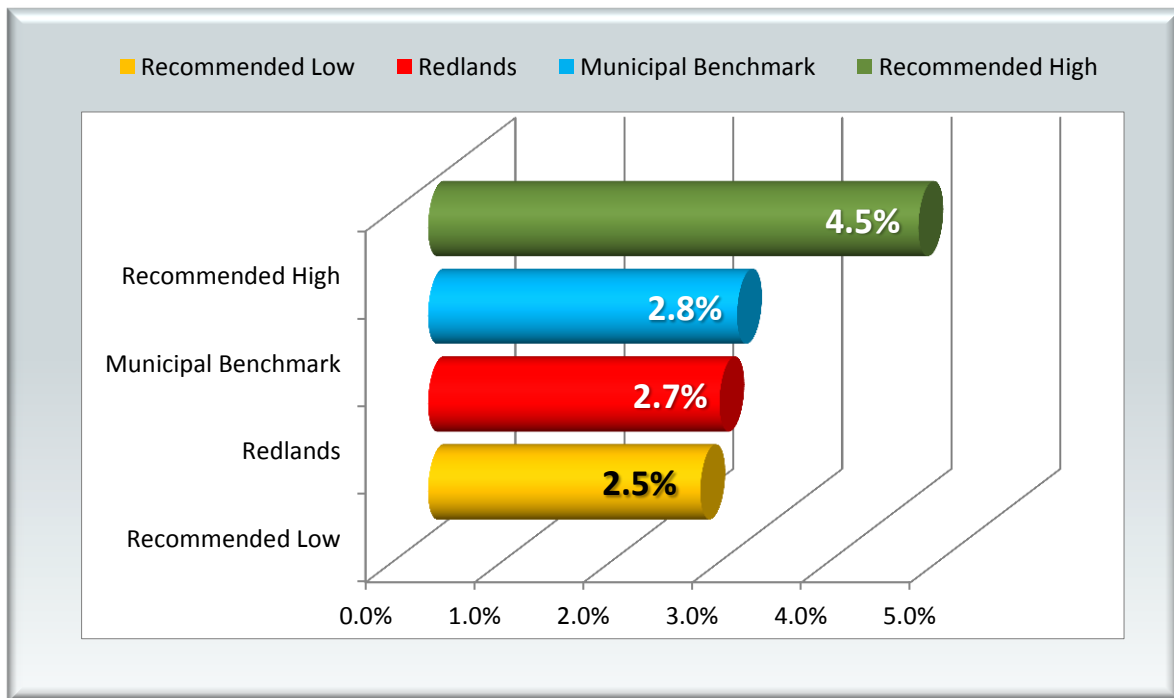
IT staffing levels versus servers, PCs and the total number of logins is often a reflection of IT staff productivity. With the proper productivity tools, an individual IT staff member can support more users, reducing overall costs.

Capital Equipment Replacement is an important measure of the ability of hardware to support adequately the ongoing vendor changes to application software. These changes often require hardware that is more robust and additional resources. Slow capital replacement cycles can result in increased downtime and slower system response times overall.

IT Spending versus Revenue Fund Budgets

The following table depicts Redlands’s IT Spending versus Recommended Best Practices and a Municipal benchmark of 29 agencies. These agencies responded to a survey and are from Illinois, California, and Wisconsin.

Redlands	Recommended Low	Municipal Benchmark	Recommended High
2.7%	2.5%	2.8%	4.5%



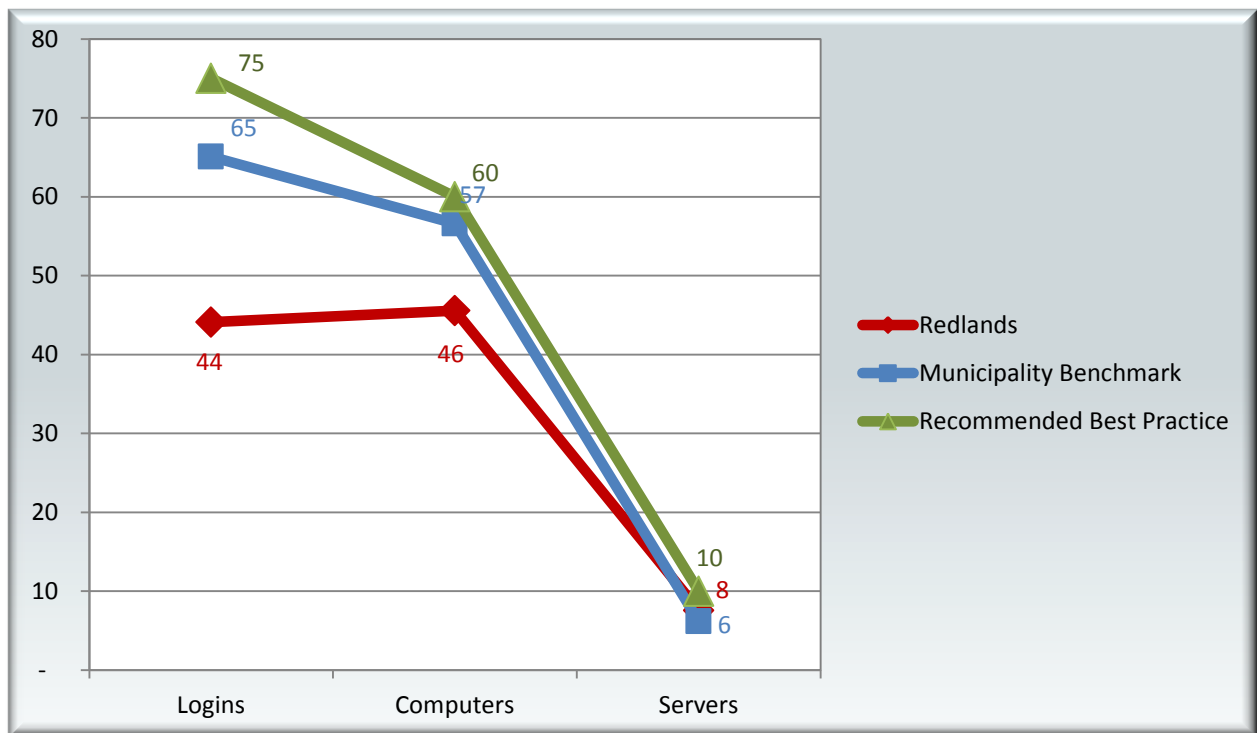
The 2012/2013 adopted budget, general and enterprise revenue funds were \$99,429,217 and the IT expenditure budgets total of \$2,666,462. The municipal spending benchmark range was between 1% and 8%. The percentage of IT expenditures versus revenue fund budgets at Redlands is near the recommended low. We understand that additional funding may not be forthcoming; therefore, it will be imperative to develop a sustainability plan that provides realistic resource allocation. Greater funding should result in increased productivity at the department level.

IT Staffing Ratios

The following table depicts Redlands’s IT Staffing Ratios versus a Municipality Benchmark of 37 similar agencies. These agencies responded to a survey.

	Redlands	Municipality Benchmark	Recommended Best Practice
Logins	44	68	75
Computers	46	58	60
Servers	8	6	10

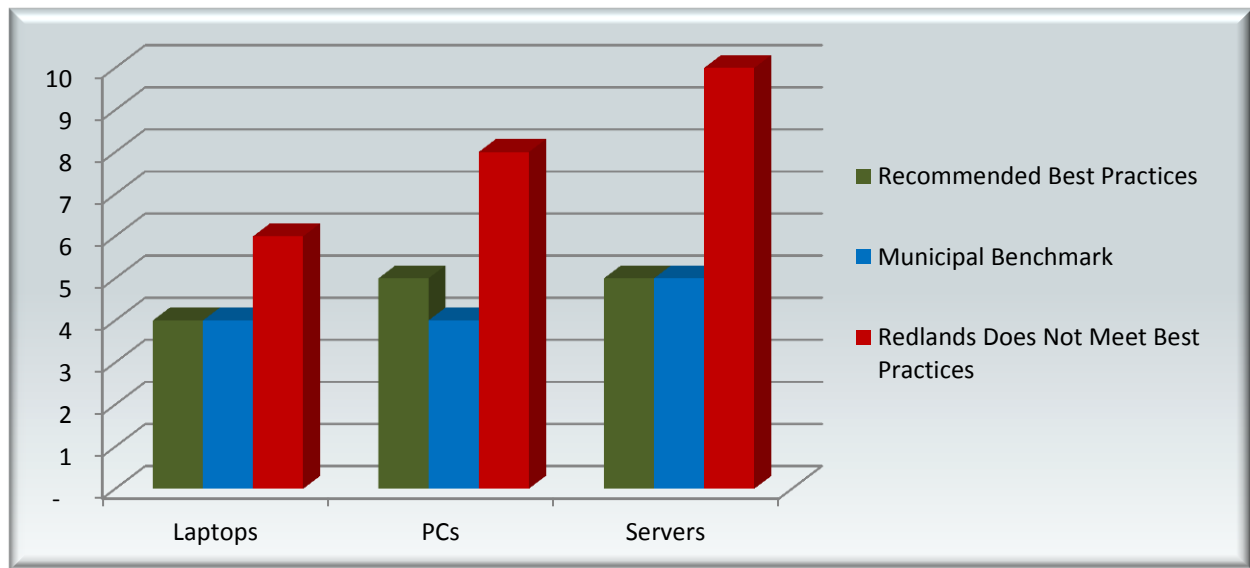
In this comparison, the City’s staffing ratios for users, computers and servers are less efficient than their peers (i.e., supporting less users and devices per IT staff) and recommended best practices. As a part of our review, we did uncover many areas in which the City could expect to have significant productivity improvements for these benchmarks.



Equipment Replacement

The following table depicts Redlands’s primary IT equipment replacement practices versus Recommended Best Practices and a Municipal benchmark of 36 agencies. These agencies responded to a survey and are from California, Illinois, and Wisconsin.

	Redlands	Municipal Benchmark	Recommended Best Practices
Laptops	6	4	4
PCs	8	4	5
Servers	10	5	5



Unfortunately, the City continues to utilize laptops, PC’s, and servers longer than best practices recommend. Issues with extending utilization of laptops, PC’s, and servers include:

- A higher failure rate after four and five years of productive life
- Laptops are less powerful than desktops and, therefore, tend to run newer software more slowly
- Battery life decreases with age

Many of our clients have moved to a five-year replacement plan for PCs due to reduced capital funding.

IT STRATEGIES, GOALS & OBJECTIVES

The strategies for leveraging information systems to deliver City services are listed below. Within each strategy, we have listed initial goals and objectives for the City. We have translated those goals and objectives into specific initiatives in the *Appendix* of the report. Additionally outlined later in the report, are the budgetary costs for each initiative, resource requirements, implementation timeframe, and, if appropriate, the next steps toward implementation.

MODERNIZE IT INFRASTRUCTURE

Goals and Objectives

- Create a City-wide computer room
- Move from obsolete hardware and software to current generation infrastructure
 - ◆ Eliminate productivity wasters including incompatible software and disk space limits
- Improve resiliency and uptime of infrastructure
 - ◆ Create and track uptime metrics

DEVELOP SUSTAINABILITY PLAN

Goals and Objectives

- Develop an application portfolio and understand the life cycle cost of each application
- Plan for the sustainability of applications in addition to existing hardware capital replacement funding
- Create a IT Capital Replacement Plan to forecast and fund hardware and software replacement costs

IMPROVE IT CUSTOMER SERVICE

Goals and Objectives

- Foster a customer service attitude for all aspects of IT service delivery
- Create an IT Help Desk
- Document service levels for incident response and enhancements
- Develop customer service performance metrics and exceed those expectations
- Develop Mobile Device Management capabilities
- Consider "Bring Your Own Device" and "Network Access Control" for some users

IMPROVE STAFF PRODUCTIVITY

Goals and Objectives

- Increase utilization of software application features
 - ◆ Increase user application training
- Introduce application management best practices
 - ◆ Improve departmental ownership of applications
 - ◆ Identify key roles and responsibilities for core business applications
- Conduct process reviews and document application feature/function requirements to identify automation and opportunities to streamline processes
- Utilizing Return on Investment (ROI) principals, justify additional applications to improve productivity and service
- When justified, move to second generation mobile computing (tablets vs. laptops)

ENABLE CITY WIDE APPLICATION USAGE

Goals and Objectives

- Connect all City facilities through a wide area network
- Expand remote access to improve staff productivity
- Improve reliability of access, reduce downtime

ADOPT INFORMATION TECHNOLOGY BEST PRACTICES

Goals and Objectives

- Develop an IT Steering Committee and Governance mechanism
- Adopt a Best Practices approach to software selection and management
- Create and maintain project inventory
- Utilize project management principles for larger projects
 - ◆ Become date- and project schedule-driven
- Finalize documentation
 - ◆ Create standard operating procedures
- Implement technology productivity tools, automate:
 - ◆ Security patch management
 - ◆ Desktop configuration and maintenance
 - ◆ Network management
 - ◆ Alert and alarm threshold management

IMPLEMENT DISASTER RECOVERY CAPABILITIES

Goals and Objectives

- Develop a plan to implement disaster recovery capabilities
 - ◆ Over several years, develop the capability to recover IT applications in the event of a major incident in the San Bernardino Valley
- Consider implementation of redundant Internet connections with automatic failover

INFORMATION TECHNOLOGY (IT) PRINCIPLES

VISION / MISSION STATEMENT

The City of Redlands is dedicated to providing the highest quality technology-based services, in the most cost effective manner, to deliver services effectively and efficiently on a sustained basis in a manner that reflects the organization's dedication to excellent customer service. The City will ensure that the City's information systems are maintained in a secure environment, capable of supporting technology advancements made by the City and will exist in an integrated environment that fosters an open, collaborative, and unifying culture. Information Technology is committed to the values of:

- 1. Reliability;**
- 2. Professionalism and integrity;**
- 3. Efficiency and effectiveness;**
- 4. Innovation;**
- 5. Excellence; and**
- 6. Collaboration and teamwork.**

- Given **Limited IT Resources**, the City will focus these resources on the most productive and cost effective projects.
- City departments shall agree on a **Collaborative Long-term IT Vision and Strategies**, which requires active participation in setting IT priorities through an IT Committee made up of department leadership.
- City will strive to **Maximize Utilization of Existing Systems** and prior investments in application software, as well as to expand functionality and seek enhancements to existing applications.
- City is committed to ensuring **Sufficient Staff Training and Application Software Knowledge** of existing vendors.
- City will continually investigate **Potential Partnering Relationships** that may reduce costs or leverage the expertise of others to advance the City's technology goals. IT management will participate in regional forums with other municipal IT managers to understand industry trends and best practices.
- **Department Ownership** is fundamental to achieving maximum return on investment of applications. Departments recognize the importance of assuming responsibility for managing and implementing their specific core business applications, with the support of IT staff. City departments are committed to taking responsibility for adapting and improving processes to best integrate them with the application software.
- The City will develop an **IT Services Portfolio** so that all interested parties and stakeholders understand the IT Division's roles and responsibilities in servicing the City overall.

IT INITIATIVE SUMMARIES

INTRODUCTION

IT Strategic Master Planning is a process to assess, research, prioritize, budget, and plan future information technology initiatives. Some of the following initiatives are ready for approval and implementation, while others require further assessment and research before the City can make a final determination as to priority, resource requirements, and cost/benefit.

Productivity Improvement – Many of the following initiatives will have a direct impact on overall productivity within the organization. Some of these initiatives will significantly impact specific processes, reducing staff time required to complete a certain process. Others will ease or speed delivery of services to City residents.



Cost Savings – Many of the initiatives outlined herein will have direct or indirect cost savings when implemented. Extensive Return on Investment (ROI) calculations are not within the scope of this report. An ROI Considerations discussion is included at the end of *Appendix* of the report.



IT INITIATIVE CATEGORIES

The master planning process resulted in 62 initiatives. Combined, there are hundreds of findings and recommendations. *CLIENTFIRST* classified the major findings and recommendations into seven categories, including:

BEST PRACTICES

IT OPERATIONS

*APPLICATIONS &
DEPARTMENTAL SYSTEMS*

IT SECURITY

Gov 2.0

IT STAFFING

IT INFRASTRUCTURE

TELECOMMUNICATIONS

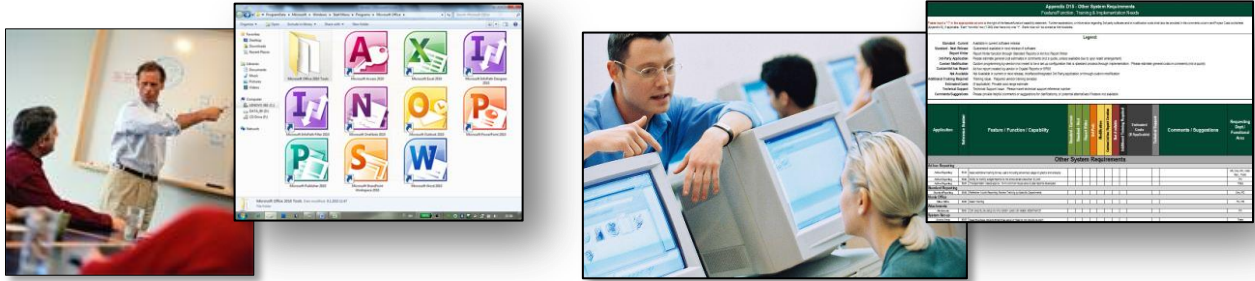
BEST PRACTICES

A best practice is a method that consistently provides results greater than those achieved with other methods. *CLIENTFIRST* believes the following best practices will enhance the City's ability to select, procure, and maintain more effective technology solutions in the future, as well as improve the overall productivity of staff.

The IT Initiatives addressed within this category, which are explained in greater depth in the *Appendix*, include:

IT Initiative	Description
IT Governance	Utilizing an ongoing IT Steering Committee to drive technology education, policies and the implementation of the IT Master Plan over the next five years
Maintaining Software Updates	Maintaining software updates for all applications and operating systems for all users in a timely manner
Social Media Policy	Establish rules of conduct for employees that post content on the Internet
Software Selection Best Practices	Follow best practices needs assessments, evaluation, and procurement when considering new or replacement software solutions
Application Management Best Practices	Establish roles and responsibilities for IT, departments, and users to improve overall utilization of software assets maintained by the City
User Training and Support	Improve ongoing user training to maximize system utilization and gain productivity and efficiencies
Sustainability Planning	Expand replacement/refreshment policies and related budgeting for all IT assets including departmental applications
IT Procurement Practices	Using objective best practice procedures for procuring IT investments to ensure independent specifications and best cost/value is obtained for the City
Return-on-Investment Considerations	Overview showing how to understand ROI opportunities in the City through various technology investments
Application Inventory	Determine existing software resources in use by City staff
IT Project and Services Portfolio	Develop portfolio of city Applications and IT Department services and standards, and communicate to all management and staff; can be used to delineate roles and responsibilities between departments and IT, as well as set proper expectations
IT Cost Recovery (IT Budget Allocations)	Evaluate IT resources to determine effective lifecycle values as an aid in sustainability planning
Project Planning Best Practices	A best practices approach for project planning and management
Cloud Computing	IT services or equipment that are not internal but available through the Internet

IT Initiative	Description
CLETS IT Support Requirements	Security Awareness Training and background checks for IT Staff, IT Contractors and volunteers with access to CLETS
ITIL	Technology framework intended to assist organizations with IT service strategy and IT operations
COBIT	Technology framework to ensure alignment of IT with the environment through the adoption of best practices, metrics, and oversight.



APPLICATIONS / DEPARTMENTAL SYSTEMS

The Applications/Systems category includes initiatives primarily related to department business applications identified during the needs assessment process. Many of these initiatives and recommendations can have a significant impact on overall productivity, enhanced communications, and information sharing, improved constituent service, improved transparency, and in some cases, cost efficiencies.

The IT Initiatives addressed within this category, which are explained in greater depth in the Appendix, include:

IT Initiative	Description
Mobile Computing	Increasing productivity by adding remote computing capabilities for staff in various departments
Cityworks Improvements	Major core enterprise system that includes the following functionalities: <ul style="list-style-type: none"> • Maintenance and Asset Management • Project Planning/Zoning • Permits • Inspections • Code Enforcement
Fleet Maintenance	Improving fleet maintenance software system
Public Safety Scheduling System Selection	Automation of complex public safety scheduling through use of newer technology solutions
Active/Net Expansion	Replacement of existing system and adoption of newer technologies to significantly improve program management and customer service
Electronic Document Management System (EDMS) Improvements	Implementation of advanced document and content management technology to: manage records, document capture, storage and retrieval; provide workflow automation; manage FOIA requests; and provide electronic forms and application capabilities with routing and approvals
Business License Application Improvements	Improve business license software functionality including online business license renewals and payments
ERP Improvements	Adding functionality to the existing financial/accounting system
Time Entry System	Improving functionality and utilization of the existing time entry software solution
Automated Agenda Management	Provide access to information for all departments involved in the agenda process
City Intranet	Internal website portal to automate employee notifications and communications between departments for common questions and information
GIS Needs Assessment	Citywide assessment and master plan for the future GIS data and resource needs
Performance Evaluation Software Replacement	Automated staff reviews based on individual performance
Project Tracking/Collaboration	Collaborative software to manage department or citywide projects
Route Management Software	Software to provide optimized route mapping and planning
WebEOC	Emergency operations center with real-time information feeds
New Broadcast System	Replace current outdated broadcasting system and equipment
Granicus Improvements	Improved video synchronization through live Internet broadcasting



IT Initiative	Description
Access Gate Cards	Improving the processing of gate passes, reporting and renewal fee management
Alarm Billing Software	Automate manual processes being done by police and finance departments
Auto CAD 3D	Obtain updated user licenses
CAD/RMS Improvements	Current system needs additional equipment and modules to improve automation
Fire RMS	Improving functionality of systems used by Fire Department with the rest of the City
Fuels Management	New system to automate fueling processes that are all currently done with an old DOS program
ID Badge Printer	Replace dysfunctional badge printer
Investment Management Applications	Improve investment efficiency, tracking and reporting
Landfill and Streets Tough Books	New tough book for landfill and streets operations
Outsource Utility Bill Print	Consideration to fully outsource utility bill print and mailing
P6 Improvements	Implementation of an already approved and funded Professional Project Management solution
Paperless Citations	Obtain wireless units to enable real-time processing of citations
Plotter Printer	Need a large plotter, printer, and scanner for architectural drawings
Police Paperless Reporting	Need scanners for the paperless reporting system
Productivity/PIO Software (Adobe, Publisher, etc.)	Need updated Adobe, and Publisher software licenses
Reverse 911	Provides emergency telephone notifications to selected geographical regions
Smart Boards	Need an interactive smart board or similar projector screen
Solid Waste Ticketing	Increase solid waste ticketing system reliability, compliance and efficiency
Speed Count Automation	Need ability to automate transfer of data

Gov 2.0 (E-GOVERNMENT)

Gov 2.0 is a growing body of shared knowledge regarding the utilization of new technologies in combination with creativity, information sharing, and the collaborative process to better serve and interact with the public. The principles of Gov 2.0 include:

- Principle 1** - Serve as the primary source of reliable, accurate, and timely City information, delivered to the customer on his/her platform of choice
- Principle 2** - Maintain a real-time, interactive, and user-centered website that offers easy access to public information and online services
- Principle 3** - Offer opportunities for online civic engagement and social collaboration



The possible benefits of developing such communication methods go beyond just simple release of information. Among the advantages are the following:

- Increased efficiency and cost reduction for public services offered electronically
- Allowance of greater government transparency
- Better informed and more involved public
- More collaborative efforts between the City and the public
- Faster and more convenient access promotes public approval

The IT Initiatives addressed within this category, which are explained in greater depth in the *Appendix*, include:

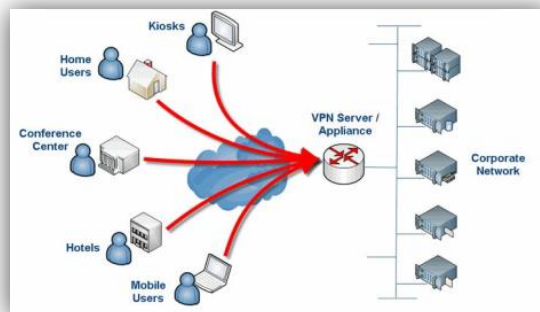
IT Initiative	Description
Citizen Request Management (CRM)	Completing implementation of system to track various requests initiated by citizens online or over the phone including automated internal routing and status reporting
Mass Communication	Simultaneously notify City residents and staff regarding information or status updates
Council Chamber Audio/Visual	Improve Audio/Visual capabilities of the City Council room
Website Redesign	Improve and add features to the website to improve customer service and departmental website content management
Online Payments & Transactions	Provide citizens with 24/7 online transaction capabilities

IT INFRASTRUCTURE

ClientFirst conducted a detailed IT infrastructure assessment, including the network, servers, equipment, inside/outside cable plant, and other communication infrastructures.

The IT Initiatives addressed for this category, which are explained in greater depth in the Appendix, include:

IT Initiative	Description
Computer Refresh	The recommended life expectancy for laptops and computers are 4 and 5 years. Most of the current computers are old and in need of replacement
Mobile Device Refresh	Determine laptop and tablet needs
Data Center Relocation	Improve security and physical infrastructure of the computer room
Server Upgrade	Upgrade to improve performance and efficiency
Metropolitan Area Network (MAN)	Design and implement a Metropolitan Area Network to significantly improve the City network functionality, reliability, performance and reduce redundant hardware and systems. A MAN is also required to implement a single VoIP (networked) telephone system.
Electronic Mail Upgrade	Need to upgrade to most current version of Microsoft Exchange
Office 2010 Upgrade	Need to upgrade to most current 2010 version of Microsoft Office suite
Local Area Network (LAN) Upgrade	Upgrades needed to network
Storage Area Network (SAN)	Local network storage to improve staff productivity, efficiency, and data integrity
Security Camera Interconnect	Firewall to interconnect security camera system with City Network Procure SAN for City Hall
Create Best Practice Internet Connectivity (DMZ)	Create secure network zone that is accessible to the public for online transactions and information
Wi-Fi	Allow users to connect wirelessly to city Internet in conference rooms and key public locations
Redundant Internet	Select an additional Internet service connection
Server Virtualization	Consolidation of many physical servers to improve application resources and user needs
Audio/Visual	Improve conference room Audio/Visual capabilities
Expand Remote VPN Access	Provide remote access to computer systems for selected staff use in the field and for use during off hours



IT Initiative	Description
Bring Your Own Device (BYOD)	Allow personal devices to sync with email and retrieve information
LIMS/WIMS Server	Server in need of installation
MDC Replacements	Aging communication equipment to be replaced
MUED File Server	Need to acquire a new server
P6 Primevera Server	Installation of software and configurations
Secure FTP Site	Improve security and capacity for large file transfers
Senior/Recreation Division Server	Adjust server to correct hosting and email extensions
Video Conferencing	Need to accommodate for desired visual meeting capabilities

IT OPERATIONS

IT operations are the daily support and maintenance of all IT infrastructure and user support. IT operations include the processes and procedures used by IT staff to maintain the network, applications, and workstations. Initiatives related to IT operations are often focused on productivity improvements and implementing IT best practices.

The IT Initiatives addressed for this category, which are explained in greater depth in the *Appendix*, include:

IT Initiative	Description
Asset Management Automation	Automation of City asset management for greater reliability, availability, and resource utilization
Mobile Device Management	Implement best practices for management of field/mobile devices
IT Customer Service Training	Appropriate customer service training for all IT staff to begin process of reforming IT Services into a customer facing/focuses organization
Help Desk Ticketing System	A central Help Desk ticketing system to simplify management of ongoing problem resolution
IT Automation Tools	Automate application and security patching as well as PC imaging tools
Network Management Tools	Implementation of network monitoring, alerts, and alarms provide early warnings for potential problems and improve IT response times
Printer / Copier Management	Centralized management of printers to improve flexibility and reduce troubleshooting

Asset Inventory Management

The image displays three screenshots from an asset management software interface:

- Top Left:** A report titled "Company Assets" showing a list of software licenses with columns for Name, Count, and Status. Licenses include Microsoft Windows 10 Professional, Microsoft Office 2010, and various Microsoft Office 2007 components.
- Top Right:** A report titled "Company Assets" showing a list of hardware assets with columns for Name, Count, and Status. Assets include Acer Aspire 6490, HP EliteBook, and various Dell monitors and printers.
- Bottom Left:** A screenshot of a configuration management tool showing a detailed view of a system's configuration, including hardware specifications and software settings.
- Bottom Right:** A report titled "Company Assets" showing a list of hardware assets with columns for Name, Count, and Status. Assets include Acer Aspire 6490, HP EliteBook, and various Dell monitors and printers.

Configurations

Hardware Assets

IT SECURITY

IT Security refers to all security systems and practices, including Disaster Recovery to protect City systems and data.

IT Initiative	Description
Disaster Recovery Planning	Develop capabilities to survive a major failure or catastrophic event involving IT resources and facilities
IT Security - General	All security systems and practices, including disaster recovery, to protect City systems and data
IT Security Review	Evaluation of present security controls and future requirements
Backups	Improved maintenance and security for routine backup procedures
PCI Assessment	Payment Card Industry (PCI) compliance assessment



IT STAFFING

This category addresses short-term issues facing overall IT staffing resources for the City.

IT Initiative	Description
IT Staffing	Assess current staff size, additional staffing needs, and potential solutions
Managed Services	Automation of many basic routine tasks
IT Staff Training	Development of training needs for new technologies that existing IT staff will need to be proficient in
Police IT Staffing	Police IT staffing considerations

TELECOMMUNICATIONS

IT Initiative	Description
Telecommunications Network Assessment and Inventory	Evaluation of present telecommunication services (voice and data) to determine possible cost reduction and improved performance
Smart Phones Audit and Usage	Consider greater utilization of smart phones for certain users to increase staff productivity
New Phone System	Implement new citywide telephone system after design and implementation of a Municipal Area Network (MAN)
Squad Car MDC Cellular Coverage	Improve current cellular coverage to police squad cars

KEY ISSUES

INFRASTRUCTURE

The majority of the City IT infrastructure has not been refreshed since the early 2000's. The existing City Microsoft server operating system and electronic mail systems are both three generations old and are no longer supported. We worked with the City's telephone system in the early 1990's. The telephone system is three generations old and is no longer supported. The 212 Brookside building (the old public safety building), which houses the City's telephone system and primary Police computer room is uninhabitable. Since we have been working with the City, vendors have refused to work in the building due to the conditions. City servers are scattered about various sites, each facility has differing levels of physical security and environmental controls. Currently, City facilities outside of the City Hall campus are only connected to each other using a "best effort" Internet connection.

In summary, the City's IT infrastructure is one small to medium size earthquake or environmental event away from an outage that could last several weeks. Fortunately, the City's CAD/RMS system for Police is replicated to the Corporate Yard, but most other Police systems and City phone systems have a significantly high risk of long-term failure.

The City does not have an adequate IT Disaster Recovery plan that includes SLAs for application recovery in the event of a disaster.

Below, we have outlined the initiatives that are designed to assist the City in resolving this issue:

- IT Governance
- Sustainability Planning
- IT Procurement Practices
- Return-on-Investment Considerations
- IT Project and Services Portfolio
- IT Cost Recovery (IT Budget Allocations)
- Project Planning Best Practices
- Cloud Computing
- ITIL
- COBIT
- Mobile Computing
- Electronic Document Management System (EDMS) Improvements
- Landfill and Streets Tough Books
- Library Speaker System
- Reverse 911
- Computer Refresh
- Mobile device refresh
- Consolidated Computer Room
- Server Upgrade
- Metropolitan Area network (MAN)
- Electronic Mail Upgrade
- Office 2010 Upgrade
- Local Area Network (LAN) Upgrade
- Storage Area Network (SAN)
- Security Camera Interconnect
- Create Best Practice Internet Connectivity (DMZ)
- Wi-Fi
- Redundant Internet
- Server Virtualization
- Expand Remote VPN Access
- Bring Your Own Device (BYOD)
- LIMS/WIMS Server
- MDC Replacements
- MUED File Server
- P6 Primevera Server
- Reverse 911 Server
- Secure FTP Site

- Senior/Recreation Division Server
- Video Conferencing
- Asset Management Automation
- Mobile Device Management
- IT Customer Service Training
- Help Desk Ticketing System
- IT Automation Tools
- Network Management Tools
- Printer / Copier Management
- Disaster Recovery Planning
- IT Security - General
- IT Security Review
- Backups
- IT Staffing
- Managed Services
- IT Staff Training
- Police IT Staffing
- Telecommunications Network Assessment and Inventory
- Smart Phones Audit and Usage
- New Phone System Replacement
- Squad Car MDC Cellular Coverage

CUSTOMER SERVICE AND STAFFING

During the interview and workshops, staff consistently prioritized customer service as *the number one* issue for IT at Redlands. The issue of improved customer service is inter-related with IT staffing and IT staff perceptions of the function of IT at the City.

Overall, IT must become a customer service focused organization that assists other City departments in reaching their business goals and serves the constituents of the City in a positive and cost effective way. More specifically, the City's information technology needs must be a model where security is implemented according to municipal best practices, but does not overly impinge on staff's capability to perform their duties.

Currently, acceptable levels of service to the departments are not agreed upon or documented. Metrics are not tracked. There are no measures of responsiveness, problem resolution (time or on time), and budget project delivery. These metrics are indispensable for budget planning in an Internal Service Fund Department.

The allocation and priorities of IT staff will need to be adjusted as the goals of the department change to that of a customer facing organization. We believe the entire IT staffing model should be re-evaluated. In order to make wise long-term decisions, some initial data should be collected, analyzed and an appropriate service level defined.

Below, we have outlined the initiatives that are designed to assist the City in resolving this issue:

- IT Governance
- Maintaining Software Updates
- Social Media Policy
- Application Management Best Practices
- User Training and Support
- Sustainability Planning
- IT Procurement Practices
- Return-on-Investment Considerations
- Application Inventory
- IT Project and Services Portfolio
- IT Cost Recovery (IT Budget Allocations)
- Project Planning Best Practices
- Cloud Computing
- CLETS IT Support Requirements
- ITIL
- COBIT
- Mobile Computing
- Cityworks Improvements
- Fleet Maintenance
- Active Net Expansion
- Electronic Document Management System (EDMS) Improvements
- ERP Improvements
- City Intranet
- Reverse 911
- Computer Refresh
- Mobile device refresh

- Consolidated Computer Room
- Server Upgrade
- Metropolitan Area network (MAN)
- Electronic Mail Upgrade
- Office 2010 Upgrade
- Local Area Network (LAN) Upgrade
- Storage Area Network (SAN)
- Create Best Practice Internet Connectivity (DMZ)
- Wi-Fi
- Redundant Internet
- Server Virtualization
- Audio Visual
- Expand Remote VPN Access
- Bring Your Own Device (BYOD)
- LIMS/WIMS Server
- MDC Replacements
- MUED File Server
- P6 Primevera Server
- Reverse 911 Server
- Secure FTP Site
- Senior/Recreation Division Server
- Asset Management Automation
- Mobile Device Management
- IT Customer Service Training
- Help Desk Ticketing System
- IT Automation Tools
- Network Management Tools
- Printer / Copier Management
- Disaster Recovery Planning
- IT Security - General
- IT Security Review
- Backups
- IT Staffing
- Managed Services
- IT Staff Training
- Police IT Staffing
- New Phone System Replacement

METRICS AND MEASUREMENT

When we were engaged by the City to create this plan, we requested Help Desk information and metrics, inventory information, IT's project portfolio and other documentation. The City does not utilize a Help Desk system, therefore there are no reliable data related to IT-related incidents or requests for service. Overall, inventory information was not available, so we worked with the City to develop the necessary high-level data for comparative analysis. Other documentation that would meet best practice expectations was not forthcoming.

There are no reliable IT measurements available, so our recommendations related to staffing and estimated project duration are based on our considerable experience working with municipalities.

The implementation of systems to support data driven measurement, establishment of goals and decision-making is a critical first step to informing the City on the current and future state of IT.

Below, we have outlined the initiatives that are designed to assist the City in resolving this issue:

- IT Governance
- Maintaining Software Updates
- Application Management Best Practices
- User Training and Support
- Sustainability Planning
- IT Procurement Practices
- Return-on-Investment Considerations
- Application Inventory
- IT Project and Services Portfolio
- IT Cost Recovery (IT Budget Allocations)
- Project Planning Best Practices
- ITIL
- COBIT
- Fleet Maintenance
- Electronic Document Management System (EDMS) Improvements
- Reverse 911
- Computer Refresh
- Mobile device refresh
- Consolidated Computer Room
- Server Upgrade

- Metropolitan Area network (MAN)
- Electronic Mail Upgrade
- Office 2010 Upgrade
- Local Area Network (LAN) Upgrade
- Storage Area Network (SAN)
- Create Best Practice Internet Connectivity (DMZ)
- Server Virtualization
- Expand Remote VPN Access
- Bring Your Own Device (BYOD)
- LIMS/WIMS Server
- MDC Replacements
- MUED File Server
- P6 Primevera Server
- Reverse 911 Server
- Secure FTP Site
- Senior/Recreation Division Server
- Asset Management Automation
- Mobile Device Management
- IT Customer Service Training
- Help Desk Ticketing System
- IT Automation Tools
- Network Management Tools
- Printer / Copier Management
- Disaster Recovery Planning
- IT Security - General
- IT Security Review
- Backups
- IT Staffing
- Managed Services
- IT Staff Training
- Police IT Staffing

APPLICATION UTILIZATION

The City utilizes nearly 150 different software applications or modules throughout all departments. These software applications have cost the City millions of dollars and they are a significant City asset.

Many City software applications/modules and systems are underutilized. Additional user training is needed for many software applications. The City overall does not appear to have sufficient resources to develop practices and procedures related to prioritizing or evaluating solutions, identifying sufficient implementation, ongoing management, and support resources for these solutions. Additionally, the City has insufficient IT resources to effectively ensure quality utilization, increase department process improvements and gain significant efficiencies.

While IT has attempted to own certain applications, some departments have taken limited ownership for ongoing improvement responsibilities for their operational applications. This trend toward moving primary responsibility for application implementation, improvements, and ongoing support to the Departments should continue.

In order for the City to support departmental applications effectively, a comprehensive inventory of applications and an assessment of the application utilization and value to the departments are needed.

Below, we have outlined the initiatives that are designed to assist the City in resolving this issue:

- IT Governance
- Maintaining Software Updates
- Social Media Policy
- Application Management Best Practices
- User Training and Support
- Sustainability Planning
- Return-on-Investment Considerations
- Application Inventory
- IT Project and Services Portfolio
- IT Cost Recovery (IT Budget Allocations)
- Project Planning Best Practices
- ITIL
- COBIT
- Mobile Computing
- Cityworks Improvements
- Fleet Maintenance
- Public Safety Scheduling System Selection

- Active Net Expansion
- Electronic Document Management System (EDMS) Improvements
- Business License Application Improvements
- ERP Improvements
- Time Entry System
- Automated Agenda Management
- City Intranet
- GIS Needs Assessment Finding and Observations
- In-Car Video Replacement
- Library System Improvements Finding and Observations
- Performance Evaluation Software Replacement
- Project Tracking/Collaboration Finding and Observations
- Route Management Software
- WebEOC
- Granicus Improvements
- New Broadcast System
- Access Gate Cards
- Alarm Billing Software
- Auto CAD 3D
- CAD/RMS Improvements
- Collection Statistics Automation
- Fire RMS
- Fuels Management
- ID Badge Printer
- Investment Management Applications
- Landfill and Streets Tough Books
- Library Catalog Authority Control
- Library Speaker System
- Outsource Utility Bill Print
- P6 Improvements
- Paperless Animal Control Process
- Paperless Citations
- Plotter Printer
- Police Paperless Reporting
- Productivity/PIO Software (Adobe, Publisher, etc.)
- Reverse 911
- Smart Boards
- Solid Waste Ticketing
- Speed Count Automation
- Citizen Request Management (CRM)
- Mass Communication
- Council Chamber Audio/Visual
- Website Redesign
- Online Payments & Transactions
- Computer Refresh
- Mobile device refresh
- Consolidated Computer Room
- Server Upgrade
- Metropolitan Area network (MAN)
- Electronic Mail Upgrade
- Office 2010 Upgrade
- Local Area Network (LAN) Upgrade
- Storage Area Network (SAN)
- Security Camera Interconnect
- Wi-Fi
- Server Virtualization
- Audio Visual
- MDC Replacements
- Help Desk Ticketing System
- Disaster Recovery Planning
- IT Security - General
- IT Security Review
- Backups
- PCI Assessment
- IT Staffing
- Managed Services
- IT Staff Training
- Police IT Staffing
- Telecommunications Network Assessment and Inventory
- Smart Phones Audit and Usage
- Squad Car MDC Cellular Coverage

DATA INTEGRITY

In the context of information security, data integrity means maintaining and assuring the accuracy and consistency of data over its entire life cycle. Certain issues require consideration:

The Data Center relocation from 212 Brookside to a more appropriate location will require detail planning and coordination to provide a successful Data Center transition/transformation.

Application Sharing – because the City does not utilize a wide area network, staff at remote facilities do not have access to core application systems, including financials, work orders and other key systems. Therefore, spreadsheets and other workarounds are used to transport and integrate summary information used by Management to make decisions further from the source data.

Backups – during the interview process, staff has told us that “most” systems are backed up regularly. Offsite backups exist for a minority of systems.

Disaster Recovery – the City does not currently maintain disaster recovery plans for information technology and would not be able to recover quickly from a significant seismic or environmental event.

Shadow Systems – We believe City application systems are underutilized. Feedback leads us to believe that due to lack of staff training, many “work-arounds” that we call “shadow systems” have been developed. Shadow systems include separate spreadsheets, or small databases that separate final summary reporting further from the source data, reducing the reliability of that data.

Below, we have outlined the initiatives that are designed to assist the City in resolving this issue:

- IT Governance
- Maintaining Software Updates
- Social Media Policy
- Application Management Best Practices
- User Training and Support
- Sustainability Planning
- IT Procurement Practices
- Return-on-Investment Considerations
- Application Inventory
- IT Project and Services Portfolio
- IT Cost Recovery (IT Budget Allocations)
- Project Planning Best Practices
- ITIL
- COBIT
- Fleet Maintenance
- Public Safety Scheduling System Selection
- Active Net Expansion
- Electronic Document Management System (EDMS) Improvements
- ERP Improvements
- Time Entry System
- Automated Agenda Management
- Library System Improvements Finding and Observations
- Performance Evaluation Software Replacement
- Project Tracking/Collaboration Finding and Observations
- Route Management Software
- WebEOC
- Access Gate Cards
- Alarm Billing Software
- CAD/RMS Improvements
- Collection Statistics Automation
- Fuels Management
- Investment Management Applications
- Landfill and Streets Tough Books
- Library Catalog Authority Control
- P6 Improvements
- Paperless Animal Control Process
- Paperless Citations
- Solid Waste Ticketing
- Citizen Request Management (CRM)
- Mass Communication
- Website Redesign
- Online Payments & Transactions
- Computer Refresh

- Mobile device refresh
- Consolidated Computer Room
- Server Upgrade
- Metropolitan Area network (MAN)
- Electronic Mail Upgrade
- Office 2010 Upgrade
- Local Area Network (LAN) Upgrade
- Storage Area Network (SAN)
- Create Best Practice Internet Connectivity (DMZ)
- Redundant Internet
- Server Virtualization
- LIMS/WIMS Server
- MDC Replacements
- MUED File Server
- P6 Primevera Server
- Help Desk Ticketing System
- Disaster Recovery Planning
- IT Security - General
- IT Security Review
- Backups
- PCI Assessment
- IT Staffing
- Managed Services
- IT Staff Training
- Police IT Staffing
- P6 Primevera Server
- Redundant Internet

GOVERNANCE

The City requires cooperative technology solutions that are shared by all departments to meet its goals. Currently, there is not a forum for departments to develop shared goals and objectives and agree upon IT priorities. As this IT Master Plan moves forward, the City will need a cross-departmental group to oversee implementation of the plan, determine annual budgets and make necessary adjustments over the planning horizon.

IT Governance

Often, key IT decisions have been made by IT professionals and a select few organization managers. This does not always ensure the most effective benefit to all stakeholders (departments and constituents). IT governance can provide a collaborative groundwork for major decisions, planning, internal communication, and department/staff training regarding such matters. IT governance is committed to the stewardship of IT resources on behalf of the stakeholders who demand a benefit and/or return on the investment.

Below, we have outlined the initiatives that are designed to assist the City in resolving this issue:

- IT Governance
- Maintaining Software Updates
- Social Media Policy
- Software Selection Best Practices
- Application Management Best Practices
- User Training and Support
- Sustainability Planning
- IT Procurement Practices
- Return-on-Investment Considerations
- Application Inventory
- IT Project and Services Portfolio
- IT Cost Recovery (IT Budget Allocations)
- Project Planning Best Practices
- Cloud Computing
- CLETS IT Support Requirements
- ITIL
- COBIT
- Mobile Computing
- Cityworks Improvements
- Fleet Maintenance
- Public Safety Scheduling System Selection
- Active Net Expansion
- Business License Application Improvements
- ERP Improvements
- Time Entry System
- Automated Agenda Management
- City Intranet
- GIS Needs Assessment Finding and Observations

- Performance Evaluation Software Replacement
- Project Tracking/Collaboration Finding and Observations
- Fuels Management
- Citizen Request Management (CRM)
- Mass Communication
- Website Redesign
- Computer Refresh
- Mobile device refresh
- Consolidated Computer Room
- Server Upgrade
- Metropolitan Area network (MAN)
- Electronic Mail Upgrade
- Office 2010 Upgrade
- Local Area Network (LAN) Upgrade
- Storage Area Network (SAN)
- Create Best Practice Internet Connectivity (DMZ)
- Wi-Fi
- Audio Visual
- Expand Remote VPN Access
- Bring Your Own Device (BYOD)
- Video Conferencing
- Mobile Device Management
- IT Customer Service Training
- Help Desk Ticketing System
- Printer / Copier Management
- Disaster Recovery Planning
- IT Security - General
- IT Security Review
- IT Staffing
- Managed Services
- IT Staff Training
- Police IT Staffing
- Telecommunications Network Assessment and Inventory
- Smart Phones Audit and Usage
- New Phone System Replacement

CONCLUSION

MOVING FORWARD

Moving forward, the focus of IT should be on continual infrastructure and service delivery improvements, sustainability planning, and major software system utilization improvements and replacements. IT must work to position itself in the following ways:

Infrastructure – Mitigate current high-risk issues through the creation of a central computer room function, and improved backup and disaster recovery processes. Focus on replacing obsolete hardware and software, while implementing a citywide network. Integrate redundant Internet connectivity, wireless, mobile computing and, eventually, “bring your own device” into the IT infrastructure.

Customer Service – Create and foster a strong customer service orientation. Implement a Help Desk system. Develop and measure performance based on reasonable service levels.

Staffing – Cross-training and rotating IT staff at the Community/Senior Centers and Police will improve service and create an increased sense of partnership with those departments. Considering other staffing alternatives based on Help Desk metrics when available.

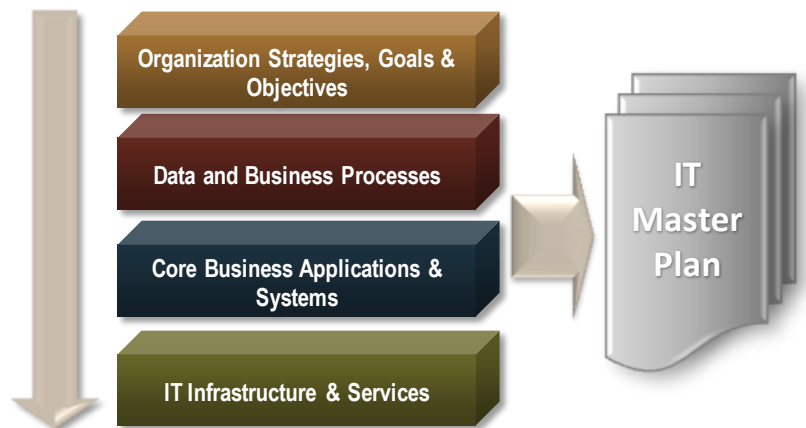
Application Utilization – Historically, IT has attempted to control application management even though staffing was insufficient. Some City departments want to improve their business processes and fully utilize their application software while other departments have depended on IT for assistance. IT should work to encourage a sense of application and business process ownership and continuous improvement by the departments. Improved application utilization is one of the most powerful ways to increase staff productivity and customer service.

Data Integrity – Progress on initiatives to improve the critical issues of infrastructure and application utilization will help to lessen the risk to data integrity at the City.

Governance – The organization of an IT Committee will foster cooperation and collaboration in setting priorities and executing multi-department initiatives. Over the long run, the IT Committee will oversee and maintain the execution and occasional modification of this plan.

We expect the projects outlined in this report to result in improved productivity and customer service, as well as improved sustainability.

Consulting assistance will be helpful for projects that are (1) high priorities, (2) beyond the scope of City skill sets, and/or (3) lacking internal resource availability.



Additionally, we recommend that action plans be developed by the departments and IT for all active, short-term initiatives. The action plans should include all identified needs, recommended resolutions, responsible individuals, target due dates, and comments. These action plans can ensure that all needs are being addressed and/or a decision has been made

not to pursue a resolution. These action plans will also prove beneficial to annual resource and budget planning requirements.

The City should review and update the plan annually, using an abbreviated version of the master planning methodology. In this way, the plan will be a vehicle to guide the information technology activities of the City continuously.

BENEFITS

The completed plan should not be viewed as static, but rather as a dynamic tool that is revised and updated as business conditions and requirements change. If the planning function is not an ongoing process, certain objectives and benefits will not be realized, because the objectives themselves may change as the organization and its environment evolves.

Major benefits that are, or should be, realized through the implementation of this IT Master Plan include:

- Increased collaboration and communication between the departments and IT
- Transformation of the organization's overall understanding, knowledge, and stewardship of information technology
- Clear direction for IT operations and IT projects for the next five years, focused on meeting the organization's needs
- Citywide department consensus and understanding of all IT Initiatives and their priorities
- Foundational process and methodology for evaluation of project investments and analyzing business case justification

IMMEDIATE NEXT STEPS

We recommend the City begin work by reviewing the plan and then priorities. Next, assign lead and participatory resources to each high priority IT initiative, and finalize target due dates for immediate next steps of those initiatives. Initiative leaders should then report status updates for active initiatives to the IT Steering Committee.

Major issues for each initiative should be discussed among the Committee and/or sub-committees for general feedback, collaboration, and lessons learned. Many of the IT initiatives cross departmental boundaries.

IT MASTER PLAN CAPITAL BUDGET

APPENDIX – IT MASTER PLAN INITIATIVES

The following section contains the IT Master Plan Initiatives Workshop documentation in its entirety.