Report for

Information Technology Master Planning

February 1, 2017
REVISED

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Engagement Purpose and Background

Information Technology Master Plan Objective

The objective of the Master Plan included developing and articulating a vision for the effective use of technology to support the work of the City, identifying strategies for developing and implementing technology initiatives, and highlighting the cost benefits of doing so.

As a result of the need to go beyond IT strategies and have the Plan include specific tactical and actionable IT initiatives, the terminology changed. The term "IT Strategic Planning" gave way to a new term called "IT Master Planning". The IT Master Plan deliverables included strategies, as well as tactical and actionable IT initiatives.

We created a well-documented plan to guide the IT Team over the next five years in planning, procuring, implementing, and managing current and future technology investments and resources related to Information Technology Services provided to the City. The plan is the result of a thorough analysis of the following:

- Existing hardware and network infrastructure, staffing, funding, applications, business systems, projects, processes, telecommunications, training, and other investments and resources currently in use by the City
- Interviews and workshops involving all levels of the City's staff, including the Management Team, end-users, and other stakeholders, recognizing limited staff availability
- Identification and prioritization of projects that the IT staff should undertake over the next five years
- Identification of needs to accommodate current and future technology requirements, such as data storage and management, legal requirements, security requirements, etc.

Deliverables

The Master Plan includes:

- Project Purpose and Background
- Methodology for implementation and maintenance of the Master Plan
- Current Information Technology Environment Summary
- Key Benchmarking Metrics
- Strategies, Goals, and Objectives
- IT Vision and Principles
- IT Initiatives (Projects) by priority
- Top Priority Initiatives
- Moving Forward
- Timelines
- IT Plan Budgets

Methodology and Approach

We utilized a five-phase methodology on which we base our IT Master Planning projects. This served as the cornerstone of the project, allowing the collaborative process to shape and develop our recommendations and approach, enabling us to tailor each step to fit the City's unique specifications. We worked in partnership with the City to improve the IT environment so it can better meet the needs of staff and constituents.

Current Information Technology Environment Summary

Summary IT Environment

City of Menlo Park **IT Environment Summary** City Hall	
IT Staff (Full-time Equivalent - FTE)	5
City Employees (FTE)	250
User Log-Ins	350+
PC's	385+
Public Safety Mobile Computers	30+
Laptops	30+
Mobile Devices (e.g., Tablets, Smart Phones, Cell phones, etc.)	20+
Telephones	275+
Cellular/Smart Phones	25+
Physical Servers	22+
Virtual Servers	85
Network Devices	75+
Platforms	Windows, RedHat Linux
Databases	MS SQL, MS Access
Citywide software applications/modules	Approx. 136
Avg. Reported Help Desk Tickets per Week	50
Closed 24 Hours	n/a
Closed 48 Hours	n/a
Closed 72 Hours	n/a
Average Resolution Time	n/a
Average Open after 7 Days	7

City management and staff have done an exceptional job of maintaining information technology systems with the limited financial and staff resources available. The IT Manager and staff deserve credit for how well the current IT environment has functioned. Operating on the existing situation is a testament to the patience of IT Management and staff.

Although the organization has gotten by with limited expenditures, a significant portion of the IT infrastructure and some of the enterprise business applications, which are the backbone of departmental operations and citizen services, are out of date, end of life, underutilized, and behind peer municipalities. Continuing with outdated systems and undertrained employees is a significantly less than the optimal approach. It takes more recurring staff time (and therefore labor cost) to make up for the lack of up-to-date IT systems that are common in other municipal governments.

Over the last few years, citizens have begun demanding more efficient interaction, online transactions, and more transparent information availability. The City will not be able to manage these changes without updating, improving the management, and better utilizing enterprise business applications and the IT infrastructure that supports them.

Key Statistics and Metrics

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

IT Budgeting/Expenditures	IT Spending vs. Operating Fund Budgets and Users
IT Staffing Resources	Overall IT Staffing vs. Key Equipment Counts
IT Capital Replacement Schedules	IT Equipment Replacement Schedules

These measurements provide an indication 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 Operating 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.

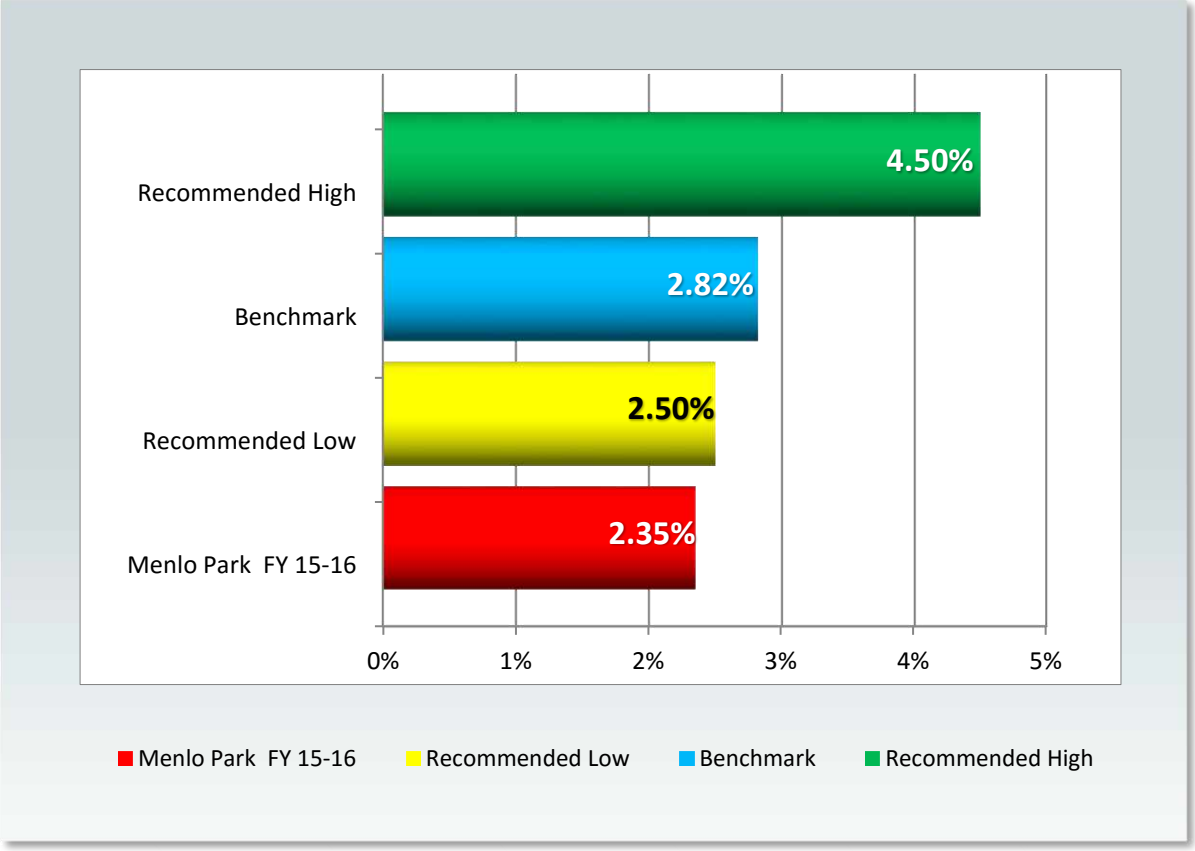
IT Staffing Levels Versus Key Equipment Counts (e.g., servers, PCs, and total number of logins) are often a reflection of IT staff productivity. With current up-to-date technology and the proper productivity tools, an individual IT staff member can support more users, reducing overall costs.

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

IT Spending versus Operating Fund Budgets

The following table depicts Menlo Park's *IT Spending versus Recommended Best Practices* and a municipal benchmark of 34 agencies.

Menlo Park FY 15-16	Recommended Low	Benchmark	Recommended High
2.35%	2.5%	2.82%	4.5%



The 2015/2016 adopted budget for the general fund was $48,168,045, and the IT expenditure budgets total for the same period was $ 1,132,313. The municipal spending benchmark range from the survey was between 1% and 8%, with an average of 2.82%. The percentage of IT expenditures versus operations budgets at Menlo Park is below the recommended low and the average benchmark for other municipalities. The 2015/2016 budget period is the first year of the City's establishing an IT Internal Service Fund and therefore past years for IT expenditures were not consistently reliable to represent and provide historical spending trends.

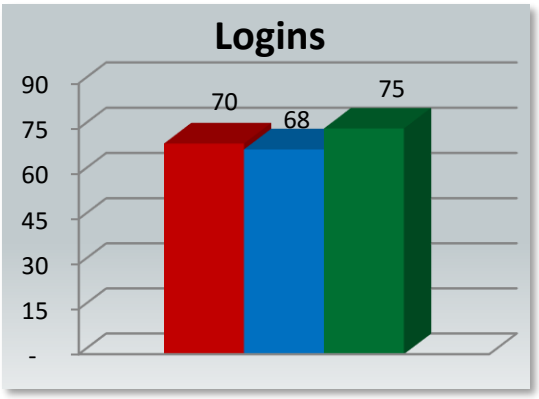
Overall, it represents recognizable underspending versus industry standards for IT infrastructure and overall information technology solutions and support. The result of this underspend has been an IT infrastructure that is obsolete in places, and a portfolio of application systems that include many aging and underutilized departmental applications. A greater level of funding would bring IT infrastructure up to date and improve the departmental applications tools resulting in increased productivity throughout the City, and greater citizen transactions, service access, and interactions through the City's website.

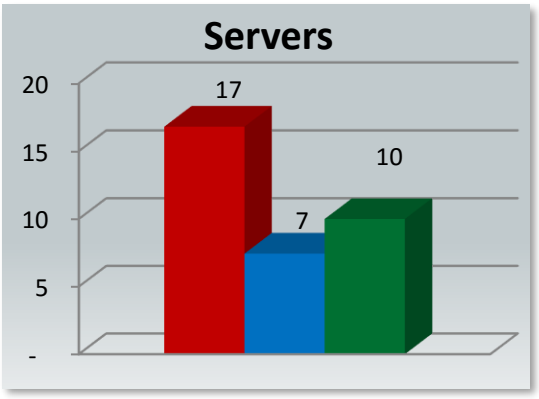
IT Staffing Ratios

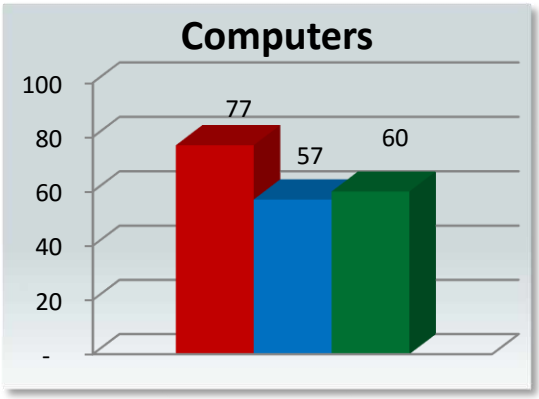
The following table depicts Menlo Park's *IT Staffing Ratios* for logins and equipment versus a municipality benchmark of 47 similar agencies. These are commonly used measures in the industry to validate staffing levels. As the number of individuals served and the amount if equipment increases, staffing levels should also increase.

	City of Menlo Park	Municipality Benchmark	Recommended Best Practice
Logins	70	68	75
Servers	17	7	10
Computers	77	57	60

In this comparison, the City's IT staff support more user logins and significantly more computers and servers than their peers and than advised by recommended best practices. This confirms the findings in the report that describes IT staff training required and additional IT staff necessary to support and secure the citywide IT environment as well as the City's user community.







Equipment Replacement

The following table represents *IT Equipment Replacement Recommended Best Practices* and a municipal benchmark of 39 agencies.

	City of Menlo Park	Municipal Benchmark	Recommended Best Practices
Laptops	4	4	4
PCs	4	4	5
Servers	5	5	5

Note: Above items are replacement cycles in years.

The City's current policy is in line with hardware replacement best practices. Although a four-year replacement cycle for PCs is preferred, many of our clients have moved to a five-year replacement plan, due to reduced capital funding.

We would recommend limited use of laptops as loaners for Internet browsing or as training stations after four years of productive life, in order to avoid additional expenditures.

IT Strategies, Goals, and Objectives

The strategies for leveraging and maximizing information system utilization in delivering 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 time frame and, if appropriate, the next steps toward implementation.

Improve Staff Productivity

Goals and Objectives

- Introduce application management best practices.
  - Improve departmental ownership of applications.
  - Identify key roles and responsibilities for core business applications.
  - Increase user application training.
  - Provide key departmental personnel with report writer training.
- Conduct process reviews and document application feature/function requirements to identify automation and opportunities to streamline processes and reduce duplication, including:
  - Find areas for automating existing manual processes.
  - Perform processes within core application systems and eliminate side-bar spreadsheet work and other shadow systems.
  - Fully implement reporting capabilities to ensure output that supports better business decisions and measurement of performance goals (performance measures or KPIs).
- Utilizing return-on-investment (ROI) principles, identify areas for improvement, and use ROI principles to justify additional applications to improve productivity and service.
- When justified, move to next-generation mobile computing (tablets and laptops).
- Provide the public and citizen online information and self-service capabilities, reducing staff phone time and counter activity.
- Implement dual monitors for staff productivity gains.
- Use sustainability planning strategies to improve and maintain high network speed, network reliability, and full citywide access.

Implement IT Staffing Improvements

Goals and Objectives

- Add Enterprise Applications Support Specialist position to assist with the following:
  - Selection and implementation of current generation software applications
  - Improvement of business processes to leverage new technology and increase efficiency
- Add Network/Systems Engineer to assist with network management, design, and security
- Develop a training plan for each existing staff member.

Select and Implement a New Enterprise Resource Planning (ERP) System

Goals and Objectives

- Follow a system selection best practices approach to select an ERP system to replace the following core application systems:
  - Cayenta (Financials)
  - ADP (HR and Payroll)
  - Tidemark (Community Development)
  - HdL (Licensing)
- This process should include the following:
  - Assess and define needs.
  - Develop an RFP based on the needs assessment and defined needs.
  - Analyze and determine short-list.
  - Conduct detailed tailored demonstrations.
  - Perform reference checks.
  - Conduct site visits.
  - Select finalist.
  - Conduct due diligence and contract review and negotiation.
- Implement per best practices with Project Management Office, utilizing PMI (project Management Institute) standards.

Move Towards a Citywide GIS/Geospatial Application Perspective

Goals and Objectives

- Move to a centralized GIS environment, and consolidate existing GIS system activity.
- Provide to GIS/Mapping presentation to the public on the City's website.
- Include geospatial requirements as specifications for all future software application acquisitions.
- Create a GIS Master Plan to identify GIS priorities and resource requirements.
- Move to a more collaborative model for collecting and updating GIS data with Web- and mobile-based GIS applications.

Ensure IT Governance and IT Best Practices

Goals and Objectives

- Adopt a Best Practices approach to software selection and management.
  - Improve application analysis and reporting capabilities within the departments.
- 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 IT Governance Best Practices through IT Steering Committee

Goals and Objectives

- Formalize an IT Steering Committee and Governance mechanism.
  - Review Help Desk metrics and identify training needs.
  - Monitor and review IT Initiatives.
  - Develop and review standards and policies.
  - Collaborate on projects and initiatives.
  - Act as a sounding board for management and staff.

Maximize Utilization of Application Systems

Goals and Objectives

- Utilize software selection best practices for all new application procurements.
- Follow implementation project management best practices.
- Maintain a complete Application and User License Inventory.
- Plan for and fund adequate user training and support.
- Train key users so they can fulfill their roles without extensive work-arounds and unnecessary reconciliations.
- Implement application management best practices, including:
  - Fund an Application Support Specialist (Business Analyst) to support the applications and the associated application users in the business departments.
  - Create a culture of departmental enterprise application ownership for ERP system and any other core departmental applications.
- Commit all levels, from management to line staff, to taking responsibility for adapting and improving processes, and integrate them with core application software applications.

Improve Application Management and Support

Goals and Objectives

- Improve departmental ownership of applications.
- Identify key roles and responsibilities for core business applications.
  - Process Owners
  - Application Champions
  - Application/Business Process Analysis
  - Ad Hoc Report Writers
- Add Business Analyst (Application Support Specialist) skill sets.
- Improve application analysis and reporting capabilities within the business departments and/or the IT Division.
- Perform process reviews and document specific feature/function requirements for inclusion in RFPs when procuring new applications.
- Create and maintain Application and User License Inventory.
- Follow software selection best practices for new software acquisitions.
- Follow implementation project management best practices.
- Create standard operating procedures.
- Utilize industry subject-matter experts (SMEs) for large, complex projects.

Strengthen Infrastructure Resilience and Disaster Recovery Capabilities

Goals and Objectives

- Identify high-priority systems and recovery time frames.
- Expand virtual servers to reduce server count and increase failover.
- Consider implementation of redundant Internet connections with automatic failover.
- Finalize disaster recovery capabilities and plan.
- Exercise plan annually.

Expand Citizen Communication and Online Customer Service

Goals and Objectives

- Increase online transaction capabilities.
- Implement an integrated Citizen Request Management (CRM) system.
- Onlines Planning Application and Electronic Plan submittals.
- Implement Online Permits.
- Implement Online Permit Inspection Requests and Scheduling.
- Implement Online Code Enforcement Complaints.
- Implement Online Licensing Renewals.
- Implement Online Park and Recreation Program Registration and Payment.

Improve IT Operational Efficiencies

Goals and Objectives

- Implement Help Desk software to effectively log calls and track/measure service levels.
- Develop metrics for the measure of IT service levels and measurement of IT performance.
  - Report on these metrics regularly.
- Analyze and track infrastructure performance and application response time.
- Implement an IT Services Portfolio and project management capabilities.
  - As a part of the IT Services Portfolio, work with the IT Steering Committee to reach agreement on reasonable service levels for Help Desk support.
  - Review responsibilities for services provided by IT to validate their necessity.
- Utilize these and other Operational Tools to report on the success of IT to the IT Steering Committee.

Modernize IT Infrastructure and Create Uptime Metrics

Goals and Objectives

- Insure that space planning and computer equipment room meets standards for space, access, etc.
- Implement the following initiatives as included in the plan:
  - Network Redesign
  - Core Switch Replacement
  - Power Distribution (UPSs and PDUs)
- Improve resiliency and uptime of infrastructure.
  - Design infrastructure to include cost-effective redundancies to reduce downtime.
  - Create and track uptime metrics.

Implement Best Practices for Procurement and Project Management

Goals and Objectives

- Procure large or complex equipment and services through a competitive process.
  - Conduct an initial design phase for use during competitive bidding.
- Utilize best practices project management techniques for the implementation of larger, complex projects.
  - Develop a project planning expertise and utilize project planning techniques to report on project progress to management and the IT Steering Committee.
  - Integrate project management with management of the IT Services Portfolio and Project Inventory.

Information Technology (IT) Principles

Vision / Mission Statement

The City of Menlo Park 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 its 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**
6. **Collaboration and Teamwork**

- Given **Finite IT Resources**, the City will focus these resources on the most productive and cost-effective projects.
- City departments will 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 vendor systems.
- **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 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, while 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 in the *Appendix* of the report.

IT Initiative Categories

The master planning process resulted in 110 initiatives. Combined, there are hundreds of findings and recommendations. *ClientFirst* classified the major findings and recommendations into eight categories, including:

- **Best Practices**
- **IT Operations**
- **Departmental Applications and Systems**
- **IT Security**
- **Gov 2.0**
- **Telecommunications**
- **IT Infrastructure**
- **IT Staffing**

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, explained in greater depth in the *Appendix*, include:

IT Initiative	Description
Return-on-Investment Considerations	Overview showing how to understand ROI opportunities in the City through various technology investments
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
COBIT	Technology framework to ensure alignment of IT with the environment through the adoption of best practices, metrics, and oversight
ITIL	Technology framework intended to assist organizations with IT service strategy and IT operations
Applications Management Best Practices	Establishing roles and responsibilities for IT Division, departments, and users to improve overall utilization of software assets maintained by the City
Applications and User Licensing Inventory	Determining existing software applications and resources in use by City staff
User Training and Support	Improving ongoing user training to maximize system utilization and gain productivity and efficiencies
Training Room	Maintaining a room for testing applications that are being implemented or for staff to improve existing competencies
Software Selection Best Practices	Following best practices needs assessments, evaluation, and procurement when considering new or replacement software solutions
Project Planning and Implementation Best Practices	Implementing a best-practices approach for project planning, implementation, and management
Maintaining Software Updates	Maintaining software updates for all applications and operating systems for all users in a timely manner
IT Project and Services Portfolio	Developing a portfolio of City Applications and IT Division services and standards, and communications to all management and staff which can be used to delineate roles and responsibilities between departments and IT, as well as set proper expectations
Sustainability Planning	Providing a more practical or realistic way to determine and plan for the ongoing operational system needs and expenses of major technology systems
Cloud Computing	Utilizing IT services or equipment that are not internal but available through the Internet
Centralized Land and Parcel Management	Consolidating Land/Parcel information for improved accuracy and data retrieval and consistency of address and parcel information across all software applications

Departmental Applications and 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 many cases, cost efficiencies.

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

IT Initiative	Description
Enterprise Resource Planning (ERP) Replacement	Replacement of existing system and adoption of newer technologies to significantly improve City operations and customer service. Common Application suites for ERP systems include: • Financial Management • People Management (e.g., HR, Payroll, Time Keeping) • Land Management/Community Development • Work Order/Maintenance Management • Citizen Request Management
Project and Grant Accounting	Utilizing Project and Grant Accounting modules
Contract Management	Utilizing software to manage contract lifecycles
Cashiering Needs Assessment and Replacement	Assessing each department's cashiering needs to determine optimal cashiering processes and solutions
Work Orders/Maintenance and Asset Management System	Automating of work order and asset management functionalities
Fleet Management	Automating fleet management with software
Land Management System Replacement	Replacing existing system and adopting newer technologies to significantly improve City operations and customer service. Modules commonly offered in a Land Management application include: • Project Planning / Zoning • Permits • Inspections • Code Enforcement • Business Licensing • Parcel / Address Management
Electronic Plan Submittals and Reviews	Receipts and reviews of electronic architectural plans related to City permitting and planning processes
Human Resources System Improvement or Replacement	Robust Human Resources system improvements or a replacement of existing solutions
Employee Self-Service	Explore employee self-service needs and options
Time, Attendance, and Accruals Tracking	Automating and improving employee time and attendance processes
Performance-Evaluation Software	Automating staff reviews based on individual performance
Applicant Processing	Improving applicant processing capabilities in order to reduce staff efforts

IT Initiative	Description
Training and Certification Management Software	Training Management Software for improved management and reporting of staff training and ongoing requirements
Staff Scheduling System	Automating personnel scheduling through the use of a technology solution
Project and Construction Management	Project and Construction Management Software to provide automation in planning, scheduling, monitoring, controlling, and reporting on City projects
Parks and Recreation Software Replacement (eGov)	Replacement of current Parks and Recreation software in order to gain more efficiencies and obtain more functionality
Citywide Facilities Scheduling/Events Calendar	Benefits of a Citywide facilities scheduling and Events calendar
Childcare Management System	Utilizing a solution that provides childcare capabilities
Electronic Content Management System (ECMS) Replacement	Replacing current system with one that provides advanced document and content management features that include, but are not limited to, managing records, managing record retentions, document capturing, storage and retrieval, workflow automation, FOIA request management, and providing electronic forms and application capabilities with routing and approvals (many of these systems also offer integrated Agenda and Legislative Management for Council meeting automation and managing resolutions and ordinances)
Agenda Creation and Management Software	Obtaining an agenda management solution to improve access to information for all departments involved in the agenda process
Legislative Management	Using legislative management software for managing and tracking resolutions and ordinances
Granicus Media Management Assessment (Replacement)	Replacement of Council/Board meeting media management system to allow for more capabilities at a more affordable cost
Large-File Sharing Tool	Consolidation of applications being used for sharing of files that are too large for sharing via email
Video Capture and Editing (Video Events and Other)	Migrating to a single video capturing and editing environment
Photo Management and Storage Software	Professional-quality software that stores, manages, and retrieves the extensive photo archives from various City departments
Publishing Software Consolidation	Consolidation to a comprehensive all-in-one publishing software solution, versus multiple vendors and programs
Real-Time Utility Usage Access (Automatic Meter Reading-AMR)	Realtime utility meter reading information that can also be shared online for customers to monitor their usage more frequently or potentially in real time
Website Improvements	Addition of features to the website to improve customer service and streamline departmental website content management

IT Initiative	Description
Notifications System (Push/Social Media/Text)	Using a single tool for simultaneously notifying City residents and staff about important information, events, status updates, or emergencies
Develop GIS Master Plan	Developing a Master Plan and business case for GIS implementation and investment on a citywide basis
Department-Centric / GIS Self-Service	Ability for departments to access and utilize Web mapping or GIS applications to perform ad hoc inquiries and for customized citizen access
RIMS (CAD/RMS) Gap Analysis and Application Maximization	Performing gap analysis to identify functionalities not implemented but available in the existing RIMS system
Alarm Tracking and Billing Software	Automating processes currently being performed manually for Alarm permitting and billing
Ticket Writer Software Replacement (Duncan to TDS)	Continuing migration to the new TDS system
Officer Radio Transmission Identification	Automatic identification of officers when they make transmissions using their personal radios
Replace MDC's with RIMS Mobile/GIS System	Considerations for moving to the RIMS new MDC GIS mobile system
Tow Company Billing System	Automated tow billing software
FirstNet Preparation Planning	Continue efforts for current implementation of FirstNet

Other Application and Departmental Systems Initiatives

IT Initiative	Description
Police Audiovisual Format Conversion Tool	Conversion of third-party surveillance systems to a common file format.
Panic Button	Use of panic buttons in more City facilities
Penal Code/Vehicle Code Reference Software	Digital penal code/vehicle code software on computer desktops
Portable Wireless Camera for Surveillance	Portable wireless camera for surveillance
Wireless PA Radio PA/Sound System	High-quality wireless radio system for events
Instant Messaging	Instant messaging capabilities internally and with the public
PA Announcements	Automatic PA announcements in the Library
Parking Sensors and Management	Reduction of traffic congestion by implementing parking space sensors and electronic signage
Constituent Satisfaction Surveys	Allow the public to complete satisfaction surveys
Laptop Borrowing Program	System that manages public borrowing of laptops
Library Subscription Provider Statistics	Analytics program for improved and quicker decisions regarding Library subscription providers
HVAC Zonal Climate Control System	Improved HVAC management

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. The advantages include:

- 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, promoting public satisfaction and 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)	Implement an integrated CRM system to track various requests initiated by citizens online or over the phone, including automated internal routing and status reporting
Online Payments, Transactions, and Services	Provide citizens with 24/7 online transaction capabilities.
Video/Web Conferencing	Need to accommodate video conferencing capabilities in City meeting facilities/conference rooms
Council Chambers Audiovisual Systems	Improve Council Chambers room audiovisual maintenance capabilities.
Conference Room Audiovisual	Improve and standardize audiovisual capabilities for all City conference rooms.
Social Media Policy and Procedures	Develop a strategy for implementation, management, and utilization of social media in a secured, controlled and standardized manner.
Mobile Computing	Increasing productivity by adding remote computing capabilities for staff in various departments
Newsletter	Need to streamline newsletter signups and distribution
Dual Monitors	Improve staff productivity by allowing an additional workstation monitor for certain users – studies show significant return on investment resulting from dual monitor implementations

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
IT Computer Room and Teledata Closet Improvements	Enhanced computer room to meet industry standard best practices
Wireless Network	Upgraded wireless network devices and improve public-facing wireless
Internet Bandwidth	Increased Internet bandwidth capacity
Electronic Mail (Exchange)	Recommended improvements to the current Microsoft Exchange platform
Enhanced Internet Security and Connectivity (DMZ)	Improvements to the existing DMZ for internal and external network security
Remote Access Upgrade	Improved remote access to SCADA systems for certain staff members
Network Redesign	Redesign of core network for improved performance, management, and elimination of single points of failure
Core Switch Replacement	Replacement of core switches that are not adequate for the City's current and future needs
Power Distribution	Procurement of additional power distribution units for better control and monitoring of power to particular network devices
Virtual Server Migration	Continued upgrading of existing virtual server environment
Storage Area Network (SAN) Upgrade	Procurement of additional iSCSI-based SAN for failover and redundancy (replication), which include instituting Storage Tiering to improve performance of core data and applications
Technology Support for the EOC	Upgrading equipment and technology to support use of EOC in a large-scale emergency
Redundant CAD/RMS System	Redundant, secondary server in case the primary server fails
Computer Upgrades (Windows XP & Office)	Considerations for upgrading to more current version of Microsoft's operating system
Video Camera and Surveillance System (Citywide Standard)	Assessment of the City's multiple camera systems and opportunities for improvement
Secure Managed Access (Wireless/Keyless Security)	Assessment of the City's access and control requirements and potential for using a single, citywide system

IT Operations

IT operations are the daily support and maintenance of all IT infrastructure and user support. These 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.

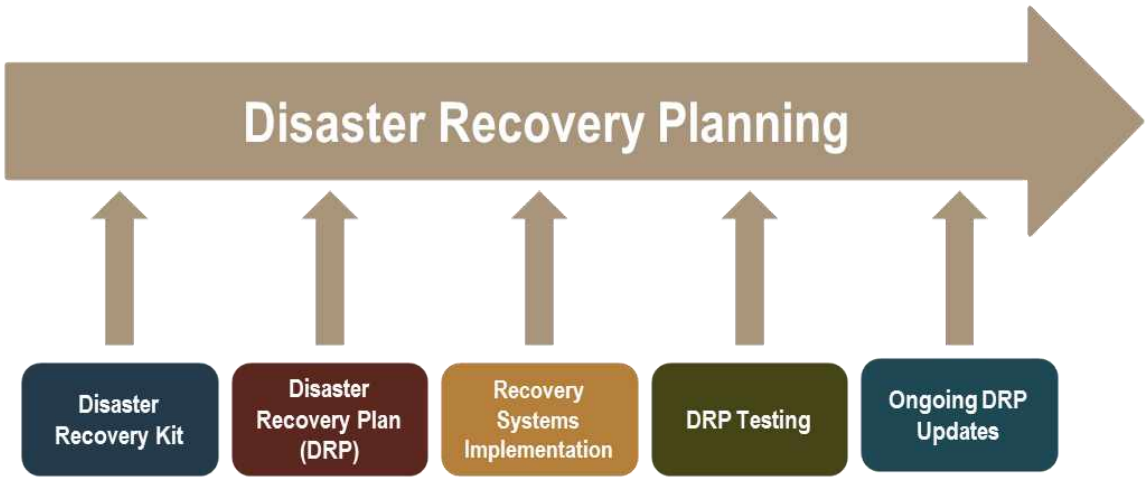
The IT Initiatives addressed for this category, which are explained in greater depth in the *Appendix*, include:

IT Initiative	Description
Help Desk Ticketing System	Implementation of a citywide Help Desk ticketing system and to establish IT response time metrics
Mobile Device Management	Implementation of a Mobile Device Management software to track, control, and manage all mobile devices
Network Management Tools (Alerts/Alarms)	Implementation of network monitoring, alerts, and alarms to provide early warnings for potential problems and improve IT response times
IT Support Metrics	Development of Help Desk ticket response time and resolution goals, based on urgency, and track response metrics by team member
Desktop Management	Imaging tool to deploy, install, and manage basic application packages on computers
IT Automation Tools (Patch Management)	Software to automate installation of application and security patches
IT Policies and Procedures	Revision of IT policies for passwords, encryption, data usage, new hire and termination procedures, backup procedures, Web filtering, social media, etc.
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
IT Cost Recovery (IT Budget Allocations)	Developing an IT cost recovery model to allocate IT costs fairly, using holistic review and measurable to ensure use of services are charged proportionately

IT Security

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

IT Initiative	Description
Disaster Recovery Planning	Developing capabilities to survive a major failure or catastrophic event involving IT resources and facilities
Backups	Improving maintenance and security for routine back up procedures
IT Security Assessment	Implementing improvements to network security
PCI Compliance	Standards and laws that govern payment processing for public and City security (mainly enabling secure card transactions)
Records and Data Retention	Policies and procedures for disposal/destruction of electronic records and data
Two-Factor Authentication	Implementation of user verification methods as an additional security layer to user logins (i.e., “something you have, plus something you own”).
SCADA Security	Comprehensive auditing of SCADA systems and installation of firewalls between networks



Telecommunications

IT Initiative	Description
Phone System Redundancy	Implementation of additional digital telephone connections to protect against single points of failure

IT Staffing

IT Initiative	Description
IT Staffing	Assessment of current staff size, additional staffing needs, and potential solutions
Enterprise Applications Support Specialist	Ability for IT Division operations to provide application/business analyst roles and skill sets

Top Priority Initiatives

The following are a list of the Top Priority Initiatives that have been determined. The City has made note of these as the initiatives from this plan that should be kept in the forefront during the future implementation of this IT Master Plan.

It should be noted that these initiatives are prioritized, denoted by "TP" (Top Priority) in the *IT Master Plan Capital Budget* that is included as part of this IT Master Plan.

It should also be noted that these "Top Priority Initiatives" are not ranked in any particular order. The City is contemplating such a ranking prior to beginning the implementation of the IT Master Plan.

IT Initiative	Initiative Number	Why on the Top Priority List?
Applications Management Best Practices	5	The City has not had in place, nor followed consistently, any policies, processes, or best practices for the selection and implementation of application software. As a result, there is a significant amount of software duplication. There also is a gap in IT for the support of software applications. Best practices can manage software acquisitions, and Application Management talent (Business Systems Analysts) can help ensure effective implementations and adequate software management to realize a return on investment.
Centralized Land and Parcel Management	15	This is heavily related to GIS and the need for the City to develop a GIS Master Plan (see initiative 46). The core to City operations are land, parcels, and addresses. The existing fragmentation and lack of integration between applications has resulted in separate addresses in multiple systems that are the same but are not structured or spelled the same, making it impossible to report on addresses across all City environments. This initiative will establish GIS as the master address for all applications to use to ensure all addresses and parcels are synchronized in all of the City's applications.
ERP System Replacement	16	This is the core system for the entire City. The existing Cayenta, Tidemark, HdL, and ADP ADG systems have aged and/or no longer meet the needs of the City. Other ancillary systems and shadow systems have been acquired or developed that do not interface/integrate and would not be necessary with the implementation of a new ERP system. The ERP system is the set of core applications that are used to operate all of the City's most common operations. It is critical to update the City's ERP environment and to keep it up to date into the future.

IT Initiative	Initiative Number	Why on the Top Priority List?
Land Management System Replacement (To be executed as part of the ERP initiative)	22	The City currently uses Tidemark as their main system for Planning, Permits, Inspections, and Code Enforcement. The existing system has aged, no longer meets the City's needs, and is not integrated with the rest of the City's applications.
Human Resource System Improvement or Replacement (To be executed as part of the ERP initiative)	24	The City is currently contracting with ADP for payroll and HR. The system has been difficult to maintain, and there have been difficulties in implementing time keeping and time clocks. The ADP system is hosted at ADP facilities and the City pays a high annual fee for these systems. Replacement of this system with new payroll and HR applications as part of the new ERP system would provide better capabilities and full integration with the rest of the ERP system at a much lower annual cost.
Parks and Recreation Software Replacement (eGov)	32	The Parks and Recreation Department is a revenue-producing department in the City. The system in use for managing operations and collecting revenues is a system called eGov, which has worked for the City up to this point. However, eGov is not a park and recreation system, and it cannot fully meet the needs of the City and of the park and recreation patrons in the long term.
Electronic Content Management System (ECMS) Replacement	35	Electronic Content Management Systems (ECMS) are enterprise systems that help store and retrieve documents, impages, video, audio, and much more. Other modules within the ECMS system include Agenda Management, Legislative Management, and the ability to integrate with media management and the City's Website. The trend to utilize ECMS within cities is prevalent and should be of high consideration for the City.
Develop GIS Master Plan	46	GIS and spatial maps are the future and will drive many of the City's operations moving forward. GIS and maps also provide a visual interface for citizens to access services and information. Having a citywide approach to GIS will set the City on a course to meet these geospatial and mapping needs in the future.

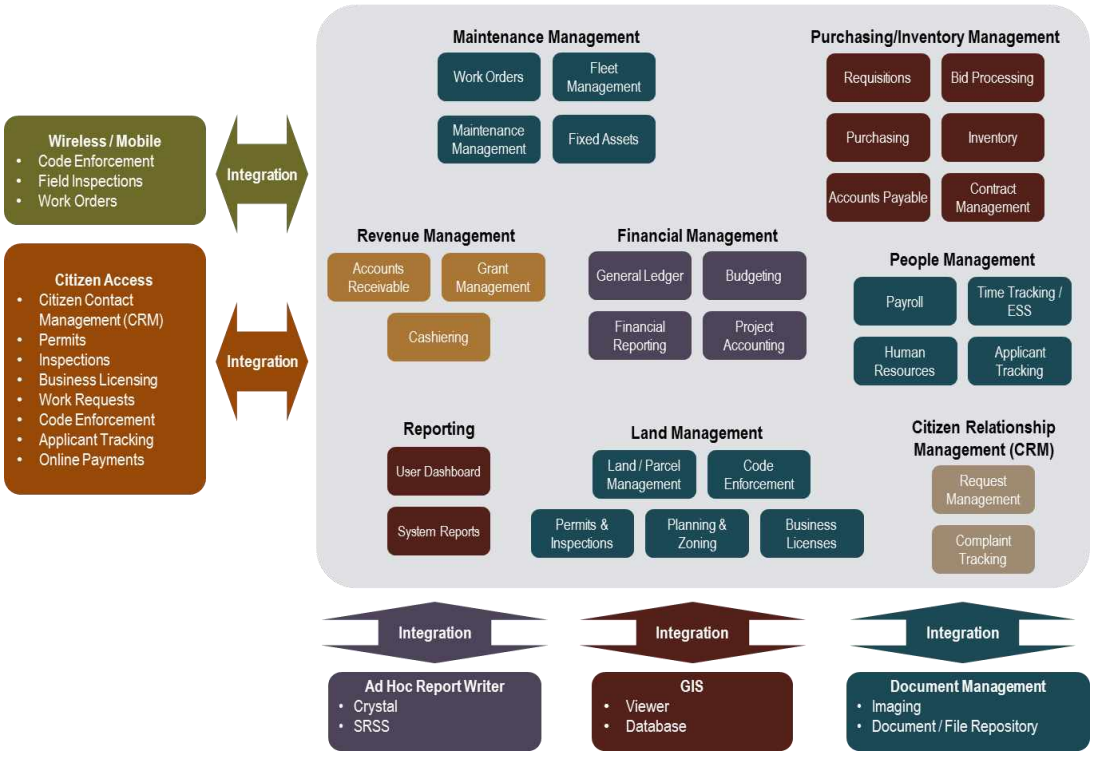
IT Initiative	Initiative Number	Why on the Top Priority List?
IT Computer Room and Teledata Closet Improvements	76	As part of the City's existing space planning efforts plans have been made to move the existing IT computer room and Teledata equipment. It was determined that the existing plan for movement lacks the proper requirements, including: • Improper clearance behind the computer racks (requirement is for 36 inches and City plan is for 24 inches) • Server racks located directly beneath sprinkler systems, placing them at risk for water damage • Some equipment not connected to properly grounded lines, and some not connected to generator • Lack of locally controlled HVAC service • No environmental monitors in computer room The City should seriously consider locating and establishing the proper environment for its computer room and teledata closet.
Network Redesign	82	The City's network is the highway for communication and the infrastructure upon which all applications and tools reside and data travels. Without a solid network design for MANs, WANs, and LANs, the investment in application software tools will not be realized.
IT Policies and Procedures	98	The IT Manager expressed the need to allocate resources to this endeavor to ensure proper documents for day-to-day operations, but to also ensure that document is in place, in case of any turnover in staff resources.
IT Staffing	109	The talent to properly maintain the City's IT infrastructure and the City's application systems environment is critical to ensuring that IT investments provide the level of productivity and return expected. The alignment, positions, and training recommended will ensure this is accomplished.

Benefits of Modern ERP Software

An *Enterprise Resource Planning (ERP) System* automates and integrates many core, citywide functions into a single solution, while automating manual processes and providing a central location of information and reporting. An enterprise system allows collaboration and sharing of information between divisions, departments, and citizens to provide a transparent and efficient government operation. The benefits of an enterprise system are numerous and include:

- Built-in integrations between Land, Work, Financial, and People Management application suites
- Newer technology platform (processing, capacity advantages)
- Real-time notifications/queues
- Task tracking
- Real-time access to information
- Elimination of duplicate data entry
- Improved data integrity
- Centralized location and customer account maintenance
- Reliable information
- Workflow capabilities
- Centralized cash receipt capabilities
- Efficient revenue collection
- Reduced operating costs
- Improved internal communication
- Foundation for future improvement
- Potential reduction in annual maintenance and support fees
- Improved online information for citizens to access

Example Enterprise Applications Overview



Financial and People Management

The *financial management suite* is a suite of an enterprise system that encompasses the financial tasks and processes performed to ensure all organization-wide activity is properly accounted for and accurately reported to local, state, and federal agencies. Benefits of a financial management suite include:

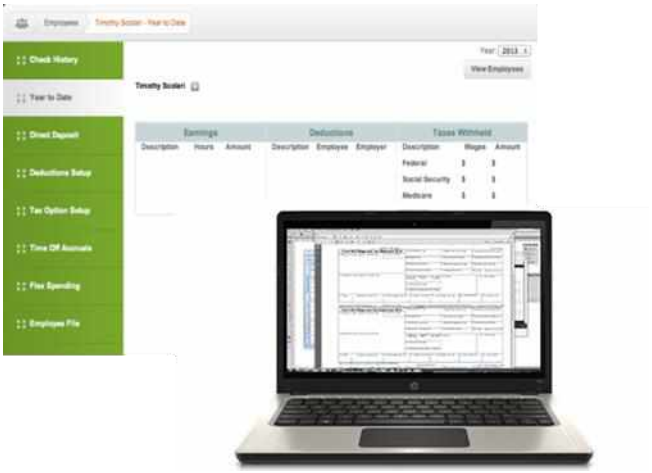
- Quick generation of financial reports
- More efficient budgeting processes
- Real-time access to available budget and funding
- Better spending controls for departments and projects
- Management of grants and funding sources
- Real-time inquiries into capital improvement project progress

The *people management suite* manages the organization's workforce and provides automation to the human resources, payroll, time keeping, and applicant tracking functions. Employee self-service is also available to allow employees the flexibility in retrieving their information at their convenience. Benefits of a people management suite include:

- Paperless personnel forms
- One-time data entry
- Tracking or misplacement of employee paper files
- Incorporation of employee self-service (ESS)
- Integration between time keeping, payroll, HR, and financial management
- Quick and reliable reporting to federal and state agencies
- Improved employee satisfaction
- Automated Time Entry Approvals and Payroll Calculations
- Minimal steps between processing payroll and issuing direct deposits and checks

Employee Self-Service

Employee self-service (ESS) empowers employees to provide, change, and retrieve their personal information through an online employee portal, thereby reducing the manual interaction required with the Human Resources Department. ESS offers an online option for employees to access and manage information for themselves:



- Address changes
- Tax allowances changes
- Open enrollment benefits
- Dependent changes
- Leave/vacation accrual balances
- Electronic paystub copies
- Year-end W-2s
- Populating and retrieving time sheets
- Time requests
- Tax forms
- Many other forms and applications

Reporting

The number one problem that is commonly seen when utilizing disjointed applications is the extensive time users dedicate to the consolidation of information for reporting purposes. Enterprise systems allow information to be quickly retrieved from a single source with numerous readily available reports. Users are also able to create their own reports without requiring them to be technical experts. This allows staff to spend more time studying analytics rather than manually assembling reports. Benefits of improved reporting include:

- Aggregated data across divisions, departments, and organization
- Improved data accuracy and reduced human error
- Intuitive report creation capabilities
- Board-ready reports
- Sharing of created reports
- Elimination of labor-intensive report creation

Individual User Dashboards

Dashboards form part of a user's home page and display reports, key indicators, and other metrics regarding day-to-day operations, activities, and historical trends. Benefits of dashboards include:

- Quick links for immediate access to required tasks and approvals
- Easy modification of dashboards for each user's preference
- Automated generation of dashboard information
- Transformation of data into visual information
- Easy-to-understand graphics
- Real-time analysis
- Drill-down access to activity detail

Mobile Computing

Mobile computing provides the flexibility to operate a more mobile and productive workforce. An enterprise system can allow staff to utilize applications while in the field in order to perform their job functions while away from their office. Common benefits of mobile computing include:

- Completion of work while in the field
- Real-time access to information
- Inspection results in the field
- Receipt of notifications and job assignments
- Reduced travel to and from office locations
- Map routing based on location of activities
- Retrieval of mapping information
- Management of code enforcement cases in field

Online Citizen Access

Online citizen access enables a more transparent government by providing the public with 24/7 access to real-time information for inquiries and payment processing. This empowers residents to retrieve online information that is pertinent to each individual, and for them to take further actions, which improves customer relations by eliminating the need to be physically present at City Hall. The following are examples of online citizen access transactions:

- Online permit applications
- Submit and access plan review comments
- Online payments
- Submit complaints
- Submit citizen requests
- Submit inspection requests
- Access to inspection results
- GIS maps (zoning, voting cities, etc.)

Citizen Request Management

A *citizen request management system* is used to track, manage, and resolve citizen concerns and requests in a timely manner by automatically routing citizen requests to the appropriate department. It also provides the citizen with the flexibility to submit and track their complaints through the Web or a mobile phone application. Common benefits of a citizen request management system include:

- Ability for citizens to submit requests 24/7 through a phone application or the website
- Automatic assignment and routing of requests, by type, to appropriate department(s) or staff
- Ability for citizens to view current request status
- Conversion of requests to work orders
- Ability to include photos and geolocation of a request
- More effective and efficient processes
- Improved transparency and citizen relationships

Land Management

The Land Management system is one of the suites that are offered by enterprise application systems and manages the creation, issuance, and tracking of community development activities related to planning and zoning, permitting, building inspections, licensing, and code enforcement. Benefits associated with the utilization of the application include:

- More automated permit processing from application through permit issuance
- Automatic routing for permits requiring reviews and approvals
- Single electronic file for all permit applications and documents
- More automated tracking of reviews, inspections, and fees by permit and development projects
- Tracking of timelines, tasks, and required group reviews
- Viewing all project and permit information at a glance
- Readily accessible planning and zoning records
- Automatic generation of case documentation
- Centralized current and historical parcel information

GIS Integration

Enterprise systems offer real-time integration to *geographic information systems (GIS)* in order to display land-use, zoning, and infrastructure layers on a map, as well as parcel, permit, inspection, code enforcement, and work order activity that resides within the enterprise system. Benefits of *GIS integration* include:

- Viewing system activity on a map (e.g., active projects, permits, cases, etc.)
- Map routing of work orders, service request, and daily inspections
- Displaying locations of infrastructure assets
- Generating asset condition analysis
- Ability to overlay multiple map layers
- Integration to website for resident inquiries

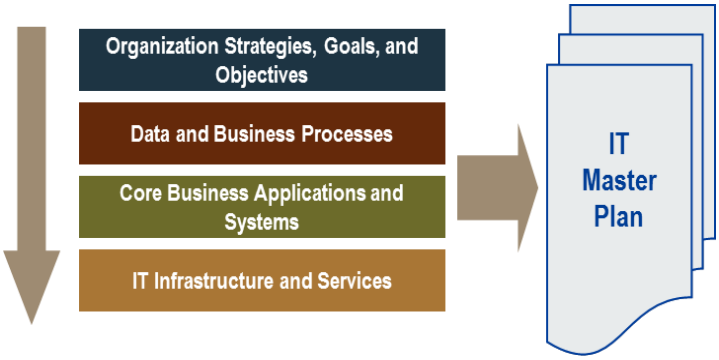
Maintenance/Work Order Management

Another suite of an enterprise system is the *maintenance/work order management system*, which provides automation in managing the maintenance and day-to-day operations related to infrastructure assets, buildings, facilities, and fleet vehicles, while being able to capture and report on the labor, equipment usage, and materials costs associated with a work order and preventative maintenance. System benefits include:

- Electronic routing of citizen requests
- Centralized task and maintenance management
- Completion of work orders from the field
- Streamlined public works operations
- Retrieval of historical work order information and costs
- Quicker work order completion times
- Improved decisionmaking through access to real-time information
- Viewing of asset and activity trends visually through GIS mapping capabilities
- Better replacement planning and forecasting
- Enhancement of staff productivity
- Improved compliance with regulatory standards
- Improved safety and risk management

Conclusion

Moving Forward



Moving forward, over the next 18 to 24 months, the focus of Information Technology should be on infrastructure upgrades as well as training and increasing IT support staff to meet the needs of 21st Century technology. Software application improvements should also be considered, and the City should proceed after a ranking and sequencing the Top Priority initiatives identified in the Plan. While some software applications improvements are possible during this time, major software system utilization improvements and replacement system implementations must follow the initial focus on infrastructure. IT must work to position itself in the following ways:

IT Infrastructure – Follow best practices in performing the Computer Room Relocation, the Network Redesign, and the core Switch Replacement.

IT Staffing – The IT function does not have the staffing and training to update and maintain the existing City infrastructure primarily regarding the City's network. The City is also focusing IT management on the maintenance and support of the existing core software applications. The addition of a Enterprise Applications Support Specialist will provide long-term benefits and increase application utilization and organizational productivity. The Network/Systems Engineer will provide needed resources to improve and maintain network management, design, and security.

Application Utilization – City departments want to improve their core business processes and fully utilize their applications. The City should work to encourage a sense of application ownership and continuous improvement by the departments. Improved application utilization is one of the most effective ways to increase staff productivity and customer service.

ERP Replacement – The entire effort to select and implement a new ERP solution to replace existing Cayenta and other core systems will logistically require two years. The City needs to ensure that all its applications needs have been identified and that appropriate funding has been budgeted for a replacement ERP by conducting a comprehensive needs assessment and developing a Request for Proposals (RFP). Additionally, because *the City has not conducted this type and complexity of project with these specific business analysis, documentation, and negotiation requirements, the City should obtain assistance from a municipal ERP Applications Subject-Matter Expert (SME)*.

Governance – The formation of the internal IT Steering Committee will foster cooperation and collaboration in setting priorities and executing multi-department initiatives. Over the long run, the IT Steering 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.

Third-party Subject-Matter Experts (SMEs) 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 solutions, responsible individuals, and target due dates. These action plans can ensure that all needs are being addressed and/or that a decision has been made not to pursue an initiative. 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 continuously guide the information technology activities of the City. The annual IT Master Plan update should be synchronized with the City's annual budget process, so the City's IT Plan initiative costs can be properly represented in the City's annual budget.

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

It is recommended that the IT Steering Committee begin work by reviewing the plan and priorities, including the ranking and sequencing of the "Top Priority" initiatives. Next, assign lead and participatory resources to these Top Priority IT initiatives and also to all other high-priority IT initiatives. This should include the finalization of 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 as part of each agenda.

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

In order to improve the culture of application utilization, management, and support, it is also recommended that a series of training seminars be developed for all key department stakeholders and all enterprise business application users throughout the organization. This is an effective way to maintain momentum and kick off the tremendous change that is to occur in improving operations and constituent services.

IT Master Plan Capital Budget

The IT Master Plan budget on the following pages is NOT an entirely new set of spending requirements. The plan encapsulates all information technology issues and needs of all departments in the City. Some projects, initiatives are normally funded by departments themselves, some initiatives already have capital reserves set aside and others are part of normal annual IT budgeting.

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IT Master Plan Capital Budget

Project / Initiative Budget Estimates

Initiative #	IT Initiative	Comments	Priority	Budget Range		Dept(s)	Funding Source(s)	Current 2016 Fiscal Year	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021	Outlying Yrs (Capital Expend)
				Low	High									
Best Practices														
1	Return-on-Investment Considerations	Providing tools and staff training, including working on several project examples.	H	$ 5,000	$ 10,000	All Departments			$ 5,000					
2	IT Governance	Assist in establishing a Steering Committee with roles and responsibilities. Educational Seminar for Steering Committee Members and providing tools and next steps. Possibly facilitating first several months of Steering Committee meetings.	H	$ 5,000	$ 15,000	All Departments			$ 10,000					
3	COBIT	Standards	H	n/a	n/a	All Departments			n/a	n/a	n/a	n/a	n/a	
4	ITIL	Standards	H	n/a	n/a	All Departments			n/a	n/a	n/a	n/a	n/a	
5	Applications Management Best Practices	Providing tools and staff training. Establishing roles and responsibilities for enterprise applications.	TP	$ 7,500	$ 15,000	All Departments			$ 10,000					
6	Applications and User Licensing Inventory	Providing tools and staff training	H	$ 1,000	$ 5,000	All Departments			$ 5,000					
7	User Training and Support	Annual Recurring	H	$ 25,000	$ 75,000	All Departments			$ 25,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000	
8	Training Room	Computers and equipment	M	$ 10,000	$ 15,000	All Departments			$ 12,000					
9	Software Selection Best Practices	Standard methodology and practices	H	n/a	n/a	All Departments			n/a	n/a	n/a	n/a	n/a	
10	Project Planning and Implementation Best Practices	Providing tools and staff training	H	$ 1,000	$ 5,000	All Departments			$ 5,000					
11	Maintaining Software Updates	Standards	H	n/a	n/a	All Departments			n/a	n/a	n/a	n/a	n/a	
12	IT Project and Services Portfolio	Documenting IT Department roles and responsibilities for all services including SLA for business application support	H	$ 1,000	$ 25,000	IT & Finance			$ 15,000					
13	Sustainability Planning	Providing tools and staff training	H	$ 5,000	$ 15,000	All Departments				$ 10,000				
14	Cloud Computing	Standards	H	n/a	n/a	IT & All Departments			n/a	n/a	n/a	n/a	n/a	
15	Centralized Land and Parcel Management	Included in developing GIS Master Plan Initiative	TP	See below	See below	All Departments			see below	see below	see below	see below	see below	
Applications and Departmental Systems														
16	Enterprise Resource Planning (ERP) Replacement	Includes the indented initiatives below:	TP	$ 1,000,000	$ 2,000,000	All Departments			$ 85,000	$ 1,000,000	$ 500,000	$ 250,000		
17	Project and Grant Accounting	Included in ERP initiative	TP	Included with ERP		All Departments								
18	Contract Management	Included in ERP initiative	TP	Included with ERP		All Departments								
19	Cashiering Needs Assessment and Replacement	Included in ERP initiative	TP	Included with ERP		All Departments								
20	Work Orders/Maintenance and Asset Management System	Included in ERP initiative	TP	Included with ERP		All Departments								
21	Fleet Management	Included in ERP initiative	TP	Included with ERP		All Departments								
22	Land Management System Replacement	Included in ERP initiative	TP	Included with ERP		All Departments								
23	Electronic Plan Submittals and Reviews	Included in ERP initiative	TP	Included with ERP		All Departments								
24	Human Resources System Improvement or Replacement	Included in ERP initiative	TP	Included with ERP		All Departments								
25	Employee Self-Service	Included in ERP initiative	TP	Included with ERP		All Departments								
26	Time, Attendance, and Accruals Tracking	Included in ERP initiative	TP	Included with ERP		All Departments								
27	Performance-Evaluation Software	Included in ERP initiative	TP	Included with ERP		All Departments								
28	Applicant Processing	Included in ERP initiative	TP	Included with ERP		All Departments								
29	Training and Certification Management Software	Included in ERP initiative	TP	Included with ERP		All Departments								
30	Staff Scheduling System	Included in ERP initiative	TP	Included with ERP		All Departments								
31	Project and Construction Management	Software & Implementation	H	$ 50,000	$ 200,000	City Manager, HR, Public Works. Finance				$ 80,000				
32	Parks and Recreation Software Replacement (eGov)	Will follow the ERP initiative and will include the indented initiatives below:	TP	$ 150,000	$ 400,000	Comm Serv, Finance				$ 75,000	$ 150,000	$ 100,000		
33	Citywide Facilities Scheduling/Events Calendar	Will coincide with the implementation of the new Parks & Recreation System	TP	Included Park & Rec System										
34	Childcare Management System	Will coincide with the implementation of the new Parks & Recreation System	TP	Included Park & Rec System										
35	Electronic Content Management System (ECMS) Replacement	Includes the indented initiatives below:	TP	$ 250,000	$ 1,000,000	All Departments				$ 75,000	$ 200,000	$ 75,000	$ 75,000	
36	Agenda Creation and Management Software	Included in ECMS initiative	H	Included with ECMS System										
37	Legislative Management	Included in ECMS initiative	H	Included with ECMS System										

CLIENTFIRST TECHNOLOGY CONSULTING

IT Master Plan Capital Budget

Project / Initiative Budget Estimates

Initiative #	IT Initiative	Comments	Priority	Budget Range		Dept(s)	Funding Source(s)	Current 2016 Fiscal Year	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021	Outlying Yrs (Capital Expend)
				Low	High									
38	Granicus Media Management Assessment (Replacement)	Included in ECMS initiative	M	Included with ECMS System										
39	Large-File Sharing Tool	Could Use "OneDrive" from Office 365 (however how do we exchange outside of organization)	M	$ 2,500	$ 7,500	City Manager, Comm Dev, HR, Public Works					$ 2,500	$ 1,500		
40	Video Capture and Editing (Video Events and Other)	Investigate the opportunity to use ECMS capabilities	L	$ 35,000	$ 85,000	City Manager, Comm Serv, Library						$ 45,000		
41	Photo Management and Storage Software	Investigate the opportunity to use ECMS capabilities	L	$ 20,000	$ 50,000	Comm Serv						$ 30,000		
42	Publishing Software Consolidation	Move to a single software tool as a City standard	L	$ 10,000	$ 15,000	City Manager, Comm Serv, HR, Library							$ 15,000	
43	Real-Time Utility Usage (Automatic Meter Reading-AMR)	AMR systems can run from $2M - $7M for a City the size of Menlo Park. The costs shown are for the first two (2) years of the project. Costs will extend into the next 5 year planning cycle.	L	$ 2,000,000	$ 5,000,000	Public Works, Finance								$ 2,500,000
44	Website Improvements	Services from outside resource to assist the City	M	$ 35,000	$ 50,000	All Departments				$ 20,000	$ 15,000			
45	Notifications System (Push/Social Media/Text)	City standard tool to manage all City notification needs (emergency & non-emergency). Annual prescription per year.	H	Annual Subscription Based		All Departments				$ 15,000	$ 15,000	$ 15,000	$ 15,000	
46	Develop GIS Master Plan	GIS Master Plan Development including centralized parcel & address recommendations	TP	$ 60,000	$ 80,000	All Departments			$ 40,000	$ 20,000				
47	Department-Centric / GIS Self-Service	Outside Resource to assist in building application and train Depts on independent use	H	$ 30,000	$ 50,000	Comm Dev, Library, Public Works			$ 15,000	$ 30,000				
48	RIMS (CAD/RMS) Gap Analysis and Application Maximization	Outside Resource to provide assistance in gap analysis and plan to close gap	M	$ 40,000	$ 75,000	Police				$ 40,000	$ 20,000			
49	Alarm Tracking and Billing Software	In progress	L			Police								
50	Ticket Writer Software Replacement (Duncan to TDS)	In progress	L			Police								
51	Officer Radio Transmission Identification		L			Police								
52	Replace MDC's with RIMS Mobile/GIS System		M			Police								
53	Tow Company Billing System	Software & Implementation	L	$ 2,500	$ 7,500	Police						$ 2,500	$ 15,000	
54	FirstNet Preparation Planning	Operational/Preparation Costs	M	$ 1,500	$ 3,000	Police					$ 1,500	$ 1,000		
	Other Application and Departmental Systems Initiatives (Initiatives below)													
55	Police Audiovisual Format Conversion Tool		M	$ 1,000	$ 1,500	Police				$ 1,000	$ 500			
56	Panic Button	Include with City Hall remodel and space planning (on PD's project list)	H	$ 1,000	$ 2,000	Police			$ 1,500	$ 500				
57	Penal Code/Vehicle Code Reference Software	investigating if the RIMS Replace MDC's GIS Initiative includes Penal Code Reference	M	See above	See above	Police			See above	See above	See above	See above	See above	
58	Portable Wireless Camera for Surveillance	Two portable Cameras, with compatibility for body storage environment	M	$ 1,000	$ 2,000	Police					$ 1,000	$ 1,000		
59	Wireless PA Radio PA/Sound System	PA system for outdoor events music, MC activities, etc.	M	$ 3,000	$ 5,000	Comm Serv					$ 3,000	$ 1,000		
60	Instant Messaging	Include with Office 365, cost for Skype for Business	L	Annual Subscription Based		All Departments					$ 12,000	$ 12,000	$ 12,000	
61	PA Announcements	Important to the Library. Cost is based on adding PA capabilities through existing phone system	L	$ 10,000	$ 20,000	Library				$ 20,000				
62	Parking Sensors and Management	Sensor based Parking Management Systems with mobile phone access can cost from $1M - $5M for a City with city owned parking the size of Menlo Park. The costs shown are for the first year (year 1 only) of the project. Costs will extend into the next 5 year planning cycle.	L	$ 1,000,000	$ 5,000,000	Comm Serv								$ 1,500,000
63	Constituent Satisfaction Surveys	Investigate if CivicPlus has this capability. Use CivicSend module of CivicPlus	M	$ 5,000	$ 10,000	City Manager, Comm Serv, Comm Dev					$ 10,000			
64	Laptop Borrowing Program	Acquisition of 3-5 laptops with carrying cases	L	$ 4,000	$ 6,000	Library						$ 3,000	$ 2,000	
65	Library Subscription Provider Statistics	Outside Resource to help with the reporting necessary for gathering/assembling statistics	M	$ 5,000	$ 10,000	Library					$ 4,000	$ 3,000		
66	HVAC Zonal Climate Control System	Remote access by staff of Library HVAC monitoring and control	L	$ 8,000	$ 12,000	Library						$ 6,000	$ 3,000	
Gov 2.0														
67	Citizen Request Management (CRM)	Considering module from the ERP/Land Management Initiative	M	See above	See above	All Departments			See Above	See Above	See Above	See Above	See Above	
68	Online Payments, Transactions, and Services	See ERP	H	See above	See above	All Departments			See Above	See Above	See Above	See Above	See Above	
69	Video/Web Conferencing	City to Investigate Office 365 using Skype for Business. Linked and Dependent on Network Redesign. Annual Subscription for video/web conferencing from City conference rooms.	L	Annual Subscription Based		All Departments					$ 1,800	$ 3,600	$ 6,000	
70	Council Chambers Audiovisual Systems	In progress	L	$ 15,000	$ 30,000	City Manager, City Council, Departments		$ 20,000						

CLIENTFIRST TECHNOLOGY CONSULTING

IT Master Plan Capital Budget

Project / Initiative Budget Estimates

Initiative #	IT Initiative	Comments	Priority	Budget Range		Dept(s)	Funding Source(s)	Current 2016 Fiscal Year	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021	Outlying Yrs (Capital Expend)
				Low	High									
71	Conference Room Audiovisual	In progress. Linked and Dependent on Network Redesign. Annual Subscription for video/web conferencing from City conference rooms. Cost based on 5 conference rooms at $5,000 - $7,500 per room.	L	$ 25,000	$ 40,000	All Departments		$ 30,000						
72	Social Media Policy and Procedures	This needs to include Risk Management and City Attorney. Cost is for outside resource to assist in the development of policies and procedures.	H	$ 2,500	$ 7,500	All Departments			$ 7,500					
73	Mobile Computing	See Work Orders, Land Management and ERP	H	See above	See above	Comm Serv, Comm Dev, Public Works			See Above	See Above	See Above	See Above	See Above	
74	Newsletter	Considering using CivicPlus CivicSend capabilities - See Website Improvements above	L	See above	See above	All Departments, Citizens, the Public			See above	See above	See above	See above	See above	
75	Dual Monitors	Part of replacement policy, cost effective and high ROI	M	n/a	n/a	All Departments			n/a	n/a	n/a	n/a	n/a	
IT Infrastructure														
76	IT Computer Room and Teledata Closet Improvements	Computer rack spacing from wall insufficient, no fire suppression	TP	$ 150,000	$ 250,000	IT			$ 220,000					
77	Wireless Network	Two generations behind,	H	$ 100,000	$ 150,000	All Departments			$ 158,400					
78	Internet Bandwidth	Sufficient today	L	$ 50,000	$ 100,000	All Departments					$ 94,600	$ 24,000	$ 24,000	
79	Electronic Mail (Exchange)	Build out DAG for Exchange, need Archive & Records Retention	H	$ 10,000	$ 15,000	All Departments			$ 30,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000	
80	Enhanced Internet Security and Connectivity (DMZ)	Improved filtering subscription, staff to complete SFTP	H	$ 1,500	$ 2,500	IT			$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500	
81	Remote Access Upgrade	Remote access for staff	H	$ 10,000	$ 20,000	All Departments			$ 20,000					
82	Network Redesign	Resiliency, firewalls to separate PD & SCADA	TP	$ 200,000	$ 400,000	All Departments			$ 275,000	$ 100,000				
83	Core Switch Replacement	Core switch replacement (current to be re-allocated)	H	$ 100,000	$ 150,000	All Departments			$ 220,000					
84	Power Distribution	Do in conjunction with computer room remodel	M	$ 5,000	$ 7,500	IT			$ 15,000	$ 7,500				
85	Virtual Server Migration	Vmware & OS Licensing Upgrades, Vmotion and additional servers	M	$ 50,000	$ 125,000	All Departments			$ 101,200	$ 50,000				
86	Storage Area Network (SAN) Upgrade	Replacement SANs - Administration first,	M	$ 75,000	$ 125,000	All Departments			$ 163,240	$ 100,000		$ 50,000		
87	Technology Support for the EOC	Video display & wireless upgrade	M	$ 25,000	$ 60,000	IT, EOC			$ 5,000	$ 25,000	$ 25,000			
88	Redundant CAD/RMS System	Backup virtual instance in separate computer room	M	$ 25,000	$ 25,000	IT, Police					$ 25,000			
89	Computer Upgrades (Windows XP & Office)	Windows XP Cleanup & Consistent version of Office	H	$ 27,000	$ 27,000	All Departments			$ 30,000					
90	Video Camera and Surveillance System (Citywide Standard)	Initially, centralized management system, then expand	M	$ 200,000	$ 400,000	IT, Police			$ 115,000	$ 50,000	$ 50,000	$ 25,000	$ 25,000	
91	Secure Managed Access (Wireless/Keyless Security)	Consolidate two systems into one & expand card reader	M	$ 25,000	$ 75,000	IT, Police				$ 50,000	$ 25,000			
IT Operations														
92	Help Desk Ticketing System	Spiceworks will be sufficient	H	$ -	$ 6,000	All Departments			$ 6,000					
93	Mobile Device Management	MAS360 integrates with Spiceworks	M	$ 2,500	$ 7,500	All Departments				$ 5,000				
94	Network Management Tools (Alerts/Alarms)		M	$ 25,000	$ 50,000	IT				$ 25,000	$ 25,000			
95	IT Support Metrics		M	$ -	$ 6,000	All Departments				$ 6,000				
96	Desktop Management	Desktop patch management	H	$ 15,000	$ 25,000	All Departments			$ 11,000	$ 6,000				
97	IT Automation Tools (Patch Management)	Expand patch management to servers & network equipment	M	$ -	$ 6,000	All Departments				$ 6,000				
98	IT Policies and Procedures		TP	$ 5,000	$ 7,800	IT			$ 7,800					
99	IT Procurement Practices		M	n/a	n/a	IT			n/a	n/a	n/a	n/a	n/a	
100	IT Cost Recovery (IT Budget Allocations)		M	n/a	n/a	IT, City Manager, Finance			n/a	n/a	n/a	n/a	n/a	
IT Security														
101	Disaster Recovery Planning		M	$ 10,000	$ 25,000	All Departments					$ 15,000			
102	Backups	Move to disk to disk to cloud	H	$ 50,000	$ 100,000	IT			$ 75,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000	
103	IT Security Assessment		M		$ 25,000	All Departments					$ 25,000			
104	PCI Compliance		M	$ 10,000	$ 25,000	Finance, All Departments					$ 10,000	$ 15,000		
105	Records and Data Retention		M	$ 15,000	$ 20,000	All Departments						$ 18,000		
106	Two-Factor Authentication	Vendors - PD	H	$ 12,000	$ 18,000	IT, Police			$ 15,000					
107	SCADA Security	Firewall are above	H	$ 5,000	$ 15,000	IT, Pub Works			$ 11,000					

CLIENTFIRST TECHNOLOGY CONSULTING

IT Master Plan Capital Budget

Project / Initiative Budget Estimates

Initiative #	IT Initiative	Comments	Priority	Budget Range		Dept(s)	Funding Source(s)	Current 2016 Fiscal Year	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021	Outlying Yrs (Capital Expend)
				Low	High									
Telecommunications														
108	Phone System Redundancy		**M**	$ 25,000	$ 50,000	All Departments				$ 35,000	$ 2,000	$ 2,000	$ 2,000	
IT Staffing														
109	Network/Systems Engineer		**TP**	$ 100,000	$ 125,000	IT			$ 182,000	$ 187,460	$ 193,084	$ 198,876	$ 204,843	
110	Enterprise Applications Support Specialist		**H**	$ 126,000	$ 161,000	IT, All Departments			$ 140,000	$ 144,200	$ 148,526	$ 152,982	$ 157,571	
								$ 50,000	**$ 2,039,140**	**$ 2,378,610**	**$ 1,651,010**	**$ 1,111,957**	**$ 632,914**	**$ 4,000,000**

Appendix – IT Master Plan Initiatives

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

Information Technology Master Plan

Appendix: IT Initiatives

February 1, 2017

Optimal Technology Guidance

Client Locations
Coast-to-Coast

Practice Locations
California
Illinois
Minnesota
North Carolina

800.806.3080
www.clientfirstcg.com

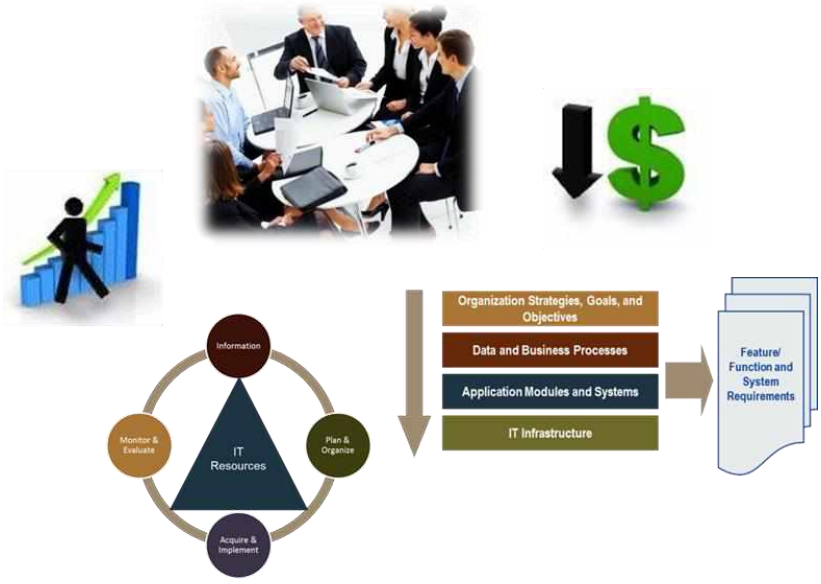
CLIENTFIRST
TECHNOLOGY CONSULTING

Table of Contents

Best Practices

Best Practices are methods that consistently provide results greater than those achieved with other methods. We believe that the following best practices will enhance the City's ability to select, procure, and maintain solutions that are more effective in the future, as well as improve overall productivity of staff.

1. Return-on-Investment Considerations
2. IT Governance
3. COBIT
4. ITIL
5. Applications Management Best Practices
6. Applications and User Licensing Inventory
7. User Training and Support
8. Training Room
9. Software Selection Best Practices
10. Project Planning and Implementation Best Practices
11. Maintaining Software Updates
12. IT Project and Services Portfolio
13. Sustainability Planning
14. Cloud Computing
15. Centralized Land and Parcel Management



1. Return-on-Investment Considerations

IT Infrastructure, Operations, and Support

Limiting the number of software and technology vendors supporting City functions will decrease IT infrastructure, operational costs, and support costs in the medium-to-long term. The following is a list of technology areas impacted when determining the number of applications necessary to support and maintain an organization's core business solutions:

- **Hardware** – Servers required to house the applications
- **Software** – Additional software, such as key operational software applications, and the number of different database tools required to support core applications
- **Licensing** – Increased licensing due to an increased number of vendor applications and various associated database tools
- **Business Continuity** – Increased Disaster Recovery Planning effort, testing, and recovery complexity to support multiple-vendor applications
- **Support Costs** – IT support costs for hardware and software as vendor application volumes increase
- **Operation Costs** – Increased training for employees to meet expertise requirements as more vendor applications and different database tools are introduced

Further analysis outside of the scope of this project would be required to determine specific potential cost savings.

Departmental Labor Costs

Many organizations do not adequately understand the impact that improved automation—and the resulting reduction in manual processes and shadow systems—will have when considering implementation of new systems or conducting process improvement analysis. Most productivity analyses show that, over time, labor cost savings far exceed the cost of reasonable automation efforts. The savings associated with the avoidance of one new hire or the elimination of a position due to natural attrition may be $40,000 to $70,000 or more per year (including total payroll, taxes, benefits, and other costs). The life of some new systems should be over ten years, making the savings from the avoidance of just one new hire and/or elimination of vacant positions the equivalent of $400,000 to $700,000 over ten years. Ten years should be the minimum expected life cycle for major/large applications systems.

Return-on-Investment (ROI) for Applications Systems

Improved utilization of applications systems can result in immediate and sustained savings in time spent performing specific tasks or processes. These individual improvements do not always equate to immediate, "hard" savings. They may result in intangible benefits to the City, the population that the City serves, or cumulative savings from reduced long-term personnel needs.

User Training and Support

Applications software is continually evolving. Improvements and enhancements are made yearly. Maintaining staff efficiency and improving productivity over time requires ongoing training of all staff. Users are typically not trained on all aspects or capabilities of particular software applications or other technology-based tools during initial implementation. Therefore, it is important for the organization to develop methodologies to carry out functionality use, reporting, and training requirements in order to utilize the City's important technological assets to their fullest potential over time.

Calculation Examples

Whenever possible, we recommend that staff calculate tangible and intangible benefits when requesting approval for a project. The following calculations can be utilized in those efforts. We believe in being conservative and practical. Exhaustive ROI studies should not be necessary. Focusing on a limited number of reasonable examples, as outlined here, should normally be sufficient to provide adequate justification for strategic projects.

Labor Efficiency Savings	**=**	**Labor Hours Saved X Gross Hourly Rate**
Tangible Labor Cost Savings	**=**	**New hire avoidance, elimination of position through attrition, consolidation of work load and positions, etc.**

Hard Cost Savings

- Hardware
- Software
- Maintenance
- Inventory Reductions

Intangible Benefits

- Increasing Levels of Service
- Improved Service to Public Users
- Safety
- Transparency
- Improved Public Communication
- Improved Employee Communication and Satisfaction
- IT Planning and Improvements

Return-on-Investment (ROI) Considerations

A study conducted by Macquarie University[1] discovered the following:

- Overall ROI in IT projects is around 30%.
- The projects that deliver at least some benefits should be about 52.5%.
- Successful IT projects can have an ROI of around 400%.

[1] Macquarie University, 2006.

2. IT Governance

Findings and Observations

The City requires cooperative technology to meet its goals. The Information Technology Master Plan implementation provides a great opportunity for City departments to collaborate on future technology use and applications.

IT Governance

Traditionally, key IT decisions are made by IT professionals and a select few organization managers. This does not always ensure the most effective benefit to all stakeholders (all departments and constituents). IT governance can provide a collaborative forum 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.

IT Steering Committee

The IT Steering Committee is a group of employees and managers from a variety of departments and disciplines that provide long-term direction and oversight for an organization's IT resources. This committee can provide a stabilizing influence and focus for development of organizational concepts and planning. Some of the responsibilities the group may carry out include:

- Identifying and developing of technology initiatives
- Prioritizing initiatives
- Monitoring and reviewing initiatives
- Project management of IT Master Plan implementation
- Providing a forum for lessons learned during implementation of technology projects
- Providing an initial review process of technology-related projects requested by individual departments
- Reviewing and providing feedback on long-term unresolved Help Desk issues
- Developing and reviewing standards and policies
- Updating standards and policies as changes occur in the organization and technology
- Helping to achieve support across the organization
- Reviewing Help Desk statistics, issues, and long-term unresolved needs
- Acting as a sounding board for management and staff

Implementation of IT Governance can be an effective forum for departments to become more knowledgeable about technology and how it can be used effectively to enhance customer service and create efficiencies throughout the City's business process environments.

Recommendations

Assemble and formally implement an IT Steering Committee, including an IT Steering Committee Charter, to discuss technologies and recommend priorities, assist in policy development, communicate with department staff, and manage, as well as oversee the implementation of the IT Master Plan.

It is recommended that the City consider engaging *CLIENTFIRST* to review the IT Steering Committee Charter in order to make specific recommendations and to assist in conducting a Steering Committee Development Workshop, including make-up of Steering Committee

members and structure, as well as review Steering Committee roles and responsibilities. As part of the same engagement, *CLIENTFIRST* would also conduct a workshop to cover and educate on Steering Committee best practices.

Utilize the IT Steering Committee as the initial forum for the IT Division and other Departments to propose/present new technology-related projects to ensure best practices are followed and applied to the review, selection, approval, procurement, implementation (project management), and ongoing technology maintenance.

The IT Governance strategy and implementation of an IT Steering Committee can be an effective forum for departments to become more knowledgeable about technology and how technology can be used effectively to enhance customer service and create efficiencies throughout the City's business-process environments.

Benefits

- More transparency, responsibility, and accountability
- Prioritization of initiatives
- Improved compliance and consistency
- Enhanced communication and collaboration
- Higher degree of business and technology alignment
- Widespread personal and professional growth

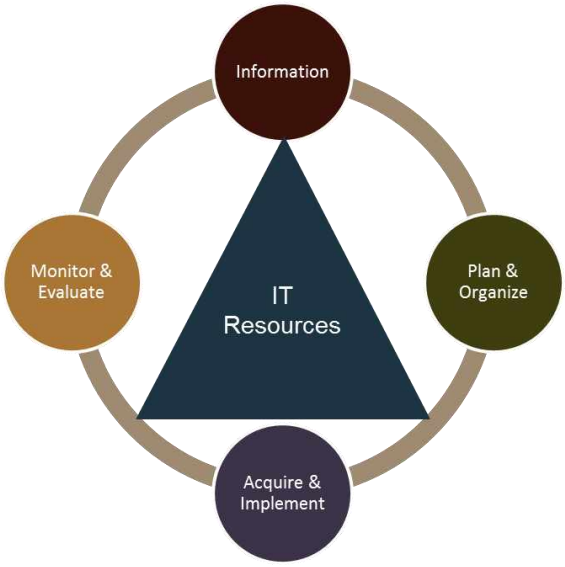
Next Steps

- Determine potential IT Steering Committee members who are:
  - Interested in participating on the Steering Committee
  - Have the ability to speak for Department Head
- Develop and implement an IT Steering Committee focused on:
  - Determining priorities, based on limited IT resources
  - Annual IT budget review and prioritization
  - IT policy reviews
  - New project reviews and feedback
  - Lessons learned from ongoing projects
- Determine representation of all departments on the Steering Committee for regular IT communication, ongoing education, and continued collaboration.
- Assign a lead and/or sub-committee for all IT Master Plan initiatives.
- Monitor and discuss active/in-process IT Master plan initiatives at each Committee meeting.
- Form sub-committees, as appropriate.

3. COBIT

Control Objectives for Information and related Technology, also known as COBIT, helps to ensure alignment of IT with the environment through the adoption of incentives, metrics, and oversight. IT governance is the responsibility of executives and the Board of Directors, and consists of the leadership and organizational structures and processes that ensure that the enterprise's IT sustains and extends the organization's strategies and objectives. For IT to be successful in delivering, management should put an internal control system or framework in place. The COBIT control framework contributes to these needs by:

- Making a link to the organization's requirements
- Organizing IT activities into a generally accepted process model
- Identifying the major IT resources to be leveraged
- Defining the management control objectives to be considered



The orientation of COBIT consists of linking organizational goals to IT goals, providing metrics and maturity models to measure their achievement, and identifying the associated responsibilities of organization and IT process owners. The benefits of implementing COBIT as a governance framework over IT include:

- Better alignment, based on an organizational focus
- A view of what IT does that is understandable by management
- Clear ownership and responsibilities, based on process orientation
- General acceptability with third parties and regulators
- Shared understanding among all stakeholders, based on a common language

COBIT is an IT governance framework and supporting toolset that allows managers to bridge the gap between control requirements, technical issues, and business risks. COBIT enables clear policy development and best practices for IT control throughout organizations. COBIT emphasizes regulatory compliance, helps organizations to increase the value attained from IT, enables alignment, and simplifies implementation2. *CLIENTFIRST* utilizes the concepts from COBIT throughout its IT Planning process.

[2] www.isaca.org – COBIT, 2009.

Staff Feedback

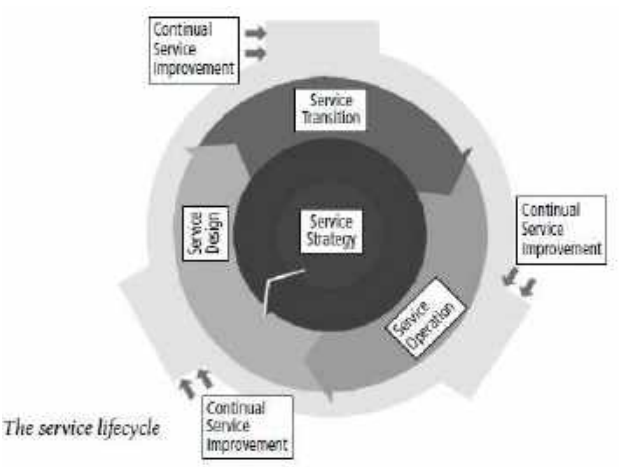
- IT – IT has had challenges with COBIT especially when it comes to citywide planning of best practices framework. Organizational requirements often are not defined or audited.

Benefits

- Reduction in unplanned work
- Increase in number of successful changes
- Improved operations management
- Secure sharing of infrastructure and asset information
- Increased anticipation and management of technology upgrades
- Reduction in total cost of ownership

4. ITIL

This lifecycle approach to IT organization results in strategies that align service management with business strategy, structures IT services to meet the real business environment, and builds a support model for the day-to-day procedures needed to support business objectives. Through an understanding of Information Technology Infrastructure Library (ITIL) and how it relates to IT operational environments, *CLIENTFIRST* can identify the strategy and resources needed to accomplish the business objectives based on the current structure of the IT Division.



The service lifecycle

ITIL provides a common framework understood by suppliers, clients, vendors, and businesses through a set of global standards. *CLIENTFIRST* utilizes these concepts for service delivery throughout its IT planning process to provide a sound approach to support IT initiatives[3]. ITIL is a framework intended to assist organizations with the alignment of IT operations with business objectives through an IT service strategy of continuous realignment. ITIL is considered a best-practice approach to IT service delivery that can be molded to fit all organizational structures. ITIL v3 groups IT service into four (4) categories: Strategy, Design, Transition, and Operation. *CLIENTFIRST* recommends that all IT Managers obtain at least foundational certification in ITIL.

Benefits

- Reduction in unplanned work
- Increase in number of successful changes
- Improved operations management
- Secure sharing of infrastructure and asset information
- Increased anticipation and management of technology upgrades
- Reduced recovery times
- Reduction in total cost of ownership
- Improved alignment of technology with business requirements and needs

[3] www.itil-officialsite.com – ITIL, 2009.

5. Applications Management Best Practices

Findings and Observations

The City utilizes over 136 different software applications or modules throughout all departments. Major systems include:

Application Functionality	Vendor
Financial/Accounting Management	Cayenta
Personnel Management	ADP Workforce Now
Land Management	Tidemark
Work Orders/Maintenance and Asset Management	None
Public Safety CAD/RMS	RIMS
Electronic Document and Records Management	ApplicationXtender
Geographic Information System (GIS)	Esri

A more comprehensive example listing of City applications is included below.

Note: This is not an official inventory.

- 3SI Technologied
- Adobe
  - Acrobat Reader
  - Acrobat XI Pro
  - Creative Suite/Cloud
  - Illustrator
  - InDesign
  - Photoshop
  - Premiere
- ADP Workforce Now
  - Employee Benefits Tracking
  - Human Resources
  - Payroll
  - Performance Evaluations
  - Time Tracking
- Alco-Sensor IV
- ALLDATA Online
- Apple iTunes
- ApplicationXtender
- ArborAccess
- BaseCamp
- BEC System
- Box.com
- Cal Photo
- CalOpps
- CalPERS
- Cayenta
  - Accounts Payable
  - Ad Hoc Reporting
  - Financial Reporting
  - General Ledger
  - Requisitions and Purchasing
- CCIN
- CDMIS
- Cellebrite
- Citrix work order system
- CivicPlus
  - Calendar
  - Intranet
  - Subscriber Notifications
  - Website Content Management
- CNIPS
- Comcate
- Cummins INSITE
- Digital Watchdog
- Direct Connect
- DOJ
- Dropbox
- Duncan Systems
  - Autocite
  - Autoissue
- eGov
  - Class Registrations
  - Email Marketing
  - Reporting
  - Room Rentals
- ENERCALC
- Esri
  - ArcCatalog
  - ArcMap
- Eventbrite
- Evernote
- Facebook
- Fill & Sign PDF Forms
- Firefox
- Ford Diagnostic Solutions
- Geocortex viewer for Silverlight
- Google Chrome
- Google Earth
- Google Maps
- Gov QA
- Granicus
- HdL Prime
- Hub Manager
- Innovative Sierra
- Insight e-Tools
- MAC Final Cut Pro
- Microsoft
  - Access
  - Excel
  - Internet Explorer
  - Outlook
  - Paint
  - PowerPoint

- Project
- Publisher
- Skype
- SQL Server
- Word
- MP GIS
- Musco Control-Link
- Open Budget
- Paypal
- PBT Group TEAMS
- Phoenix
- Print Wizard
- QuickReg
- QwikRegister
- Rain Master, Evolution II
- RD Client
- Redflex Traffic Systems
- RIMS
  - CAD
  - CLETS
  - Digital Imaging
  - E911
  - Mapping
  - Mobiles
  - Property
  - Reports
  - RMS
  - Training
- Ron Turley and Associates (RTA)
- Sage
- SAM
- SCADA Wonderware
- ShoreTel Communicator
- Signage Manager
- SketchUp
- SmugMug
- SonicWALL / VPN
- SonicWALL
- SS-Verification Dept. Homeland Security
- SurveyMonkey
- Team Sideline
- TeleStaff
  - Comp Time
  - Scheduling
  - Shift Bidding
  - Shift Swaps
  - Vacations
- TextMe
- Tidemark
  - Code Enforcement
  - Mobile Inspections (TES/TIM)
  - Parcel/Address Management
  - Permits
- TM1
- Training Information Management Systems (TIMS)
- Trimble Field Service Management
- Turbo Data Systems
  - eAppeals
  - ticketPRO
- Verifone Omni 3730
- Vievu
- Virtual Merchant
- West Coast Arborist mobile app
  XC2

Many City software applications, modules, and systems are underutilized, resulting in loss of productivity due to manual processes, inefficient workarounds, and inefficient or unnecessary reconciliations. Additional user training is needed for many software applications (see *User Training and Support* initiative). The City does not have sufficient resources to document practices and procedures, develop needs for applications systems, prioritize needs, evaluate solutions, and identify sufficient implementation and ongoing management and support resources for these solutions. Additionally, the City has insufficient effective IT resources to ensure quality applications utilization, increase department process improvements, and gain significant efficiencies in labor throughout the organization.

Gaining greater utilization of the existing application modules is vital to significant increases in productivity by staff throughout the City. The ability to accomplish this is difficult because of limited resources and the diversity of applications providers in use.

Future Applications Management Best Practices

The City can benefit greatly by changing traditional applications management practices. Use of the following recommendations can lead to improved functionality, use, and increased overall productivity.

Future Applications Roles and Responsibilities

Applications support and management roles and responsibilities will have to be identified and assigned to departments' operational applications and modules. We recommend starting with:

- ERP (Finance and Accounting)
- Personnel Management
- Permitting
- Contact Management
- ECMS
- Work Orders/Maintenance and Asset Management
- CAD/RMS and Citations

PO = Process Owner(s)
SU = Super User(s)
AA = Application Analyst(s)
RW =Ad hoc Report Writer(s)

FL = Application Area Functional Lead (Liaison/Coordinator)
FF = Feature Function Reviewer(s)
NP = Needs Assessment/Software Selection Participants

IT = IT Responsibilities(Explanation)

	Financial Management						
	General Ledger	Budgeting	Bank Reconciliation	Project Accounting	Purchasing and Requisitions	Accounts Payable	Accounts Receivable
PO	John	Robbie	Thomas	Lorrie	Debbie	Robert	Evan
SU	John	Robbie	Denise	Thomas	Sherry	Pat	John
AA	John	Robbie	Denise	Thomas	William	Robert	Robert
RW	Jody	Robbie	Thomas	Lorrie	Debbie	Pat	Jerry
IT	Rich	Rich	Rich	Rich	Rich	Pat	Rich
FL	John	Robbie	Thomas	Lorrie	Debbie	Robert	Evan
FF	John Jody Rich	Robie Rich	Thomas Denise Rich	Lorrie Thomas Rich	Debbie Sherry William	Robert Pat	Evan Robert Jerry
NP	John Jody Rich	Robie Rich	Thomas Denise Rich	Lorrie Thomas Rich	Debbie Sherry William	Robert Pat	Evan Robert Jerry

Identification and assignment will help the City spot capable resources to fulfill the roles and responsibilities for Applications Management Best Practices in the future.

Process Owner

- Staff “resident expert” who is responsible for a given departmental process or function
- May also be responsible for oversight and delivery of the daily, weekly, monthly, and annual processes that the application or module is utilized to fulfill
- Primarily makes final decisions on process policies, procedures, and deliverables for their area of expertise
- Stays current with the applicable industry best practices, technology, and applications capabilities
- Stays current with existing applications vendors’ capabilities, offerings, and enhancements

Application Champion

- An expert on a specific application or module
- Possesses greatest knowledge of application or module
- Lead trainer or support person for other staff that utilizes application or module
- Usually has formal training and is responsible for application configuration setup and changes on an ongoing basis
- Often trained to provide ad hoc report writing capabilities for the application or module
- Stays current with the applicable industry best practices, technology, and application capabilities
- Stays current with existing application vendors’ capabilities, offerings, and enhancements

Business Process and Application Analyst

- Assigned to work with process owners, application champions, report writers, and users
- Reviews business processes, current utilization of application, manual processes, and shadow systems (i.e., spreadsheets and other databases) in an effort to increase automation, improve efficiencies, and increase utilization of the core business application
- Assists in the development of user, application, and process requirements
- Assists in developing and documenting standard operating procedures (SOPs)

***Note**: An Application Analyst may be a person already fulfilling one or more of the above roles.*

Ad Hoc Report Writer

- Aptitude to develop ad hoc reports using vendors' report writing tools, which may include third-party tools such as Crystal Reports, Cognos, or Microsoft SQL Server Reporting Services (SRSS)
- Assigned as the "go-to" person for ad hoc reports that other users cannot quickly generate on their own

IT roles and responsibilities should be defined by application module. Consider taking the following actions:

- Identify role of IT for a given application or module (primarily server and network support).
- Departments are to take as much responsibility as possible for applications management of modules utilized by their primary business-process functions, as the IT Division does not currently and will never have all the resources to fulfill all applications management support and maintenance roles for the entire organization.

Please note that the organization may not have an identified resource in some instances, and that some applications may not require certain roles. It is also likely that, in some instances, the same person(s) will fulfill more than one role for a given application/module.

Business Department Application Training

As applications software changes and grows in complexity, training staff to use software properly becomes more critical. We believe that a renewed emphasis on targeted staff training on the City's applications software will pay off significantly in increased staff effectiveness and productivity. An inventory of high-priority training is essential to achieve expected productivity. The City can identify and assess future training needs for all applications and users upon completion of an application/user matrix (see *Applications and User Licensing Inventory* initiative).

Staff Feedback

- HR – ADP's performance evaluation software is licensed but not implemented

Recommendations

- Departments should be encouraged to become more responsible for changes to application setup and configurations with assistance from IT. If department personnel are unable to make these changes, training should be provided.
- Training department personnel to perform their own simple report writing (basic listings and extracts in tabular form) is challenging, but beneficial. More complex reporting often requires specific understanding of database structures in the application. There is currently very limited capacity to provide such support from IT.
- Consider adding more specialized application/business analyst personnel and database administration to the IT Division to provide increased and improved applications support to departmental users for departmental business applications (e.g., ERP, Personnel Management, Permitting, ECMS, CAD/RMS, Work Orders/Maintenance Management etc.)
- Over time, we believe that applications utilization by departments will improve if applications sponsors (Process Owners and Application Champions) take a more active role in monitoring upcoming functionality improvements from new software releases that will benefit the City. In addition, it would be helpful if applications sponsors and sponsoring departments monitored and discussed applications usage with other peer organizations and entities to gather information and potential productivity improvements that could be incorporated into the City's systems.

- Specifically assign a process owner, application champions, primary business analysts, applications administrators (setup and configuration responsibility), and ad hoc report writers for each application or module.
- Key assignments should encompass responsibility for understanding industry best practices and solutions or processes available, and taking the lead in continually assessing and inventorying needs.
- Inventory current and future feature/function, reporting, training, and support gaps, and maintain improvement needs lists

Benefits

- Increased use of applications features resulting in higher return on software investment
- Higher degree of user independence and less reliability and cost for vendor assistance
- Identification of applications user roles and responsibilities
- Improved efficiencies and productivity
- Improved customer service

Next Steps

- Each department should complete Application/User Matrices for current and future applications usage and applications management roles, and IT Steering Committee should review completed matrices.
- Identify process owner(s) for each module, or insert “N/A” if not applicable.
- Identify application champion(s) for each module.
- Identify application analyst(s) for each module, or insert “N/A” if not applicable.
- Identify ad hoc report writers, or insert “N/A” if not applicable.
- Differentiate (e.g., by color shading, annotations, etc.) if individuals are expected to assume roles in future with additional training.
- Define IT Division roles and responsibilities for all applications or modules.

6. Applications and User Licensing Inventory

Findings and Observations

A citywide *applications and user inventory* can be helpful in understanding/confirming licensing compliance, over/under seat license needs, and identifying training and user roles mentioned in the *Applications Management Best Practices* initiative.

Recommendations

- Create an inventory of all organization software applications/modules currently in use, as needed. This is necessary for multiple initiatives/projects and developing and budgeting a multi-year user training budget.
- Identify all current user license holders, as well as those that need additional licenses.
- Determine which users that don't have a valid need for a license and determine if these licenses can be transferred to other users.
- Identify user's roles as "F" (Full), "I" (Inquiry), or "R" (Reporting Only).
- Recommend differentiating between current/licensed and non-current/non-licensed users, so that budgeting can be addressed for additional user-license requirements.
- Determine software applications that can be run centrally from a server or shared computer for infrequent users.
- Obtain ongoing sustainability cost estimates.
- Consider development of an IT Applications Support Portfolio to document departmental ownership and IT Division service-level agreements (SLAs).

Benefits

- Assurance that investment in licenses are matched to users truly in need
- Assurance that investment of licenses match the organization's software needs
- Better ability to identify potential integration requirements
- Ability to obtain proper support and reference information for licensed software
- Ability to better schedule and conduct training for staff, based on software usage
- Better, well-informed decision making for applications acquisitions or maintenance cancellations
- Potential reduction in applications license and maintenance fees by cancelling applications no longer in use
- Mitigation of legal risk from use of non-licensed software

7. User Training and Support

Software systems are tools utilized to conduct business operations. Like other tools (e.g., phones, audiovisual equipment, backhoes, plotters, equipment, etc.), gaining greater utilization of these tools through sufficient training and installation of other available software modules (tools) is key to significant increases in productivity and greater efficiency, as well as achieving cost savings in many areas.

Findings and Observations

- Software applications that are underutilized will gain significant increases in staff productivity if more training were provided.
- A complete inventory of all applications and/or modules by department and user does not currently exist.
- This list can be helpful in understanding and confirming licensing compliance, over/under seat license requirements, and identifying training needs and user-responsibility roles, as discussed in the *Applications Management Best Practices* initiative.
- Examples of requested training are included below.

Staff Feedback

- CMO – Need training on Photoshop
- CMO – Need training on Basic GIS
- CMO – Need training on Granicus
- CMO – Need training for staff on new technologies
- Comm. Dev. – Need training on Microsoft Office (Word/Excel/PowerPoint)
- Comm. Dev. – Need training on Tidemark (+ any successor permitting system)
- Comm. Dev. – Need training on Adobe Acrobat
- Comm. Dev. – Need training on SQL Server/other database systems
- Comm. Dev. – Need training on updating menlopark.org website
- Comm. Dev. – Need training on Social media/other new communications methods
- Comm. Dev. – Need training on existing scanning equipment
- Comm. Serv. – Need training on eGov
- Comm. Serv. – Need training on branding standards
- Comm. Serv. – Need training on website use
- Comm. Serv. – Need training on MS Office applications
- Comm. Serv. – Need training on graphic design
- Comm. Serv. – Need training on Adobe Creative Suite
- Comm. Serv. – Need training on financial applications
- Finance – Need beginner and advanced Microsoft Office (Word, Excel, PowerPoint) training
- Finance – Need citywide Cayenta training
- HR – Need training on ADP
- HR – Need training on Cayenta
- HR – Need training on CalPERS
- Library – Need training on Cayenta
- Library – Need training on Outlook (e.g., calendar functions, mass email importing/sending, etc.)
- Library – Need training on ADP portal
- Library – Need training on phone basics (e.g., transfer, pickup, park/unpark, forwarding calls)

- Library – Need training on intranet searches
- Library – Need training on marketing form request procedure/details
- Police – Dispatchers need true training in the use of Blackboard
- Police – Need Adobe Design Studio training
- Police – Need training on Excel
- Police – Need training on Portable Wireless Camera system
- Police – Need training on 3SI technology for GPS tracking purposes
- Police – Need training on Training Information Management Systems (TIMS) to track department inventory specifically in regards to weapons
- Police – Need training on Windows Explorer
- Police – Need training on Word
- Police – Need training on Excel
- PW – Need training on ApplicationXtender
- PW – Need training on AutoCAD
- PW – Need training on Comcate functions
- PW – Need training on Internal Web-based GIS
- PW – Need training on Tidemark

Return-on-Investment (ROI) Consideration

- In a study conducted by Nucleus Research, an organization drove productivity gains of up to 50% through ongoing, successful user trainings4.

Recommendations

- Complete the Applications/User Matrices by department and user.
- Identify all current user license holders, as well as those that need additional licenses.
  - Conduct a survey, by user, to determine what training would be helpful and to determine actual need and planned attendees. This should be driven by department managers to elicit participation when training is made available.
- Identify approximately 500 square feet of space for use as a Training Room (See *Training Room* initiative).
  - Optimum configuration would be twelve PCs and two printers for hands-on training.
- Determine strategies for accomplishing training needs:
  - Self-learning aids
  - Internal classes (internal or external trainers)
  - On-site vendor training
  - Lunch-and-learns
  - Go-to Application Champions
  - Training opportunities at software vendor annual user conferences
- Create a repository of basic “how to” training aids and other training information (e.g., videos, past class information, etc.)
- Consider procuring a screen capture video solution to assist with developing internal video training aids.

[4] Nucleus Research, 2010.

- Current and future needs can be evaluated and prioritized through a combination of mechanisms, including the IT governance function.
- Consider class attendance as a factor in performance evaluations. This can be accomplished by having department management involved and agreeing to which classes each employee would benefit from.
- Consider efforts to reduce and/or limit the total number of software vendors and databases whenever possible. This will reduce and limit overall cost-of-ownership, support requirements, training, and reporting needs, and improve overall integration capabilities.

Benefits

- Improved operations management
- Improved utilization and efficiency of software applications
- Activation and use of existing functionality that is currently unknown, but important to the City
- Review and activation of new functionality provided in future applications software releases
- Increased information sharing
- Better identification of training needs
- Increase training alternatives
- Improved software administration (fewer staff required to service user community)

8. Training Room

A *Training Room* serves as a great opportunity for staff to become familiar with applications or expand on their current skills. It serves as a best practice to promote professional growth and continued improvement through increased utilization of existing or future organization applications to be released to staff. A dedicated Training Room is also a requirement for all major software implementation projects.

Findings and Observations

- The City has existing conference and meeting rooms that are multi-use that are often used for training.
- The City will benefit from a full-time Training Room in order to successfully complete the projects outlined in this plan.

Staff feedback

- CMO – Need a configurable classroom for training staff on systems
- Comm. Serv. – Need City-supported computer labs with latest hardware and software

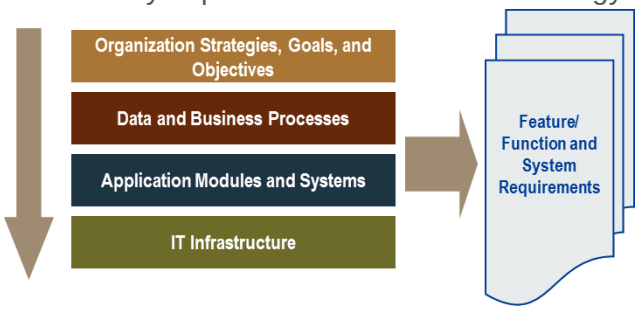
Recommendations

- The organization should maintain a Training Room for testing applications that are being implemented or for staff to improve upon existing competencies.
- Identify approximately 500 square feet of space for use as a Training Room
- With so many applications in use, a permanent Training Room will be needed if the organization implements ongoing user training, refresher training, and meet other training needs, as well as support applications management best practices.
- A minimum of twelve computers/workstations should be maintained in a room that provides adequate individual space for each workstation.
- Virtual Desktop (VDI) technology is often used for Training Room computers.
- Utilizing the recommended City VDI infrastructure will allow the City to place older PCs in the Training Room.
- Computers can also be used as a lab or resolution environment for staff experiencing extensive computer difficulties or those waiting for a computer replacement.

9. Software Selection Best Practices

Findings and Observations

Selecting the right system and technology is more critical today than ever before, because the efficiency and effectiveness of the organization is directly dependent on its use of technology and information systems. Organizations are realizing they must take greater advantage of automation and technology to ensure a better position to meet growing constituent and public demands. Additionally, many agencies must provide better service to their constituents, users, and the general public, while coping with greater budget constraints.



Return-on-Investment Consideration

While new software solutions can transform certain operations, processes, and constituent services, consider these facts:

- Without proper preparation, planning, and a methodology for selection and implementation, organizations face many problems and risks, including:
  - Spending hundreds of thousands—and, potentially, millions—of dollars more than necessary in total cost of ownership
  - Failed or prolonged implementation
  - Implementation of systems that still do not meet the organization's functional needs
  - Low productivity
  - Poor contract negotiation position
  - Lack of and/or reduced integration between other software systems
- Organizations typically fall short of their implementation goals due to one or more of the following factors:
  - Insufficiently defining system objectives and requirements
  - Failing to adequately involve both management and users
  - Underestimating the costs and effort required
  - Failing to adequately plan for expansion
  - Failing to properly evaluate software

STARTLING STATISTICS:

- Only 32% of projects are on time, within budget, deliver all required features and functions, and achieve measurable business and stakeholder benefits.
- Approximately 44% of projects are "challenged" (late, over budget, and/or have less than the required features and functions).
- 69% of project failures are due to a lack of and/or improper implementation of project management methodologies.
- Nearly 40% of those surveyed said that a "lack of employee buy-in and executive support" was the biggest challenge facing a successful implementation.
- A recent customer survey shows that enterprise implementation projects:
  - Have only a 7% chance of on-time implementation.
  - Will likely cost more than estimated.
  - Will likely deliver unsatisfying results (only 21% will realize half or more of expected benefits).
- In a past study of local government enterprise implementations published in *Government Finance Review*, it was found that the average project was 176% over budget and 243% beyond the planned implementation timeline.

- In order for key software systems to be implemented properly and for the organization to reap the full benefits, the organization should utilize a structured analysis and selection methodology. A structured approach to selection and implementation results in significant benefits, including:
  - Reduced risk of a failed or prolonged implementation
  - Lower total cost of ownership
  - Independent and objective analysis of potential alternatives
  - Well-defined objectives and requirements
  - An education process for the organization
  - Selection of technology that meets the organization's short- and long-term objectives and requirements
  - Effective contract negotiation through well-prepared and documented needs
  - Overall project time savings
  - Improved implementation readiness

Staff Feedback

- CMO – We don't always follow a method that leads to the selection of the right software
- CMO – We often have departments go off and buy software that another department already has

Recommendations

- Utilize best practice selection methodology when evaluating new software solutions (see example work plan below).
- Consider third-party consults when selecting or improving complex or highly specialized solutions.
- Ensure process reviews are completed and detailed feature/function specifications are documented as part of the RFP (see example below).
- Ensure detailed feature/function specifications are utilized with test scripts before going live on new applications implementations.
- Include all stakeholders in each software evaluation and implementation project.
- Ensure detailed feature/function specifications are utilized in post-implementation reviews and ongoing training (see example work plan pages below).

Benefits

- Reduction in hardware/software requirements
- Reduction in preparation time for deployments
- Better identification of integration requirements
- Reduced license fees
- Increased utilization of applications systems
- More effective due diligence
- Increased staff buy-in, consensus, and morale
- Improved decision making (selecting software that is the best fit for your needs)
- Improved implementation results (time, costs, and results)

Feature Number	Feature / Function / Capability	Standard - Current	Standard - Next	Report Writer	3rd-Party Application	Custom Modification	Not Available	No Response	Comments
	Requisitions / Purchasing								
4.000	**VENDOR MAINTENANCE GENERAL FEATURES**								
4.020	**VENDOR – ADDRESSES** - Provide for multiple addresses per vendor (must support non-USA addresses) with a minimum of four addresses and five lines each.						1		
4.028	**VENDOR APPROVAL** - Ability for departments to setup a temporary vendor with only purchasing to approve new vendors.						1		
4.035	**ON-LINE REQUISITION/PO APPROVAL** - Provide functionality online to route requisitions or purchase orders to appropriate users (or their backup user) with notifications for their approval or disapproval. Allow entry of disapproval notes and ability to restart the approval process if required.	1							
4.038	**ON-LINE TRACKING OF APPROVED REQUISITIONS** - Ability to use online query for all purchase requisitions that are awaiting the user's approval.	1							
4.041	**ENCUMBRANCE ACCOUNTING**								
4.042	**ENCUMBRANCE ACCOUNTING** - Provide all procedural functions of an encumbrance system including verification of budget availability before accepting invoice, requisition and purchase order transactions.	1							
4.046	**PURCHASE REQUISITIONS**								
4.047	**FORMAL BID FUNCTIONALLY** - Provide formal bidding functionality and process, which ties with both purchased requisitions and purchase order functions.		1						Future release
4.050	**BUDGET / PURCHASE LIMIT CONTROLS** - Provide security controls to either allow or disallow amounts to be entered that exceed budget amounts.	1							System either start workflow process, or not route items that exceed budget amount
4.052	**RECURRING REQUISITIONS** - Allow recording, reporting, retrieval, and editing of recurring requisitions.						1		
4.054	**ELECTRONIC REQUISITIONING** - Provide the ability to generate electronic requisitions by multiple end-users.	1							
4.099	**DEPRECIABLE ASSET** - Ability to code items as depreciable assets.	1							This is available at the PO level
4.107	**PURCHASE ORDER PROCESSING**								
4.109	**PURCHASE ORDER GENERATION** - Allow items to be split from requisitions to multiple purchase orders.					1			
4.140	**PURCHASE ORDER – THRESHOLD AMOUNT** - Ability to set a limit (cumulative) for a single vendor in a year for purchases.	1							yearly limit tracked via misc user defined field
4.158	**CONTRACT EXPIRATION ALERT** - The system should provide a warning or block payments if a contracts insurance has expired.	1							Information is available via drill down
4.160	**APPROVALS** - Ability for an approval to be routed to multiple approvers, via workflow rules, where either approver, but not both, is not required.	1							
4.194	**PURCHASE ORDER COMMITMENT REPORTING** - Generate a purchase order commitment report reflecting the dollar amount of anticipated deliveries by vendor.	1							
4.196	**INTEGRATION**								
4.198	**INTEGRATION - ACCOUNTS PAYABLE** - Provide for automatic transfer of purchasing information to Accounts Payable (e.g., vendor, address, amount, purchase order number, etc.)	1							
4.199	**INTEGRATION - BUDGET** - Provide capability to validate funds availability for Requisition and Purchase Order transactions. Allow override capability.	1							
4.202	**INTEGRATION - GENERAL LEDGER** - Ability to download purchasing card transaction file (.txt) to post transaction detail to General Ledger by general ledger account code. Note: each transaction is associated with a specific general ledger account number in the text file.								standard P-Card integration is available via import into Accounts Payable
4.203	**INTEGRATION - PROJECT ACCOUNTING** - Purchase Order transactions coded to Projects must integrate with Project Accounting and/or Work Order Management systems.								

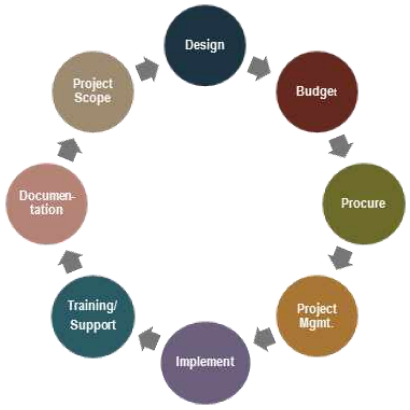
Step	Software System Selection Work Plan
Phase 1 – Needs Assessment and Recommendations	
1	**Kick-Off and Project Team Development** – Hold a formal Kick-Off Meeting, and then work with the Project Manager to finalize the makeup of the selection Project Team and document required roles and responsibilities. Include representatives from all key stakeholder groups.
	IT Infrastructure and Staffing Readiness Review
2	**IT Information Meetings and Interviews** – Conduct information-gathering activities focused on the ability of the existing IT staff and infrastructure to support the needs of the organization and to review the readiness to implement and support the platform that will be required for the new software system, including:
	IT Network and Infrastructure
	Storage and Backups
	Servers, Server Applications, and Management
	IT Security
	Disaster Recovery
	Desktop Environment
	Printers
3	**Documentation** – Document information and summarize the required preparation initiatives, findings, and recommendations.
4	**IT Assessment Memo** – Prepare a memo assessing gap and readiness of IT infrastructure to support the organization's general needs and to support the introduction of the new software system. The memo is to include the following:
	General readiness of IT to support the organization's needs and support the introduction of a new software
	IT Initiatives with findings and recommendations, including the following scope:
	IT Environment and Infrastructure
	IT Applications Support Staffing Structure
	Business Department Needs Assessment Interviews
5	**Business Process Review and Feature/Function Analysis** – Meet with the identified personnel by functional area and software modules to review existing manual and automated systems and operations, including any custom-developed work-around systems/processes. Include a cross-section of all user types in each needs assessment workshop.
6	**System Requirements Documentation** – Document information gathered during interview process and develop feature/function requirement specifications specific to your organization.
Phase 2 – RFP Development	
7	**Preliminary Vendor Research, Communication, and Coordination** – Research vendor community to identify qualified vendors meeting the organization's system and services requirements, and communicate with potential vendors. Vendors do not respond to all RFP's, so pre-communication is helpful to obtain proposals that are in the organization's best interest to consider.
8	**Develop Request for Proposal (RFP) with Electronic Response Forms** – Prepare a Request for Proposal (RFP) document and work with the organization to make adjustments and revisions, as well as ensure it complies with the organization's purchasing guidelines and is distributed per policy (assumes development of a single RFP document). RFP should include, but will not necessarily be limited to, the following:

Step	Software System Selection Work Plan
	Comprehensive list of functions/requirements with prioritization
	Cost, including purchase or other financial payment plan options
	Required technical specifications
	Installation costs
	Migration from existing to new system (cost and timeline)
	Training cost and training schedule
	New system hardware/network/system software requirements
Phase 3 – Vendor Evaluation and Demonstration Management	
9	**Facilitate RFP Response Activities** – Facilitate pre-proposal activities, including:
	Manage vendor questions and answers during established proposal response timelines.
10	**Proposal Evaluation** – Analyze and evaluate proposal responses. Provide an initial Summary Vendor Comparison Worksheet that provides side-by-side comparison of key system evaluation requirements, including feature/function compliance statistics.
11	**Analysis Results Workshop to Determine Vendor Finalists (Short List)** – Conduct a collaborative review workshop with a key stakeholder committee and determine which vendors are to be short-listed.
12	**Develop Demonstration Documents** – Prepare an agenda and sample demonstration scripts for vendor demonstrations to be sent to vendor finalists for their advance preparation. Also, prepare vendor demonstration evaluation forms for use by selection committee members during demonstration sessions.
13	**Reference Check Form Preparation** – Prepare form to be used by project team members during finalist reference checks/calls.
14	**Schedule and Facilitate Vendor Demonstrations** – Schedule demonstration dates and facilitate initial vendor demonstrations to ensure that pertinent requirements are addressed (estimate three vendors at X days each).
15	**Develop Site-Visit Documents** – Prepare an agenda for each vendor site visit and a site visit evaluation form for organization selection committee members to complete during each visit.
16	**Post Demonstration/Visit/Reference Check Due Diligence and Follow-Up** – Track follow-up issues and conduct comprehensive due diligence. This may include additional demonstrations, Q&A facilitation, reference checking, and site-visit assistance, etc.
17	**Finalist Selection** – Conduct a meeting with the organization selection committee to facilitate discussion and finalize the vendor selection.
18	**Review Selected Vendor's IT Requirements** – Review the IT (server, workstation, network, etc.) requirements provided in the selected vendor's proposal, and prepare a memo outlining observations and recommendations for IT.
Phase 4 – Contract Review and Negotiation Assistance	
19	**Implementation Plan Review** – Review implementation plans, project management office, resource requirements, and timelines.
20	**Implementation Team Organization** – Establish Implementation Project Team based upon PMI and COBIT Project Management Office (PMO) principles and applications management best practices.
21	**Contract Review and Negotiation Assistance** – Conduct contract reviews and negotiations with an SME and legal representation.

10. Project Planning and Implementation Best Practices

Findings and Observations

A best practices approach should be followed for all significant implementation projects. The complexity and risk determine the actual level of due diligence that should be performed. The following is an outline of project planning and implementation best practices:



Determine Scope of Work – Work with all stakeholders to determine what needs to be accomplished.

Design – For larger, more complex projects, the design effort may become a separate project. For smaller projects, design is integrated into budgeting.

Specifications – Make sure an appropriate level of vendor-agnostic specifications are included with procurement requests that reduces ambiguity and provides better comparisons between vendors.

Collaborate – Include input and requirements of all stakeholder groups to ensure all requirements are included in specifications and all stakeholders buy-in to the final solution. IT Steering Committee should review as part of the Committee's role and responsibilities.

Develop Budget – Project budgets include hardware, software, and consulting/SME costs. Consulting costs are estimated by outlining the various work steps and estimating the hours required to complete them.

Gain Sign-Off – Once the budget is complete, review the scope of work and costs with the project sponsor and gain their approval before continuing, including consent by the IT Steering Committee.

Create Project Plan – Based on all stakeholder needs, delivery dates, and the tasks to be completed, develop a project plan and estimated implementation date.

Outline Communication Plan – Outline the process for communicating implementation dates, improvements, and training to appropriate staff members.

Document Other Plans – Other plans may include training, testing, contingency, and back-out. These plans are developed on an as-needed basis.

Configure and Implement – Utilizing planning methodologies and technical expertise, configure the necessary system components, and implement the solution with the least possible impact to staff and productivity. The IT Steering Committee should receive status reports on the progress of the implementation, including whether the project is on time and on budget, whether user needs are being met, and that vendors are following through with their contractual obligations.

Post-Implementation Review – Complete a post-implementation review with successes, lessons learned, and any loose ends requiring vendor assistance. Report the results of the IT Steering Committee.

Post-Implementation Support – All implementations that affect multiple users require on-site, post-implementation support to eliminate remote response times.

Documentation – Develop any necessary procedures and update documentation as part of the project.

Recommendations

- Develop a project portfolio for all IT and software-related projects.
- Follow planning and implementation best practices.
- Review all major active and upcoming projects during IT Steering Committee meetings.
- Obtain services of third-party project managers/subject-matter experts, as appropriate and/or cost beneficial.

Benefits

- Prioritization of projects
- Reduced periods between transitions
- Increased information-sharing capabilities
- Enhanced communication and consensus
- Increased anticipation and management of technology upgrades
- Improved analysis and planning
- Increased departmental collaboration
- Measurement and tracking of results/outcomes

11. Maintaining Software Updates

Findings and Observations

- Best practice for the maintenance of applications software is to maintain a minimum of N-1 (current major release or the one prior).
  - Software vendors often only support the current release and the one prior.
  - Falling further behind often creates upgrade scenarios with several intermediate steps, risking additional problems, and potentially makes upgrades more expensive and time-consuming.

Staff Feedback

- Comm. Dev. – IT is required for updates/upgrades of simple software/applications
- Comm. Serv. – A number of staff are operating on old versions of Office software, email etc.
- HR – Would like access to update/upgrade simple software/applications without needing to wait for IT. (Adobe, Java, etc.)
- HR – Are at least 4 versions behind on ADP
- Library – Would like access to update/upgrade simple software/applications without needing to wait for IT. (Adobe, Java, etc.)

Recommendations

- The City's normal practice is to maintain software updates as recommended.
- Maintain consistent updates across all users.
  - Utilize the inventory created in the *Applications and User Licensing Inventory* initiative to understand version issues.
  - Complete implementation of previously purchased patch management software to provide software updates across the City for desktop software updates to provide consistency and automation. Includes software updates in sustainability and replacement planning.
- Provide appropriate user training with each release.

12. IT Project and Services Portfolio

An *IT Support Services Portfolio* is a complete list of IT projects and services provided to City staff and the public. The support services portfolio outlines IT responsibilities for each service and any service-level agreements for those services (e.g., 24/7 support required, disaster recovery priorities, user-access permissions, report writing for certain software modules, server uptime requirements, etc.) Applications support, partially addressed in the *Applications Management Best Practices* initiative, is only one aspect of the complete portfolio. Other IT services include projects, Help Desk, data network, telephone systems, IT security, etc.

Recommendations

- We recommend the IT Division create an IT Projects and Services Portfolio to effectively communicate and set expectations for all users regarding what support services IT provides and communicate service-level standards.
- Utilize results of IT Master Plan as the basis for a five-year project portfolio and budget.
- Utilize the *Applications Management Best Practices*, *Applications and User Licensing Inventory*, and *User Training and Support* initiatives as a basis to complete the services portfolio.

13. Sustainability Planning

Findings and Observations

Sustainability Planning is the process of mapping the acquisition, maintenance, upgrade, improvements, training, and eventual replacement for major applications systems over a long-term period (i.e., five to ten years). Sustainability Planning helps in two significant ways:

1. Reducing the significant periodic spikes in capital expenditures of large software solutions
2. Scheduling upgrades and replacements of departmental business applications systems in a convenient and timely manner

The growing practice of Sustainability Planning provides a more practical or realistic way to determine and plan for the ongoing operational needs of all departments.

Because software applications are the primary technology tools of the operational departments, in order to increase productivity and efficiencies, improve customer service and transparency, and take advantage of technology improvements, the City can benefit from the implementation of sustainability planning versus the more limited practice of replacement planning.

Recommendations

- Develop a sustainability plan for IT software applications.
  - Microsoft licenses should be replaced N-1 (i.e., every other version).
  - Larger core applications (e.g., Financials, Land Management, Work Order Management, Recreation, etc.) benefit most from sustainability planning, because these should only be replaced every 10-15 years, if procured and managed properly.
- Investigate and track annual maintenance and support, and upgrade costs for all major systems to determine if the cost structure is sustainable. If the cost structure is not sustainable, consider alternatives and priorities over the next five-year period.

Benefits

- Increased long-term investment through scalability
- Reduced maintenance expenses
- Increased trust in systems
- Reduced risk and liability
- Reduction in total cost of ownership
- Avoidance of unforeseen upgrades
- Informed purchase timing
- Software lifecycle evaluation

14. Cloud Computing

Cloud computing can be described as IT services or equipment that are not internal, but available through the Internet. This can range from having a server hosted in an organization or facility other than the local organization, accessing information from a portable device, procession requests from the field, subscribing to an Internet-based software solution per a subscription model, etc. The benefits of cloud computing allow individuals to collaborate and remain centralized, regardless of location.

Cloud computing is one the most prominent discussions among current trends in IT. Significant benefits can be achieved, including security, disaster recovery, and cost savings. However, cloud-computing options for many systems are still not cost-effective or the most secure approach.

Findings and Observations

- The organization has already utilized some forms of cloud computing.
- Several infrastructure improvements will be required for the organization to be able to fully utilize cloud-based systems.

Staff Feedback

- FIN – Need to evaluate on ROI
- OPS – Any discussion of cloud computing should take into account the realities of our work environment, which is that a significant number of staff are frequently not connected to any networks, Internet, etc. and should be able to do their work on stand-alone computers when necessary.

Recommendations

- Before moving any significant applications to the cloud, the City should:
  - Upgrade the local area network (LAN)
  - Geographically separate Internet provider services
  - Move to most current version of Active Directory
- Cloud-computing options should be considered for future projects.
- Cost/benefit should be the overriding factor for most final decisions.

15. Centralized Land and Parcel Management

Centralized Parcel data is important for consistent organization-wide parcel and address data for all departments to utilize. The updating and sharing of a central database is essential in allowing departments to operate more efficiently moving forward and in retrieving historical records.

Findings and Observations

- The City uses multiple geo-based applications, such as Utility Billing, Work Orders, Permits, Code Enforcement, Planning (future), Business Licenses, GIS, etc.
- The address/parcel information is not synchronized; no formal process is in place to update parcel and address information from the County.
- The City could realize significant productivity gains and improved accuracy by using a common, centralized parcel/address database to populate any new or changed information.
- Although City staff have access to GIS software (Esri ArcGIS for Desktop), and sometimes access to basic GIS layers, the City does not have a citywide GIS system that provides a base level of functionality to support the land and parcel management process.

Staff Feedback

- Comm. Dev. – There is no citywide parcel/address master

Recommendations

- Utilize the GIS database for master address/parcel records (see *Develop GIS Master Plan* initiative).
- Select a future software system that offers both a master address/location and parcel management database (if applicable).
  - System should allow for regular updates and synchronization with the GIS.
  - Master addresses/locations should be shared across all geo-based applications.
- All updates of information from external and internal sources should first be done through the GIS. Then, updates to other systems would be done using the GIS master information.
- Strict control of who is authorized to make updates of this information should be enforced, and typically limited only to GIS data editors.
- Geo-based applications should be configured so that users select valid addresses, not type in free-form addresses, for each transaction.

Benefits

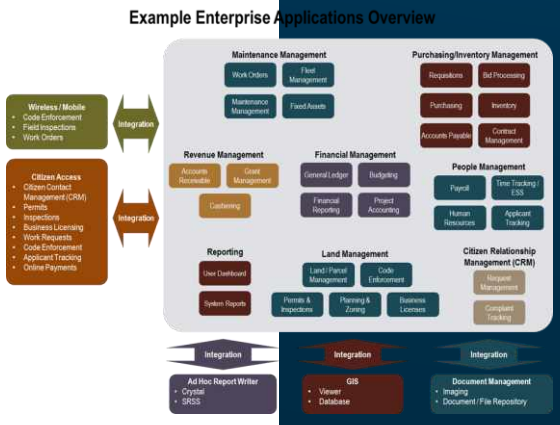
- Improved data integrity (i.e., consistent organization-wide parcel and address data)
- Connectivity with City/County parcel systems
- Improved review and planning
- Better GIS layer reporting
- Increased staff efficiency by reducing data entry into multiple land-based systems
- Ability to allow access to this information, via the Web to the public

Departmental Applications and Systems

The *Departmental Applications and Systems* category includes IT Initiatives that are primarily department business applications-related and were 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 savings.

16. Enterprise Resource Planning (ERP) Replacement
17. Project and Grant Accounting
18. Contract Management
19. Cashiering Needs Assessment and Replacement
20. Work Orders/Maintenance and Asset Management System
21. Fleet Management
22. Land Management System Replacement
23. Electronic Plan Submittals and Reviews
24. Human Resources System Improvement or Replacement
25. Employee Self-Service
26. Time, Attendance, and Accruals Tracking
27. Performance-Evaluation Software
28. Applicant Processing
29. Training and Certification Management Software
30. Staff Scheduling System
31. Project and Construction Management
32. Parks and Recreation Software Replacement (eGov)
33. Citywide Facilities Scheduling/Events Calendar
34. Childcare Management System
35. Electronic Content Management System (ECMS) Replacement
36. Agenda Creation and Management Software
37. Legislative Management
38. Granicus Media Management Assessment (Replacement)
39. Large-File Sharing Tool
40. Video Capture and Editing (Video Events and Other)
41. Photo Management and Storage Software
42. Publishing Software Consolidation
43. Real-Time Utility Usage (Automatic Meter Reading-AMR)
44. Website Improvements
45. Notifications System (Push/Social Media/Text)
46. Develop GIS Master Plan
47. Department-Centric / GIS Self-Service
48. RIMS (CAD/RMS) Gap Analysis and Application Maximization
49. Alarm Tracking and Billing Software
50. Ticket Writer Software Replacement (Duncan to TDS)
51. Officer Radio Transmission Identification
52. Replace MDC's with RIMS Mobile/GIS System
53. Tow Company Billing System
54. FirstNet Preparation Planning
55. Police Audiovisual Format Conversion Tool
56. Panic Button
57. Penal Code/Vehicle Code Reference Software
58. Portable Wireless Camera for Surveillance
59. Wireless PA Radio PA/Sound System
60. Instant Messaging
61. PA Announcements
62. Parking Sensors and Management
63. Constituent Satisfaction Surveys
64. Laptop Borrowing Program
65. Library Subscription Provider Statistics
66. HVAC Zonal Climate Control System

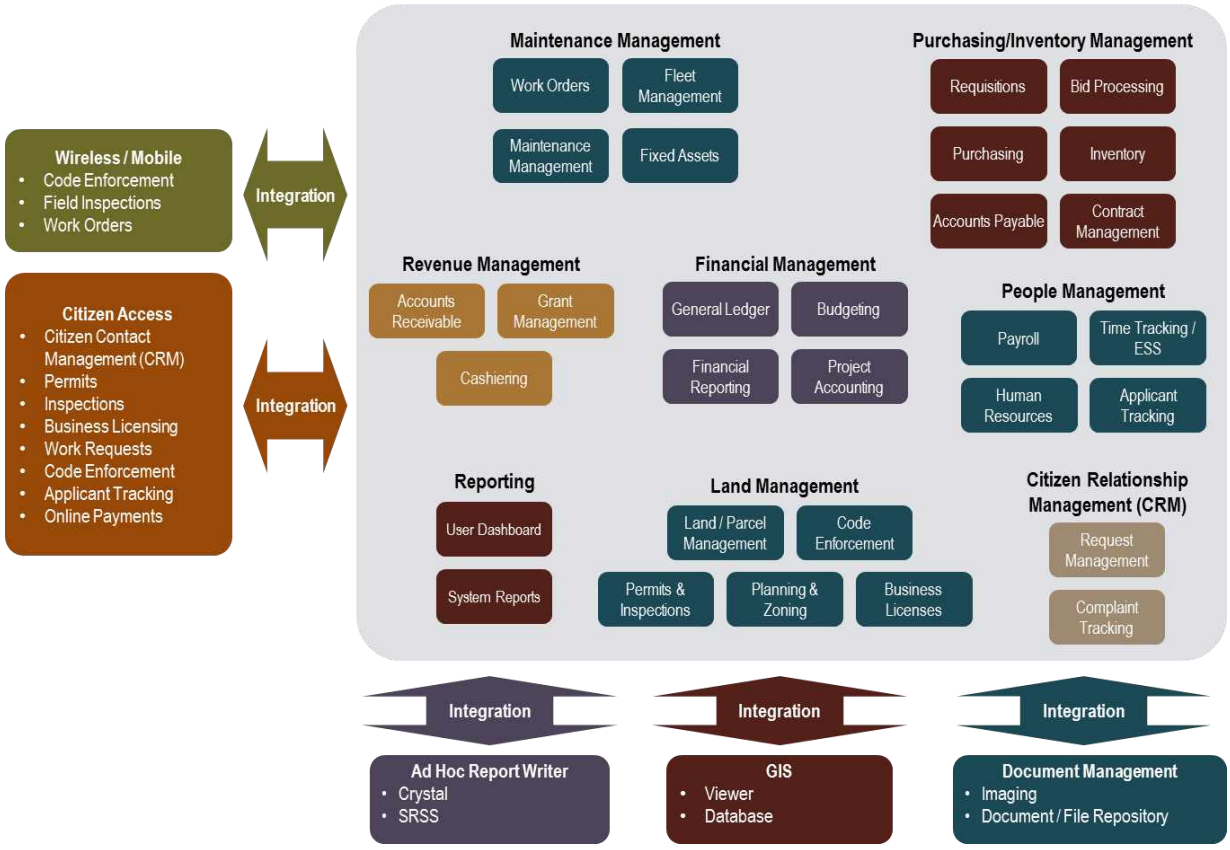
Example Enterprise Applications Overview



16. Enterprise Resource Planning (ERP) Replacement

Enterprise Resource Planning (ERP) is an organization-wide software solution that allows integration among various departments and their respective functions. The result is a centralized system of communication, data storage, and operations management. Improvements to ERP solutions bring about processes that multiple departments can benefit from. Common municipal-related ERP applications modules include accounting, financial reporting, payroll, human resources, planning and permitting, and work orders. The following graphic shows a typical municipal ERP environment.

Example Enterprise Applications Overview



Findings and Observations

Currently, the City utilizes multiple software vendors to support its enterprise applications requirements, including Cayenta for core financials, and ADP Workforce Now for payroll and limited HR operations. ADG and many of the other existing systems are outdated, lacking adequate integration, reasonable reporting capabilities, commonly utilized functionality found in other municipalities, and require excessive manual workaround and reconciliations. ADP is also not meeting the City's expectations and carries significant annual costs. All departments noted unmet reporting needs, feature/functional requirements deficiencies, and an overall need for systems improvements and additional software modules.

The City is missing opportunities for labor savings (thousands of labor hours per year), improved customer service due to lack of integrated solutions with sufficient training, and functionality to meet internal operational and customer needs.

Departments have a strong interest in newly available features and enhancements that a more modern ERP solution can provide. Gaining greater utilization in enterprise applications software modules through installation of a new ERP system is key to significant increases in citywide productivity and efficiencies. The table below represents current and potential future ERP applications.

The City currently uses at least seven different vendors to provide its ERP needs. The primary solutions, Cayenta (GL, AP, Requisitions, and Purchasing), TM1 (Budgeting), Sage (Fixed Assets), ADP (SaaS environment for Payroll and HR), Quickregister (Cash Receipting), Tidemark Advantage (Permitting, Code Enforcement and Parcel Mgmt), and HdL (Business Licensing), with many of these being older-generation systems that lack key functionality available in more current technology. The Cayenta system is over ten years old, it was recently updated to version 7.7 which makes it more current, but a newer/better system would improve operations. The Community Development Systems, including Tidemark and HdL, are due for replacements, with Tidemark being at its end of life. Additional improvements or replacement should also be considered for the work order systems (Comcate).

The following is a table that shows the City's major suites that are usually included in an ERP system. The table also depicts what prominent municipal ERP systems typically offer.

ERP Applications and Vendors	Currently Owned	Implemented	Potential Modules in Single-Vendor Solution
Financial Management			
Cayenta			
General Ledger	Yes	Yes	Yes
Accounts Payable	Yes	Yes	Yes
Requisitions and Purchasing	Yes	Yes	Yes
Financial Reporting	Yes	Yes	Yes
Ad Hoc Reporting	Yes	Yes	Yes

ERP Applications and Vendors	Currently Owned	Implemented	Potential Modules in Single-Vendor Solution
Sage			
Fixed Assets	Yes	Yes	Yes
Quickregister			
Cash Receipting	Yes	Yes	Yes
TM1			
Budgeting	Yes	Yes	Yes
Modules Not In Use Or Not Available			
Project Accounting (Job Costing)			Yes
Accounts Receivable			Yes
Contract Management			Some
Investment/Cash Management			Some
Vendor Self-Service			Some
People Management			
ADP Workforce Now			
Payroll	Yes	Yes	Yes
Human Resources	Yes	Yes	Yes
Time Tracking	Yes	Yes	Yes
Employee Benefits Tracking	Yes	Yes	Yes
Performance Evaluations	Yes	No	Yes
CalOpps			
Applicant Tracking	Yes	Yes	Yes
Online Applicant Tracking	No	No	Yes
Modules Not In Use Or Not Available			
Personnel Budgeting			Yes
Employee Self-Service			Yes
Profile Management			Yes
Personnel Action Forms			Some
Leave Requests			Some
Open Enrollment			Some
Family Medical Leave Act (FMLA)			Yes
Workers Compensation			Yes
American Care Act (ACA) Compliance			Yes
CIS / Utility Billing (Outsourced to Global Water FANTHOM)			
Customer Information Management			Yes
Utility Billing			Yes
Service Orders			Yes
Meter/Backflow Management			Yes

ERP Applications and Vendors	Currently Owned	Implemented	Potential Modules in Single-Vendor Solution
Work Orders / Asset Management / Fleet Management			
SeeClickFix, Comcate			
Work Requests	Yes	Yes	Yes
GovQA, C-C-I-N, Direct Connect			
Citizen Request Mgmt (CRM)	Yes	Yes	Yes
Ron Turley Associates (RTA)			
Fleet Management	Yes	Yes	Some
Modules Not In Use Or Not Available			
Work Orders/Preventative Maintenance			Yes
Asset Management			Most
Inventory Management			Yes
Mobile Work Orders			Some
Land Management (Development Services)			
Tidemark Advantage			
Permits	Yes	Yes	Yes
Code Enforcement	Yes	Yes	Yes
Parcel/Address Management	Yes	Yes	Yes
HdL			
Business Licenses	Yes	Yes	Yes
TES/TIM			
Mobile Inspections	Yes	Yes	Yes
Modules Not In Use Or Not Available			
Planning Projects and Zoning			Yes
Inspections			Yes
Cash Receipting			Yes
GIS Viewer			Yes
Mobile Code Enforcement			Yes
Online Services			Yes
Planning Projects			Yes
Permitting			Yes
Inspections Scheduling/Requests			Yes
Business Licensing			Yes
Payments			Yes

Staff Feedback

- CMO – C-C-I-N is a system developed in-house for the public to send messages addressed to the City Council
- CMO – C-C-I-N is not helpful and needs to be replaced
- CMO – Check requisitions is a time intensive and paper-based process
- CMO – Current budget documents provided are not useful
- CMO – Form 700 reporting for compliance with FPPC rules for elected and appointed officials and contractors
- CMO – GovQA is a portal used by public to submit a public records request
- CMO – GovQA provides some automated workflows and allows for management of requests to ensure compliance with legal requirements
- CMO – Manually processing time cards
- CMO – Need online planning and building portal for the public to view and monitor projects
- CMO – Need project management resource tracking of people, time, facilities, budget, etc.
- CMO – Need the ability to track project expenditures and available budgets in real time
- CMO – Need to automate the budgeting process
- CMO – Using Direct Connect to capture public complaints; complaints are then routed to staff email addresses.
- CMO – Would like electronic signatures for contracts in order to avoid back and forth movement of contract documents
- Comm. Dev. – Ability to create annual Department of Finance Building Report
- Comm. Dev. – Ability to notify a customer when Plan Checker review has been completed
- Comm. Dev. – Ability to provide better estimates to applicants of “typical” total case costs
- Comm. Dev. – Ability to receive reminders of pending permit expirations (e.g., Limited Term Project Approvals)
- Comm. Dev. – Ability to report and monitor projects approved/built under pending General Plan
- Comm. Dev. – Ability to report on maximum allowable development status (e.g., El Camino Real/Downtown Specific Plan)
- Comm. Dev. – Ability to report on residences and non-residential square feet approved for/under development (e.g., Joint Venture Silicon Valley Land Use Survey)
- Comm. Dev. – Ability to report on various one-off permitting requests (pipeline projects, approvals, etc.)
- Comm. Dev. – Could use self-service stations at Building/Planning counter to allow customers to retrieve basic parcel information
- Comm. Dev. – Could use self-service stations to allow customers to start applying for permits
- Comm. Dev. – Current project invoicing procedures are very manual and have a number of opportunities for human error
- Comm. Dev. – Current timecards procedures are very manual and have a number of opportunities for human error
- Comm. Dev. – Department has a digital camera for site visit photos, but many staff members just use their cell phone camera
- Comm. Dev. – Digitized paper needs to link with parcel/permitting system(s)
- Comm. Dev. – Generally, link disparate parcel information systems (Tidemark, GIS, building permit scans, business licenses, etc.) so that multiple programs don’t have to be opened to get basic information

- Comm. Dev. – Generate various project-related letters (30-day review, actions, etc.) to automatically pull in relevant project-specific information (contact info, project number, description) and combine that with standard conditions/disclaimers and project-specific guidance
- Comm. Dev. – Have a Microsoft Access database of historical building permit and inspections data
- Comm. Dev. – Have a script that runs monthly to retrieve County Assessor parcels and compare them with Tidemark
- Comm. Dev. – Inspection requests can be made by calling the building department between the hours of 8 and 8:30 AM
- Comm. Dev. – Labor-intensive routings/task assignments to other staff members
- Comm. Dev. – Need fee calculations to be automatically calculated
- Comm. Dev. – Need a better system for holds (e.g., stop work notifications, business license required, open code enforcement case on property, etc.)
- Comm. Dev. – Need a Housing Element Annual Report for number of units (by type/income category) with issued building permits
- Comm. Dev. – Need automatic tiered actions
- Comm. Dev. – Need employee task tracking
- Comm. Dev. – Need online inspection scheduling
- Comm. Dev. – Need to allow for online status checking of applications
- Comm. Dev. – Need to include building coverage in Parcel database enhancements
- Comm. Dev. – Need to include calculated zoning parameters (FAL/FAR in Parcel database enhancements)
- Comm. Dev. – Need to include easements in Parcel database enhancements
- Comm. Dev. – Need to include homeowners associations in Parcel database enhancements
- Comm. Dev. – Need to include R-3 infill density in Parcel database enhancements
- Comm. Dev. – Need to include substandard lots in Parcel database enhancements
- Comm. Dev. – Need to streamline public meeting notice mailings; currently export Excel list of addresses, clean up duplicates/errors, creating Word notice, copy project description from Tidemark, change planner contact info, link Word and Excel files through mail merge, print, and mail notices
- Comm. Dev. – Not all records were successfully converted into Tidemark, when it originally went live in 1999
- Comm. Dev. – Payments are taken directly in QwikRegister and then manually entered Tidemark (double entry)
- Comm. Dev. – Permit records searches are convoluted under current system
- Comm. Dev. – Police uses Tidemark for code enforcement
- Comm. Dev. – Tidemark is on an old and unsupported version
- Comm. Dev. – Tidemark permitting system is extremely out-of-date and in need of replacement.
- Comm. Dev. – Using Excel for analysis/calculations (e.g., calculating floor area/building coverage maximums)
- Comm. Dev. – Using Excel for building inspector appointment scheduling
- Comm. Dev. – Using Excel for creating/editing public notice address lists
- Comm. Dev. – Using Excel for project schedules
- Comm. Dev. – Using Excel for project tracking timesheets
- Comm. Dev. – Using Tidemark for Building/Planning permit tracking, parcel data access/maintenance, and reports
- Comm. Dev. – Would be great to link automatically to County parcel GIS system (without having to retype address)
- Comm. Dev. – Would like to take simple permits online

- Comm. Serv. – Call or email Finance to see whether a requisition was approved
- Comm. Serv. – Cayenta is not user-friendly
- Comm. Serv. – Could use time clocks on computers
- Comm. Serv. – Information in Cayenta is not real-time
- Comm. Serv. – It's a challenge to provide grant reports on time
- Comm. Serv. – Need automated time cards
- Comm. Serv. – Need Grant Reporting Procedures
- Comm. Serv. – Need to streamline and automate check requests, purchase orders, and bid waivers
- Comm. Serv. – Only the Library is using time clocks
- Comm. Serv. – Using Cognos' TM1 by IBM for budget creating and reporting
- Comm. Serv. – Using Comcate for customer response management
- Comm. Serv. – Using Excel to manage budgets
- Comm. Serv. – Using Excel to track requisitions
- Comm. Serv. – Using Open Budget to provide community access to City financial information
- Comm. Serv. – Using Outlook to schedule work orders
- Finance – ADP is unable to allow supervisors to view their staff's timecards
- Finance – Bank Reconciliations are done in Excel spreadsheets
- Finance – Finance forwards CAL-card statements to the departments for them manually assign GL accounts to each item
- Finance – Goods receipts are not electronic
- Finance – Have been discussing the replacement of the existing financial system
- Finance – A new/better financial system would provide benefits and improve collaboration opportunities
- Finance – Paper requisitions are routed and signed
- Finance – Projects and grants are currently part of the GL accounts structure
- Finance – Purchase orders are produced in Excel or Word
- Finance – This year's CAFR statement will be processed by outside auditors
- Finance – Using HdL for Business License applications and renewals
- Finance – Using Sage for fixed-asset management
- HR – ADP appears to have FMLA, but it has not been activated
- HR – ADP can track certifications and degrees
- HR – ADP's performance evaluation software is licensed, but not implemented
- HR – Applicant tracking processes are manual
- HR – Are at least four versions behind on ADP
- HR – Are not satisfied with the existing version of ADP
- HR – CalPERS does not tie into HR
- HR – Existing Version of ADP lacks OSHA, works compensation, ACA, and leave management capabilities
- HR – Have an Access database with data prior to ADP implementation
- HR – Have been using ADP for at least 15 years
- HR – Manually processing open enrollment
- HR – Need a system to automatically notify IT and Finance of terminated employee access
- HR – Need automated time sheets
- HR – Need better tracking and reporting of leaves
- HR – Need better tracking of employee on-boarding
- HR – Need more efficient ways of preparing third-party reports (e.g., state controller, EEO, OSHA, PRA Salary Report, etc.)
- HR – Need to comply with America Care Act (ACA)

- HR – Need to provide employees with self-service capabilities (e.g., tax changes, address changes, access to paystubs, etc.)
- HR – Need to use a system and not spreadsheets for position control tracking
- HR – Payments to third-party vendors are either paid manually or via EFT
- HR – Using ADP for human resources and payroll capabilities
- HR – Using Excel for OSHA tracking/logs and to create OSHA 300 report
- HR – Using Excel for tracking Health Enrollments by employee, plan, unions, etc.
- HR – Using Excel for tracking retiree health credits
- Library – Doing paper time sheets in addition to clock-ins
- Library – Currently have to manually keep track of hours worked for each temp employee so we do not go over pay period/annual limit.
- Library – Monthly reports received from finance are typically a month after the fact
- Library – Need an ADP mobile app
- Library – Need PC/device timeclock entry for ADP (e.g., sick, vacation, adjustments, etc.)
- Library – Need real-time tracking of purchases placed/received
- Library – Need the ability to track temp time that was spent on a project (e.g., summer reading program)
- Library – There is one time clock at the library
- Library – Using Volgistics to track volunteer hours
- Police – Doing duplicate entries into both Tidemark and RIMS
- Police – Currently not taking parking payments online
- Police – Manually processing and tracking purchasing forms
- Police – Multiple staff are reviewing and approving paper times cards
- Police – Need annual parking permit renewals for downtown parking
- Police – Need annual parking permit renewals for overnight parking permits
- Police – Telestaff works well for both scheduling and time cards
- Police – Use Tidemark code enforcement capabilities
- Police – Using Telestaff for shift bidding, comp time, vacations, and shift swaps
- PW (Engineering) – Files need to be shared and stored based on address
- PW (Engineering) – Need a permit system upgrade
- PW (Engineering) – Need a traffic sign and signal inventory
- PW (Engineering) – Need automated time cards
- PW (Engineering) – Need better management and reporting of storm water permit
- PW (Engineering) – Need better reporting of Capital Improvement Projects
- PW (Engineering) – Need current and accurate accounting and invoice data
- PW (Engineering) – Need to automate inspection requests
- PW (Engineering) – Need to automate the creation of notices, comment letters, etc.
- PW (Engineering) – Need to automated Lawn Be Gone program
- PW (Engineering) – Need to become compliant with online permits for solar panel (AB 2188)
- PW (Engineering) – Need to offer online truck permits
- PW (Engineering) – Should accept permits online
- PW (Engineering) – Storm water permits are tracked in Excel
- PW (Maint) – Contract out major fleet work
- PW (Maint) – Contracted work is also captured
- PW (Maint) – Could benefit from paperless timesheets, given that the majority of the Maintenance Division is out in the field all day
- PW (Maint) – Creating internal and external work orders for tree maintenance/trimming
- PW (Maint) – Have two bays, one mechanic, and one supervisor
- PW (Maint) – Have had Ron Turley and Associates (RTA) Fleet Management System for over 10 years

- PW (Maint) – Looking at SeeClickFix for processing service requests
- PW (Maint) – Manage the City's and Westbay Sanitary District's fleet
- PW (Maint) – Not using RTA to its full potential
- PW (Maint) – PW bills the Westbay Sanitary district for labor and parts; cost of parts includes a 15% markup
- PW (Maint) – The Trees supervisor uses a tablet to update the tree inventory (Arbor Access)
- PW (Maint) – Using Comcate for service requests
- PW (Maint) – Water team has a tablet and laptops to access service requests
- PW (Maint) – Work orders for trees are created in Arbor Access
- PW (Maint) – Would like to start tracking costs associated with work orders

Recommendations

- Replacing the current outdated, multi-vendor software applications environment with a modern, fully integrated ERP solution.
- Ensure that the City has identified all its applications needs, and that appropriate funding has been budgeted for a replacement ERP by conducting a comprehensive needs assessment and developing a Request for Proposal (RFP).
- The needs assessment process should provide an inventory of current and future functionality requirements by application and department. The process can also be used to inventory all reporting requirements, as well as integration/interface requirements between other applications, such as CRM, ECMS, website, GIS, etc.
- The needs assessment should also include a business process review for each module, including reviewing manual processes and shadow systems, such as spreadsheets, to determine automation improvements that will result in labor efficiencies.
- Through the RFP process, potential ERP software vendors will be asked to respond with their capabilities and compliance with City-specific requirements.
- Select new ERP software vendor according to the *Software Selection Best Practices* initiative.
- Follow implementation project management best practices according to the *Project Planning and Implementation Best Practices* initiative.

Note: *City IT staff have not conducted this type of project with these specific business process analysis, documentation, and negotiation requirements. It is highly recommended that the City consider obtaining consulting services from a municipal ERP Applications Subject Matter Expert (SME) to perform the business process reviews, needs assessment, RFP development process, and contract negotiations process.*

Benefits

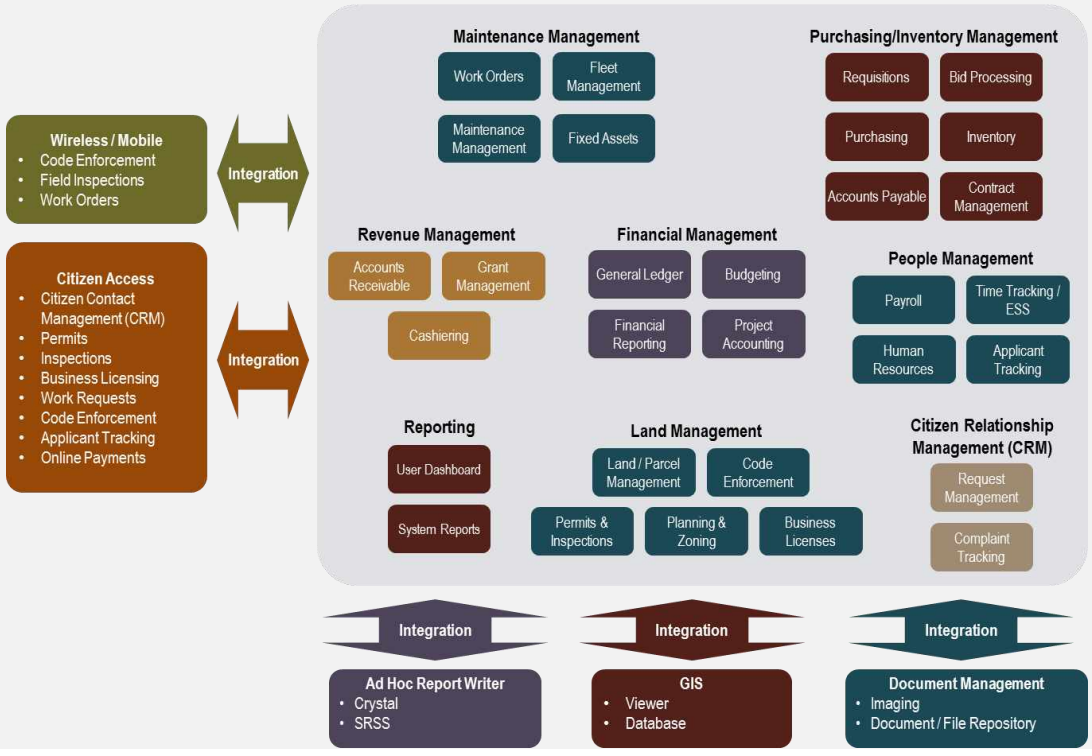
- Free up thousands of labor hours per year
- Faster invoicing and purchasing
- Identification of integration requirements
- Centralized access to information
- Elimination of information silos
- Improved streamlined processes
- Improved operational consistency, efficiency, and accuracy
- Improved online access to information
- Improved financial reporting
- Improved utilization and realization of ERP investment
- Potential reduction in ERP annual maintenance and support fees

Benefits of Modern ERP Software

An *Enterprise Resource Planning (ERP) System* automates and integrates many core, City-wide functions into a single solution, while automating manual processes and providing a central location of information and reporting. An enterprise system allows collaboration and sharing of information between divisions, departments, and citizens to provide a transparent and efficient government operation. The benefits of an enterprise system are numerous and include:

- Built-in integrations between Land, Work, Financial, and People Management application suites
- Newer technology platform (processing, capacity advantages)
- Real-time notifications/queues
- Task tracking
- Real-time access to information
- Elimination of duplicate data entry
- Improved data integrity
- Centralized location and customer account maintenance
- Reliable information
- Workflow capabilities
- Centralized cash receipt capabilities
- Efficient revenue collection
- Reduced operating costs
- Improved internal communication
- Foundation for future improvement
- Potential reduction in annual maintenance and support fees
- Improved online information for citizens to access

Example Enterprise Applications Overview



Financial and People Management

The *financial management suite* is a suite of an enterprise system that encompasses the financial tasks and processes performed to ensure all organization-wide activity is properly accounted for and accurately reported to local, state, and federal agencies. Benefits of a financial management suite include:

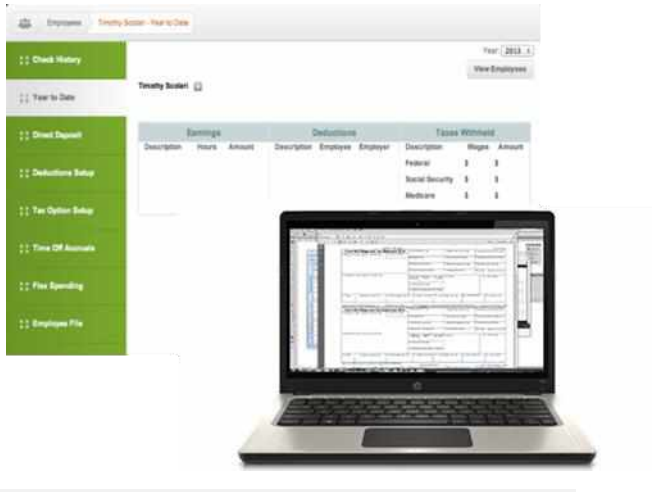
- Quick generation of financial reports
- More efficient budgeting processes
- Real-time access to available budget and funding
- Better spending controls for departments and projects
- Management of grants and funding sources
- Real-time inquiries into capital improvement project progress

The *people management suite* manages the organization's workforce and provides automation to the human resources, payroll, time keeping, and applicant tracking functions. Employee self-service is also available to allow employees the flexibility in retrieving their information at their convenience. Benefits of a People Management suite include:

- Paperless personnel forms
- One-time data entry
- Tracking or misplacement of employee paper files
- Incorporation of Employee Self-Service (ESS)
- Integration between time keeping, payroll, HR, and financial management
- Quick and reliable reporting to federal and state agencies
- Improved employee satisfaction
- Automated Time Entry Approvals and Payroll Calculations
- Minimal steps between processing payroll and issuing direct deposits and checks

Employee Self-Service

Employee self-service (ESS) empowers employees to provide, change, and retrieve their personal information through an online employee portal, thereby reducing the manual interaction required with the Human Resources Department. Employee Self-Service offers an online option for employees to access and manage information for themselves:



- Address changes
- Tax allowances changes
- Open enrollment benefits
- Dependent changes
- Leave/vacation accrual balances
- Electronic paystub copies
- Year-end W2s
- Populating and retrieving time sheets
- Time requests
- Tax forms
- Many other forms and applications

Reporting

The number one problem that is commonly seen when utilizing disjointed applications is the extensive time users dedicate to the consolidation of information for reporting purposes. Enterprise systems allow information to be quickly retrieved from a single source with numerous readily available reports. Users are also able to create their own reports without requiring them to be technical experts. This allows staff to spend more time studying analytics rather than manually assembling reports. Benefits of improved reporting include:

- Aggregated data across divisions, departments, and organization
- Improved data accuracy and reduced human error
- Intuitive report creation capabilities
- Board-ready reports
- Sharing of created reports
- Elimination of labor-intensive report creation

Individual User Dashboards

Dashboards form part of a user's home page and display reports, key indicators, and other metrics regarding day-to-day operations, activities, and historical trends. Benefits of dashboards include:

- Quick links for immediate access to required tasks and approvals
- Easy modification of dashboards for each user's preference
- Automated generation of dashboard information
- Transformation of data into visual information
- Easy-to-understand graphics
- Real-time analysis
- Drill-down access to activity detail

Mobile Computing

Mobile computing provides the flexibility to operate a more mobile and productive workforce. An enterprise system can allow staff to utilize applications while in the field in order to perform their job functions while away from their office. Common benefits of mobile computing include:

- Completion of work while in the field
- Real-time access to information
- Inspection results in the field
- Receipt of notifications and job assignments
- Reduced travel to and from office locations
- Map routing based on location of activities
- Retrieval of mapping information
- Management of code enforcement cases in field

Online Citizen Access

Online citizen access enables a more transparent government by providing the public with 24/7 access to real-time information for inquiries and payment processing. This empowers residents to retrieve online information that is pertinent to each individual, and for them to take further actions, which improves customer relations by eliminating the need to be physically present at City Hall. The following are examples of online citizen access transactions:

- Online permit applications
- Submit and access plan review comments
- Online payments
- Submit complaints
- Submit citizen requests
- Submit inspection requests
- Access to inspections results
- GIS maps (zoning, voting cities, etc.)

Citizen Request Management

A *citizen request management system* is used to track, manage, and resolve citizen concerns and requests in a timely manner by automatically routing citizen requests to the appropriate department. It also provides the citizen with the flexibility to submit and track their complaints through the Web or a mobile phone application. Common benefits of a citizen request management system include:

- Ability for citizens to submit requests 24/7 through a phone application or the website
- Automatic assignment and routing of requests, by type, to appropriate department(s) or staff
- Ability for citizens to view current request status
- Conversion of requests to work orders
- Ability to include photos and geolocation of a request
- More effective and efficient processes
- Improved transparency and citizen relationships

Land Management

The Land Management system is one of the suites that are offered by enterprise application systems and manages the creation, issuance, and tracking of community development activities related to planning and zoning, permitting, building inspections, licensing, and code enforcement. Benefits associated with the utilization of the application include:

- More automated permit processing from application through permit issuance
- Automatic routing for permits requiring reviews and approvals
- Single electronic file for all permit applications and documents
- More automated tracking of reviews, inspections, and fees by permit and development projects
- Tracking of timelines, tasks, and required group reviews
- Viewing all project and permit information at a glance
- Readily accessible planning and zoning records
- Automatic generation of case documentation
- Centralized current and historical parcel information

GIS Integration

Enterprise systems offer real-time integration to *geographic information systems (GIS)* in order to display land-use, zoning, and infrastructure layers on a map, as well as parcel, permit, inspection, code enforcement, and work order activity that resides within the enterprise system. Benefits of *GIS integration* include:

- Viewing system activity on a map (e.g., active projects, permits, cases, etc.)
- Map routing of work orders, service request, and daily inspections
- Displaying locations of infrastructure assets
- Generating asset condition analysis
- Ability to overlay multiple map layers
- Integration to website for resident inquiries

Maintenance/Work Order Management

Another suite of an enterprise system is the *maintenance/work order management system*, which provides automation in managing the maintenance and day-to-day operations related to infrastructure assets, buildings, facilities, and fleet vehicles, while being able to capture and report on the labor, equipment usage, and materials costs associated with a work order and preventative maintenance. System benefits include:

- Electronic routing of citizen requests
- Centralized task and maintenance management
- Completion of work orders from the field
- Streamlined public works operations
- Retrieval of historical work order information and costs
- Quicker work order completion times
- Improved decision making through access to real-time information
- Viewing of asset and activity trends visually through GIS mapping capabilities
- Better replacement planning and forecasting
- Enhancement of staff productivity
- Improved compliance with regulatory standards
- Improved safety and risk management

17. Project and Grant Accounting

Findings and Observations

The City has expressed the need to improve tracking of projects and grants. The project accounting capabilities in Cayenta are not being used and related tracking of data and information is occurring manually, in spreadsheets.

Although not complete, the list below provides some examples of the City's grant and project tracking and accounting needs:

- Improvement of cost reporting for all projects and grants
- Consultant expense tracking
- Tracking of staff time and labor costs by project and/or task
- Projects/portfolio tracking, schedule/progress tracking, and prioritization
- General Fund projects tracking and prioritization
- Tracking and reporting of costs by project/grant category
- Integration with existing finance and budget system

Project accounting applications also provide a method for multi-year tracking of budgets and expenditures for grants. Project and grant applications examples include grant programs, special programs, capital improvements, etc. Grant and project detail can be recorded in the General Fund, as well as all other funds (special projects, grants, programs, etc.) Individual Grants can be created and tracked through the entire grant process, from application through conversion to a project. Project and Grant Accounting is a subsidiary module of General Ledger and is distributed separately.

Because Project and Grant Accounting is a subsidiary ledger to the General Ledger, account transaction flows can be mapped and created, allowing the City to process transactions (requisitions/POs, invoices, payments, and even payroll) within the accounting system once, and have the information post to the General Ledger and the appropriate project/grant ledger(s). Projects and grants can also have their own start and end dates that do not need to coincide with the organization's fiscal/budget year, but the system can report on the project and grant schedule or provide reports that follow the fiscal/budget year.

The key to a successful Project and Grant Accounting system is the information that can be stored, tracked, processed, and used for reporting, including but not limited to:

- Project Definitions – Start Date, Estimated Completion Date, Percent Complete, Funding Sources, Project Managers, Statuses
- Project Phases – Projects can be divided into phases, tasks, and sub-tasks to track activities at a high level or down to a detailed level
- Grant Tracking – Grants can be tracked from the application process through completion, along with the ability to track matching funds, grant specifications, conditions, and grant use, as well as reimbursement amounts
- Project Creation from Grant – Some systems allow the creation directly from a grant
- Granters/Grantees - Track grantees, sub-grantors, and sub-grantees
- Matching Funds – Track matching funds from other organizations
- Funding Sources – Track funding sources, including grant and grantor information
- Reimbursement Rules – Create rates and rules for reimbursement billing and indirect costing
- Bill Calculation – Calculate and bill for reimbursements, including indirect costs
- Drill-Downs to Information – Drill-down with connection to Next Year Budget and Work Orders for a project, etc.

- Milestone Dates/Triggers – Define Milestones/Key dates that trigger alerts or action to allow for tracking of meetings, payment, and work schedules tied to meeting goals
- Alert Distribution – Alerts often include the ability to create business rules for initiating actions or to alert appropriate staff
- Inquiry Details – Inquire into detailed activities posted to a particular project or grant. This can include:
  - Purchasing
  - Payables
  - Payroll
  - Receipts
  - General Ledger
- Auto-Posting – Many systems allow the ability to pick a project and use the system's auto-posting utility (from purchase order, invoice entry, payroll, timekeeping, etc.)
- Project Summary Query – Most systems allow for the summary display of any project (filtered by data from: Last Year, Current Year, and Project Life):
  - Budget, Expended
  - Pre-Encumbered
  - Encumbered
  - Available
  - Estimated Revenue
  - Actual Revenue
- Expense Reporting – Report by period and category of expense (i.e., labor, materials, overhead, and other user-defined categories)

A Case Study

The following is a summary of a project and grant accounting system implementation recently completed by a county in the Midwest (hereafter called "County"). It is provided as an example of the potential benefits the City may achieve through the implementation of Project and Grant Accounting.

The Situation

Grant accounting is challenging for many government and quasi-governmental agencies because of the report flexibility required for fiscal year, calendar year, project schedule, ever-changing reporting requirements, and the complex environment of project accounting. Over many years, the County maintained two accounting systems, one for their organizational General Ledger and the other for project and grant accounting. With this record-keeping method, data was difficult to reconcile for auditing, reporting, and for querying real-time project and grant budget and expenditure information. Faced with federal and state reporting requirements covering 60 departments, the Deputy Auditor and Auditor team spent numerous hours pulling and reconciling data from the two systems on a daily basis. This resulted in lengthy auditing time, data entry errors, delayed access to grant data and too much time spent on double entry. Without an integrated accounting system, the County faced an accounting headache "that led to spending many hours with auditors to explain what General Ledger accounts went into what grant cost categories," per the words of the Deputy Auditor. Ready for a change, the County sought a solution.

Actions Taken

The County turned to their existing ERP vendor to determine if they offered a solution. Their ERP vendor offered a Project and Grant Accounting sub-module to the General Ledger that the County already had in operation and had used successfully for several years. The County conducted a detailed needs assessment and investigated, as well as analyzed, numerous vendor options, including the option from their existing ERP vendor. The final decision was to acquire the system from their existing vendor. The high-level goal was for the new Project and Grant Accounting system to provide an optional method for multi-year tracking of budgets, expenditures, and revenues for County projects and grants. By creating separate subsidiary project ledgers in the Project and Grant Accounting module, the County would be able to track the entire project/grant process, from application (if grant-based) through conversion to a project, alongside their regular General Ledger accounting. The County's plan was to test the project ledgers in the Project and Grant Accounting module in a single department. The Deputy Auditor and her team worked with the department's Grant Coordinator to set up the project ledgers specifically for grant reporting requirements, using the system's master tables for projects grants and accounts. Using the project master, the team created account strings to identify each project. Each account string was set up, per the cost categories required for the project/grant and to the employees' time and pay records in County's employee payroll master.

The Department Coordinator tested the new setup utilizing requisition entry, invoice entry, employee self-service, and time entry. By the end of the first quarter, they confirmed the success of their project and grant ledgers' ability to maintain their projects/grants within the new system. The department was able to eliminate the need for dual entry from having to maintain separate accounting and project/grant systems. Following the success of this test, the Deputy Auditor and the project team worked to roll out Project and Grant Accounting system throughout all the necessary County departments. The Deputy Auditor stated that, "Once the project account strings were established, the departments were able to process their requisitions, invoices, and payroll within our ERP system one time and have the information post to the General Ledger and the Project Ledger automatically."

Results

The Deputy Auditor stated that the greatest benefit was the time saved and the information available. "The implementation [of Project and Grant Accounting] saved the grant clerks five percent of their time per year, which freed them up for other work. The time saved was due to the elimination of the dual system environment and the associated dual entry, required reconciliation, and the resulting corrections from the reconciliation process. The Project/Grant Ledger has saved time with the grant auditors because the auditors can see the detail in the grant cost categories without having to make repeated inquiries to the Auditor's office for verification."

Through the implementation of the new Project and Grant Accounting system, the County was able to realize a number of benefits, including, but not limited to:

- Real-time access to project/grant budgets across all activities, including payroll and invoicing
- Accurate reporting for auditors and federal and state agencies
- Live updated budget information for processing requisitions or invoices
- Easy preparation of Schedule of Federal Award Expenditures
- Reduced data entry errors and time
- Departmental control over own projects and grants
- Project central access for grant administrators, giving query capability to view all information

Implementing Project and Grant Accounting gave the County a multi-level, single vendor solution for all their project/grant management requirements, from the department level to the auditor's office. Departments and the County, as a whole, benefited and experienced positive results.

Staff Feedback

- CMO – Need the ability to track project expenditures and available budgets in real time
- CMO – need project management resource tracking of people, time, facilities, budget, etc.
- Comm. Dev. – Need employee task tracking
- Comm. Serv. – Need Grant Reporting Procedures
- Comm. Serv. – It's a challenge to provide grant reports on time
- Finance – Projects and grants are currently part of the GL accounts structure
- Library – Need the ability to track temp time that was spent on a project (e.g., summer reading program)
- PW – Need better reporting of Capital Improvement Projects

Recommendations

- Conduct a process review and needs assessment identifying required feature/function capabilities.
- Review applicable manual processes and shadow systems, such as spreadsheets or databases to determine automation improvements that will result in labor efficiencies.
- Prioritize, implement changes, and provide sufficient training to all applicable users.
- Implement project and grant accounting in conjunction with the *Enterprise Resource Planning (ERP) Replacement* initiative.

18. Contract Management

A *contract management system* is a software module for managing the entire contract management lifecycle process, including contract development, negotiation, approval, and renewal. Typical contract management systems include features that allow an organization to maintain information on contract approval processes, responsible parties, and key contacts. Systems also include automated alert reminders for events such as contract expirations, required financial obligations, or anticipated receipts tied to a contract.

Findings and Observations

- The City is currently using Contract Advantage - Great Minds Software for its contract management system.
- Contract management software is available as a standalone software system or sometimes as part of an overall ERP solution.

Staff Feedback

- CMO – Would like electronic signatures for contracts in order to avoid back-and-forth movement of contract documents
- Finance – Would like to be able to track the contract through its term

Recommendations

- Identify business needs and objectives for contract management software according to the *Software Selection Best Practices* initiative.
- Consider budgeting for inclusion of a contract management module as part of a new ERP solution (see *Enterprise Resource Planning (ERP) Replacement* initiative).

19. Cashiering Needs Assessment and Replacement

Cashiering solutions provide convenient payment methods that enable reconciliations that are more accurate and have automated cashiering processes and centralized customer information. Benefits of integrated cashiering software include time reductions in manual processing, updating, and sharing daily payment activities.

The City is predominantly using QwikRegister. The City is not currently using the cashiering capabilities from Cayenta. Balancing is done in QwikRegister, but is manually entered into other systems like Cayenta, Tidemark, the Sierra Library system, etc. The City's current approach is a break from the more common practice of using the integrated cashiering module provided by the ERP system vendor. Diversion from this practice does make sense, however, when taking payments for permits, Parks and Recreation, etc., in order to use cashiering capabilities in these systems so they can be tied to customer accounts and activity, and then quickly exported and electronically uploaded to the central ERP system.

Staff Feedback

- Comm. Dev. – Payments are taken directly in QwikRegister and then manually entered into Tidemark (double entry)
- Comm. Serv. – Would like to take credit card payments at remote locations
- Library – Use QwikRegister to keep track of cash receipts from patrons at Library front desk
- Library – Need to update or replacement QwikRegister cash register software, which operates on Windows 7+
- Library – Would like credit card payment ability for non-Library account purchases (Friends of the Library books, promotional products, exam proctoring, etc.)
- Library – Credit card payments are taken directly in the Sierra Library system, and then manually entered QwikRegister (double entry)
- Police – Use QwikRegister to take payments for permits and releases
- Police – Dispatch takes in cash, credit card, and checks for miscellaneous fees after business hours, often requiring them to leave 911 unattended
- Police – Dispatchers currently write out a receipt in a receipt book
- Police – Need to consider easier ways for dispatch to take payments (i.e., iPad with a credit card reader)
- Police – QwikRegister software for the Records Division should be replaced
- Police – The vendor for QwikRegister is no longer in business
- Police – QwikRegister will usually freeze one computer, leaving staff with only one computer to work with while handling large volumes of customers at the counter

Recommendations

- Conduct a review of all cash receipting procedures, identifying manual processes and other improvements that can provide efficiencies and improved customer service.
- Because nearly all ERP solutions incorporate a cashiering module, the City should consider combining this effort with the *Enterprise Resource Planning (ERP) Replacement* initiative.
- Consider utilizing a third-party SME for an assessment process and RFP process.
- Some department-specific applications, such as VSI RecTrac, the Land Management system, and others, will need to interface with the organization's primary cashiering system or general ledger.

Benefits

- Centralized activity and reporting
- Consistency between locations
- Reduction of double entries and manual reconciliations
- Better recordkeeping
- Adherence to accounting procedures and principles, thereby mitigating risk

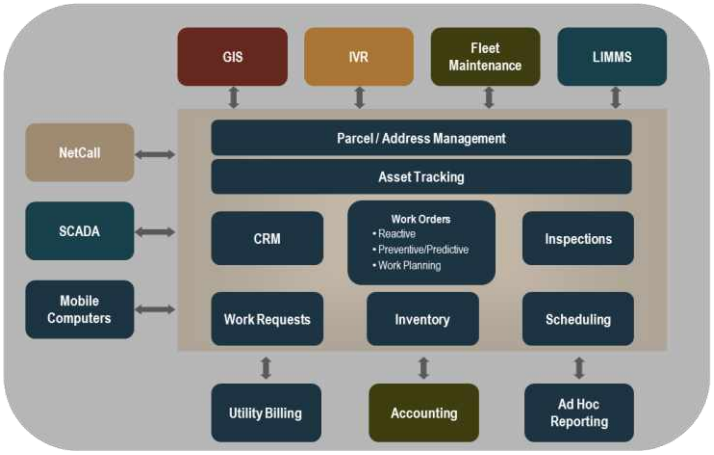
20. Work Orders/Maintenance and Asset Management System

Maintenance and management of the City structures, streets, sidewalks, parks, trails, bridges, drainage, and culverts, etc., are managed mostly via manual processes on paper and MS Excel spreadsheets. The City does not currently have a comprehensive *work order/maintenance management system* for their infrastructure assets, but does use some other applications such as Global Water FATHOM Citrix system for water and Arbor Access with West Coast Arborists mobile app for trees.

The following is a list of typical maintenance and asset management software system functionalities. It is not intended to be all-inclusive, exclusive, or organized by specific software modules.

Maintenance and Asset Management Functionalities

- Work Requests
- Inspections and Condition Assessment
- Work Orders
- Preventative and Predictive Maintenance
- Facilities Maintenance
- Asset Tracking
- Warehouse Inventory
- Parcel/Location Management
- GIS Integration
- Report Writing
- Budget Forecasts



Staff Feedback

- CMO – CCIN is not helpful and needs to be replaced
- CMO – GovQA is a portal used by public to submit a public records request
- CMO – GovQA provides some automated workflows and allows for management of requests to ensure compliance with legal requirements
- CMO – Using Direct Connect to capture public complaints, which are routed to staff email addresses
- Comm. Serv. – Using Comcate for customer response management
- Comm. Serv. – Using Outlook to schedule work orders
- PW – Contracted work is also captured
- PW – Creating internal and external work orders for tree maintenance/trimming
- PW – Looking at SeeClickFix for processing service requests
- PW – Need a traffic sign and signal inventory
- PW – Not using RTA to its full potential
- PW – The trees supervisor uses a tablet to update the tree inventory (Arbor Access)
- PW – Using Comcate for service requests
- PW – Water team has a tablet and laptops to access service requests
- PW – Work orders for trees are created in Arbor Access
- PW – Would like to start tracking costs associated with work orders

Recommendations

- Conduct a work order/maintenance and asset management system needs assessment identifying required feature/function capabilities.
- Review applicable manual processes and shadow systems, such as spreadsheets, to determine automation improvements that will result in labor efficiencies.
- Apply the results of the needs assessment to research options and solicit quotes for a work order/maintenance and asset management system.
- Many ERP system vendors offer work order functionality, the City should consider including these capabilities as part of the *Enterprise Resource Planning (ERP) Replacement* initiative.
- Follow best practices according to the *Software Selection Best Practices* initiative to select the appropriate system.
- Consider utilizing a third-party SME for an assessment process and RFP process in conjunction with the *Enterprise Resource Planning (ERP) Replacement* initiative.

Benefits

- Significantly greater workflow efficiencies within Maintenance Management, Work Orders, and Infrastructure Asset Tracking
- Reduced time and effort to provision services
- Improved inspections
- Increased staff and citizen satisfaction
- Improved performance tracking, reporting, and measurement
- Reduced stressors and workload due to improved automation and reduction in manual processes
- Reduced risk of institutional knowledge reliant on highly manual processes leaving the organization due to staff turnover or retirement
- Improved project management and reporting

21. Fleet Management

Fleet management software (FMS) provides the ability to perform tasks in the management of any or all aspects relating to the City's vehicle and equipment fleet. Fleet management, at a high level, encompasses all vehicle/equipment operations, from acquisition, through maintenance and life-cycle replacement analysis, to final disposal.

Findings and Observations

- The City is currently using Ron Turley and Associates (RTA) software and the Fleet Manager spends a good deal of time updating and managing fleet and equipment manually with spreadsheets and generic desktop software.
- Fleet includes vehicles and numerous types of rolling stock (vehicles) and equipment.
- Due to the large number and types of equipment, the City wants to ensure that any new system assists not only with vehicle maintenance, but also meets their needs in maintaining and managing such equipment.
- The City also maintains the fleet for the West Bay Sanitary District, which includes 24 vehicles—mostly heavy duty trucks. The City charges the District for Parts at 15% and charges an hourly fee for labor. Public Works does recap all parts, hours, etc., and sends out an invoice. Payment for invoices are sent by the West Bay Sanitary District directly to Finance for processing.
- There is a desire for any new fleet system to have the ability to generate or convert the work orders into an invoice for West Bay Sanitary District.

Staff Feedback

- PW – Contracts out major/large fleet work and also contract out for painting, body work, and smog testing
- PW – Contracted work is also captured now, PW would like this contracted work to be tracked in any new feet management system
- PW – Have two bays, one mechanic, and one supervisor
- PW – Have had Ron Turley and Associates (RTA) fleet management system for over ten years
- PW – Manage the City's and Westbay Sanitary's fleet
- PW – Not using RTA to its full potential

Recommendations

- Complete a review and a needs assessment of the City's fleet maintenance requirements and document the results.
- Apply the results of the needs assessment to research options and solicit quotes for fleet management software solutions.
- Follow best practices according to the *Software Selection Best Practices* initiative, to select the appropriate system.
- Because some work order/maintenance management solutions also incorporate fleet management, the City should consider combining these efforts (see *Work Orders/Maintenance and Asset Management System* initiative and also the *Enterprise Resource Planning (ERP) Replacement* initiative).

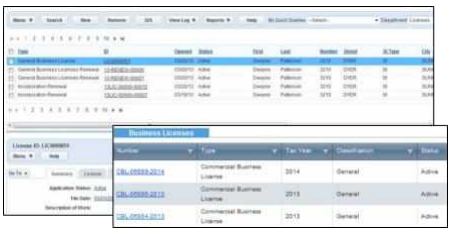
Benefits

- Reduced vehicle and equipment ownership costs
- Extended useful life of vehicles and equipment
- Improved life-cycle cost analysis and replacement decision making
- Increased equipment availability
- Increased warranty recovery
- Optimized inventory levels
- Improved labor productivity
- Enhanced the satisfaction of the people that use the vehicles and equipment
- Ensured regulatory compliance for vehicle management, maintenance, and parts inventory management

22. Land Management System Replacement

Findings and Observations

A typical land management suite of applications includes:

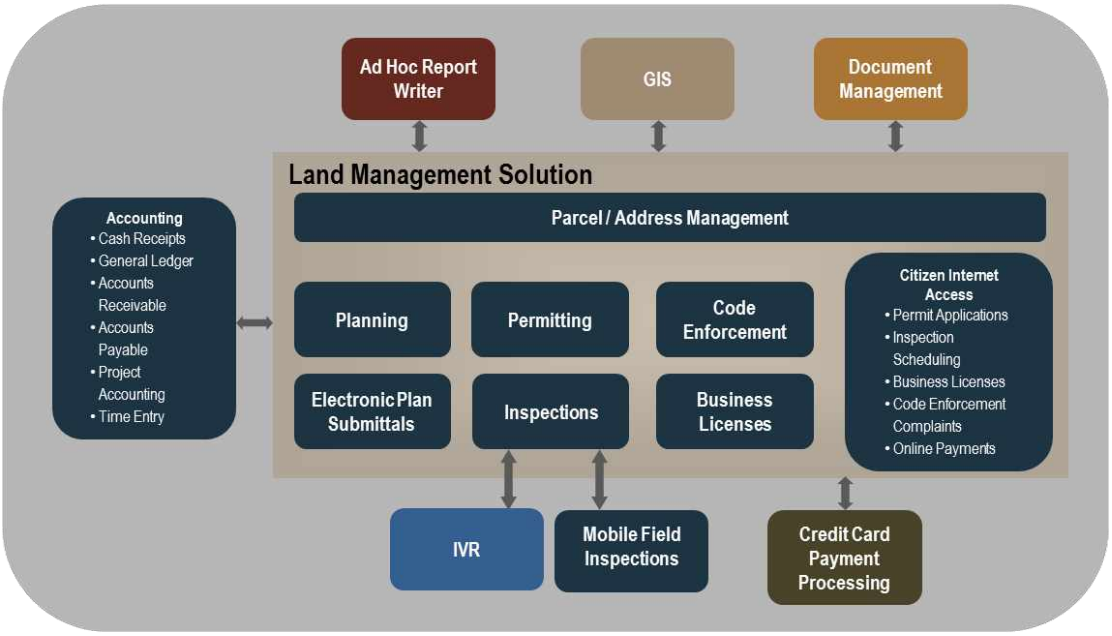


- Development Planning and Zoning
- Permitting
- Inspections
- Code Enforcement
- Recurring Revenue and Business Tax (Licensing)
- Parcel/Address Management

The City should expect significant productivity gains with a fully implemented, integrated land management application solution.

Business licensing (business tax) and recurring billing/revenue is typically included in a land management suite, due to the connection to a common address and parcel database, as well integration to permitting and code enforcement. Automation of licensing/tax applications reduces paperwork, staff processing time, and increases citizen satisfaction by providing them the ability to submit, renew, pay, and print business licenses online at their convenience.

The following illustration and table shows typical modules available in land management systems.



Current Applications and Vendors	Currently Owned	Implemented	Potential Modules in Single Vendor Solution
Land Management (Development Services)			
Tidemark Advantage			
Permits	Yes	Yes	Yes
Code Enforcement	Yes	Yes	Yes
Parcel/Address Management	Yes	Yes	Yes
HdL			
Business Licenses	Yes	Yes	Yes
TES/TIM			
Mobile Inspections	Yes	Yes	Yes
Modules Not in Use or Not Available			
Planning Projects and Zoning			Yes
Inspections			Yes
Cash Receipting			Yes
GIS Viewer			Yes
Mobile Code Enforcement			Yes
Online Services			Yes
Planning Projects			Yes
Permitting			Yes
Inspections Scheduling/Requests			Yes
Business Licensing			Yes
Payments			Yes

Staff Feedback

- CMO – Need online planning and building portal for the public to view and monitor projects
- CMO – Interested in metrics and key performance indicator reporting for land management projects
- Comm. Dev. – Using Tidemark for Building/Planning permit tracking, parcel data access/maintenance, and reports
- Comm. Dev. – Using Excel for analysis/calculations (e.g., calculating floor area/building coverage maximums)
- Comm. Dev. – Using Excel for project tracking timesheets
- Comm. Dev. – Using Excel for project schedules
- Comm. Dev. – Using Excel for creating/editing public notice address lists
- Comm. Dev. – Using Excel for building inspector appointment scheduling
- Comm. Dev. – Have a Microsoft Access database of historical building permit and inspections data
- Comm. Dev. – Need to allow for online status checking of applications
- Comm. Dev. – Need online inspection scheduling
- Comm. Dev. – Need fee calculations to be automatically calculated
- Comm. Dev. – Need automatic tiered actions

- Comm. Dev. – Need a better system for holds (e.g., stop work notifications, business license required, open code enforcement case on property, etc.)
- Comm. Dev. – Digitized paper needs to link with parcel/permitting system(s)
- Comm. Dev. – Need to streamline public meeting notice mailings; currently export Excel list of addresses, clean up duplicates/errors, creating Word notice, copy project description from Tidemark, change planner contact info, link Word and Excel files through mail merge, print, and mail notices
- Comm. Dev. – Need to include calculated zoning parameters (FAL/FAR in parcel database enhancements
- Comm. Dev. – Need to include building coverage in parcel database enhancements
- Comm. Dev. – Need to include R-3 infill density in parcel database enhancements
- Comm. Dev. – Need to include substandard lots in parcel database enhancements
- Comm. Dev. – Need to include homeowners' associations in parcel database enhancements
- Comm. Dev. – Need to include easements in parcel database enhancements
- Comm. Dev. – Generally link disparate parcel information systems (Tidemark, GIS, building permit scans, business licenses, etc.) so that multiple programs don't have to be opened to get basic information
- Comm. Dev. – Permit records searches are convoluted under current system
- Comm. Dev. – Would be great to link automatically to County parcel GIS system (without having to retype address)
- Comm. Dev. – Labor-intensive routings/task assignments to other staff members
- Comm. Dev. – Generate various project-related letters (30-day review, actions, etc.) to automatically pull in relevant project-specific information (contact info, project number description) and combine that with standard conditions/disclaimers and project-specific guidance
- Comm. Dev. – Could use self-service stations at Building/Planning counter to allow customers to retrieve basic parcel information
- Comm. Dev. – Could use self-service stations to allow customers to start applying for permits
- Comm. Dev. – Ability to notify a customer when Plan Checker review has been completed
- Comm. Dev. – Need a Housing Element Annual Report for number of units (by type/income category) with issued building permits
- Comm. Dev. – Ability to report on maximum allowable development status (e.g., El Camino Real/Downtown Specific Plan)
- Comm. Dev. – Ability to report on residences and non-residential square feet approved for/under development (e.g., Joint Venture Silicon Valley Land Use Survey)
- Comm. Dev. – Ability to create annual Department of Finance Building Report
- Comm. Dev. – Ability to report on various one-off permitting requests (pipeline projects, approvals, etc.)
- Comm. Dev. – Ability to report and monitor projects approved/built under pending General Plan
- Comm. Dev. – Ability to receive reminders pending expirations permits expirations (e.g., Limited Term Project Approvals)
- Comm. Dev. – Ability to provide better estimates to applicants of "typical" total case costs
- Comm. Dev. – department has a digital camera for site visit photos, but many staff members just use their cell phone camera
- Comm. Dev. – Tidemark permitting system is extremely out-of-date and in need of replacement
- Comm. Dev. – Police uses Tidemark for code enforcement
- Comm. Dev. – Tidemark is on an old and unsupported version

- Comm. Dev. – Have a script that runs monthly to retrieve counter assessor parcels and compare them with Tidemark
- Comm. Dev. – Not all records were successfully converted into Tidemark, when it originally went live in 1999
- Comm. Dev. – Payments are taken directly in QwikRegister and then manually entered into Tidemark (double entry)
- Comm. Dev. – Inspection requests can be made by calling the building department between the hours of 8 and 8:30 AM
- Comm. Dev. – Would like to take simple permits online
- Finance – Using HdL for business license applications and renewals
- Police – Need annual parking permit renewals for overnight parking permits
- Police – Currently not taking parking payments online
- Police – Need annual parking permit renewals for downtown parking
- Police – Use Tidemark code enforcement capabilities
- Police – Are doing duplicate entries into both Tidemark and RIMS
- PW – Files need to be shared and stored based on address
- PW – Need a permit system upgrade
- PW – Need better management and reporting of storm water permit
- PW – Need to automate inspection requests
- PW – Need to automate the creation of notices, comment letters, etc.
- PW – Need to automate Lawn Be Gone program
- PW – Need to offer online truck permits
- PW – Should accept permits online
- PW – Storm water permits are tracked in Excel

Recommendations

- Replace the Tidemark and HdL software environment and start by conducting a land management system needs assessment. Identify additional functionality requirements, additional modules needed, and GIS integration requirements.
- The existing Tidemark system is an old version and assistance from an outside contract consultant is necessary to keep the system in operation. Tidemark was acquired by Accela and the next move is to Accela's newest product and a migration away from Tidemark.
- Review applicable manual processes and shadow systems, such as spreadsheets, to determine automation improvements that will result in labor efficiencies.
- Consider implementation of a land management system as part of the new ERP purchase and implementation.
- Consider adding a Development Services Technology Fee to permits that require inspections. Many cities utilize this strategy to improve customer service through technology improvements.
- Select new software vendor according to the *Software Selection Best Practices* initiative.

Benefits

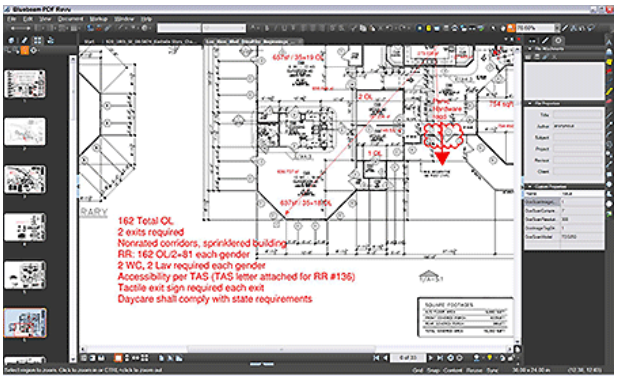
- Significantly greater workflow efficiencies
- Reduced stressors and workload due to improved automation and reduction in manual processes
- Reduced risk of institutional knowledge, leaving the City due to staff turnover or retirement
- Improved project and permit tracking and reporting
- Ability to result inspections and code violations in the field with mobile computing
- Automated time tracking and workload tracking of billable and non-billable hours
- Online citizen access capabilities
  - Improve community relations through 24-hour citizen access
  - Ability to automate inspection scheduling online
  - Eliminate time-consuming "status check" phone calls
  - Ability to apply and pay for permits online
  - Instant inspection result retrievals by contractors and applicants

23. Electronic Plan Submittals and Reviews

Electronic plan reviews for development and architectural plans related to City permitting and planning processes can be submitted, reviewed, and marked-up electronically. Electronic plans can result in a reduction of lost plans and physical storage requirements while enhancing sharing, collecting, storing, and retrieving of plans during the process and through retention periods.

Findings and Observations

- Community Development would like to consider and evaluate utilizing electronic plan submittal and review processing.
- Multiple solutions are available, including purchased and online hosted solutions.
- Online solutions may be purchased in a traditional manner or paid on a per page/project/permit basis.



Staff Feedback

- Comm. Dev. – Interest in new electronic plan check programs
- Comm. Dev. – Scanning is a somewhat cumbersome/manual process
- Comm. Dev. – City offices are being reconfigured for additional hiring, which may impact our current paper file cabinets
- Comm. Dev. – Currently request copies of plans to be shared among the reviewing departments
- Comm. Dev. – Uncertain about using electronic markups quite yet

Recommendations

- Explore solution options and capabilities.
- Consider cost-benefit of available solutions.
- Consider the selection and implementation of electronic plan review software along with the land management system or as part of the new ERP purchase and implementation. See *Enterprise Resource Planning (ERP) Replacement* and *Land Management System Replacement* initiatives
- Select new software vendor according to the *Software Selection Best Practices* initiative.

24. Human Resources System Improvement or Replacement

Findings and Observations

A *human resources information system (HRIS)* contains numerous Human Resources-related functions within a single solution, while also providing accurate and secure access of employee information. An HRIS typically includes the following capabilities:

- Employee Internal/External Training
- Professional Development
- Certifications and Licenses
- EEO Reporting
- OSHA Reporting
- HIPAA Reporting
- Insurance and COBRA Reporting
- Emergency Medical Information
- Workers' Compensation
- FMLA Benefit Payments
- Benefits Administration
- Seniority Tracking
- Retiree Tracking
- Terminations
- Employee Grievance Tracking
- Position Control
- Applicant Tracking
- Organizational Chart Generation
- Wage/Promotion/Disciplinary History
- Performance Evaluations
- Leave Requests
- Compensation Reporting
- "What If" Scenarios
- Labor Negotiation Tools
- Merit/Step Increases
- Tuition Reimbursement
- Travel Management
- Employee Surveys

These solutions also have integration with payroll processing and employee self-service (ESS) portals to provide employees the ability to retrieve their information in real time, 24/7.

The City is in the need of a reliable and capable HRIS through a replacement system that can be provided as part of an integrated ERP system.

The City's existing HR (and Payroll) system is provided in a SaaS (software as a service), fee-based environment, with ADP using the ADP Workforce Now system. The recurring fees are high, and ADP has had issues with a low level of implementation success, reliability, and ongoing support. Integration with financials, payroll, and other citywide systems also prove challenging and costly. Analysis will need to be completed, but original estimates are that an HR replacement system that would be delivered as part of a citywide ERP System (see *Enterprise Resource Planning (ERP) Replacement* initiative), would carry lower costs, and higher levels of functionality and integration.

Staff Feedback

- CMO – Manually processing time cards
- Comm. Dev. – Current time cards procedures are very manual and have a number of opportunities for human error
- Comm. Dev. – Need employee task tracking
- Comm. Serv. – Could use time clocks on computers
- Comm. Serv. – Need automated time cards
- Comm. Serv. – Only the Library is using time clocks
- Comm. Serv. – Using Excel to track staff trainings
- Finance – ADP is unable to allow supervisors to view their staff's timecards
- HR – ADP appears to have FMLA, but it has not been activated
- HR – ADP can track certifications and degrees

- HR – ADP's performance evaluation software is licensed but not implemented
- HR – Applicant tracking processes are manual
- HR – Are at least four versions behind on ADP
- HR – Are not satisfied with the existing version of ADP
- HR – CalOpps provide basic applicant tracking functionality
- HR – CalPERS does not tie into HR
- HR – Existing version of ADP lacks OSHA, works compensation, ACA, and leave management capabilities
- HR – Have an Access database with data prior to ADP implementation
- HR – Have been using ADP for at least 15 years
- HR – Manually processing open enrollment
- HR – Need a system to automatically notify IT and Finance of terminated employee access
- HR – Need automated time sheets
- HR – Need better tracking and reporting of leaves
- HR – Need better tracking of employee on-boarding
- HR – Need better Performance Management tracking, metrics, and training/development plans
- HR – Performance evaluation tracking is done in Excel
- HR – Need more efficient ways of preparing third-party reports (e.g., State Controller, EEO, OSHA, PRA Salary Report, etc.)
- HR – Need to comply with America Care Act (ACA)
- HR – Need to provide employees with self-service capabilities (e.g., tax changes, address changes, access to paystubs, etc.)
- HR – Need to use a system and not spreadsheets for position-control tracking
- HR – Payments to third-party vendors are either paid manually or via EFT
- HR – Using ADP for human resources and payroll capabilities
- HR – Using Excel for OSHA tracking/logs and to create OSHA 300 report
- HR – Using Excel for tracking health enrollments by employee, plan, unions, etc.
- HR – Using Excel for tracking retiree health credits
- Library –Doing paper time sheets in additional to clock-ins
- Library – Could use a Kiosk PC for all Library staff to access/manage ADP accounts
- Library – Currently have to manually keep track of hours worked for each temp employee so we do not go over pay period/annual limit
- Library – Need an ADP mobile app
- Library – Need PC/device timeclock entry for ADP (e.g., sick, vacation, adjustments, etc.)
- Library – There is one time clock at the Library
- Library – Using Volgistic to track volunteer hours
- Police – Multiple staff are reviewing and approving paper time cards
- Police – Telestaff works well for both scheduling and time cards
- Police – Use PBT Group TEAMS for online training and evaluation, audit, and management; this includes the field training program and daily observation reports
- Police – Using Telestaff for shift bidding, comp time, vacations, and shift swaps
- PW – Could benefit from paperless time sheets given that the majority of the maintenance division is out in the field all day
- PW – Need automated time cards

Recommendations

- Conduct a comprehensive process review and develop feature/function requirements for all HRIS needs.
- Follow best practices according to the *Software Selection Best Practices* initiative.
- Consider utilizing a third-party SME for an assessment process and RFP process in conjunction with the *Enterprise Resource Planning (ERP) Replacement* initiative.

25. Employee Self-Service

Findings and Observations

Employee self-service (ESS) systems often empower employees to maintain and retrieve personal information such as benefits, leave accruals, electronic paystubs, and year-end W-2s, all while requiring minimal effort from the Human Resources department. Sometimes, there are additional features that provide automated leave requests, pay calculators, and changes to personal allowances.

Some services are provided by the ADP system, but more services are desired by the City and full benefit of ESS has not been realized due to the problems with ADP and the ADP software implementation.

Staff Feedback

- HR – Need to provide employees with self-service capabilities (e.g., tax changes, address changes, access to paystubs, etc.)
- Library – Could use a Kiosk PC for all Library staff to access/manage ADP accounts
- Library – Need an ADP mobile app

Recommendations

- Review and document the City's ESS feature/function requirements.
- Explore best option for ESS between future time and attendance or ERP Solution.
- Follow *Software Selection Best Practices* initiative in selecting the best option.
- Consider utilizing a third-party SME for an assessment process and RFP process in conjunction with the *Enterprise Resource Planning (ERP) Replacement* initiative.

26. Time, Attendance, and Accruals Tracking

Findings and Observations

The tracking, recording, and storing of employee time and attendance information is a significant undertaking. A manual system with repeated entry and review steps often leads to inaccurate reporting, payroll discrepancies, and lost data. Automated time management systems can provide:

- Single-occurrence data entry, with integration to time clock equipment as needed
- Standardized employment rules and implementation
- Centralized database for electronic review of records
- Consistent enforcement of vacation and sick policies, FLSA requirements, and union rules
- Web- and server-based options
- Integration with other functions, such as accounting and/or payroll
- Automated calculations based on user parameters

Such systems:

- Reduce duplicate efforts, thereby saving valuable time and resources
- Decrease inaccuracies and human error
- Improve management of vacations, sick leave, and other absences

The City is currently working to implement the ADP system for this functionality. The Library has been the test department for this project. The implementation is behind schedule, there are still unresolved problems, and there are concerns that ADP may not succeed in fully completing the implementation. As a result, most departments are using paper time cards/sheets or spreadsheets.

Return-on-Investment (ROI) Consideration

In a software selection study conducted by Nucleus Research, an organization that transitioned to an automated time-entry system saw a return on investment within six months and an overall return of 225% of their initial investment.[5]

Staff Feedback

- CMO – Manually processing time cards
- Comm. Dev. – Need employee task tracking
- Comm. Dev. – Current time card procedures are very manual and have a number of opportunities for human error
- Comm. Serv. – Need automated time cards
- Comm. Serv. – Could use time clocks on computers
- Comm. Serv. – Only the Library is using time clocks
- Finance – ADP is unable to allow supervisors to view their staff's time cards
- HR – Need automated time sheets
- Library – Need PC/device time clock entry for ADP (e.g., sick, vacation, adjustments, etc.)
- Library – There is one time clock at the Library
- Library – Doing paper time sheets in addition to clock-ins

[5] "ROI Case Study: Kronos Workforce Timekeeper Anonymous Healthcare Organization", Nucleus Research 2003.

- Police – Telestaff works well for both scheduling and time cards
- Police – Multiple staff are reviewing and approving paper times cards
- Police PW – Could benefit from paperless time sheets, given that the majority of the maintenance division is out in the field all day
- PW – Need automated time cards

Recommendations

- Conduct a comprehensive process review, and develop feature/function requirements for all time keeping, attendance, and accrual tracking needs.
- Follow best practices according to the *Software Selection Best Practices* initiative.
- Consider utilizing a third-party SME for an assessment process and RFP process in conjunction with the *Enterprise Resource Planning (ERP) Replacement* initiative.

Benefits

- Consistent and standardized organization-wide timesheet system
- Reduced manual processes
- Increased processing volume
- Reduced data entry errors
- Reduced payroll processing time (from improved processes, policies, and practices)
- Single automated interface to ERP system

27. Performance-Evaluation Software

Findings and Observations

Performance-evaluation software automates staff reviews based on individual and departmental performance. This allows the ability to measure the skill sets of the workforce and plan expenditures accordingly with the internal resources available, build succession plans for continuity purposes, reduce numerous manually intensive reviews, and identify areas for improvement.

Human Resources' performance evaluation processes for non-management personnel is a manual process, using Microsoft Excel spreadsheets.

Staff Feedback

- HR – Need better performance-management tracking, metrics, and training/development plans
- HR – Performance-evaluation tracking is done in Excel

Recommendations

- Conduct a comprehensive process review, and develop feature/function requirements for all performance evaluation needs, including departmental online workflow (notifications, routing and approvals).
- The City should include the above described review and requirement development as part of the needs assessment and feature/function specifications identified in the *Human Resources System Improvement or Replacement* initiative.
- Follow best practices according to the *Software Selection Best Practices* initiative.

- Consider utilizing a third-party SME for an assessment process and RFP process in conjunction with the *Enterprise Resource Planning (ERP) Replacement* initiative.

Benefits

- Access to employee information
- Scheduling and maintenance of employee training
- Employee job feedback
- Staff incentives and rewards
- Facilitation of communication
- Recognition and rewards of good performance
- Consistent formula for establishing, tracking, and measuring performance for evaluation reviews

28. Applicant Processing

Most human resource departments are busy managing a constant stream of employment applications. Due to this volume of activity and the importance of a controlled process to acquire important human resources, there is a need to automate the hiring process from the moment an application arrives, all the way through the hiring and onboarding process.

Applicant tracking allows customization of online applications, so applicants provide all necessary information. When applicants apply, they can also attach resumes and transcripts that are immediately accessible by the HR Department. Thereafter, the software allows you to mass-activate/inactivate applicants, view or report individual or group applications, and construct personnel records once an applicant has been hired. Often, additional workflow capabilities are offered to include the departments needing candidates so that they can be engaged in the process. Online capabilities for applicants are also an integral part of the process within these application tracking systems.

Findings and Observations

- The City primarily uses a manual process for applicant tracking and notification.
- HR also uses CalOpps to post jobs and for some applicant tracking.

Staff Feedback

- HR – Applicant tracking processes are manual
- HR – Need better tracking of employee on-boarding using integration to HR and Payroll
- HR – CalOpps provide basic applicant tracking functionality

Recommendations

- Consider conducting a comprehensive process review and needs assessment, including departmental supervisors and managers to verify and identify the City's applicant processing needs.
- The City should include the above described review and requirement development as part of the needs assessment and feature/function specifications identified in the *Human Resources System Improvement or Replacement* initiative.
- Follow best practices according to the *Software Selection Best Practices* initiative.
- Consider utilizing a third-party SME for an assessment process and RFP process in conjunction with the *Enterprise Resource Planning (ERP) Replacement* initiative.

Benefits

- Automated process that tracks candidates and maintains the necessary documentation
- System that provides a smooth interface for candidates to apply and determine status
- Increased efficiencies through workflow and automation with the elimination of manual process and shadow systems
- Time savings and elimination of duplicate entry from integration with HR and Payroll systems

29. Training and Certification Management Software

Training and certification management software tracks training, certifications, skill sets, and more. It ensures that continual education and training is completed in a timely manner in order to ensure compliance with recertification requirements. These systems have the following features:

- Centralized employee training, qualifications, and license data
- Automatic notification for upcoming and overdue training
- Instantly viewable training metrics on dashboards and reports
- Aid in preparation for audits and in meeting compliance requirements
- Tracking of exam results

Findings and Observations

- There are some systems in use at the City (e.g., Police Department).
- Commonly, however, these requirements are being tracked by departments and Human Resources using Excel spreadsheets.

Staff Feedback

- Police – Use PBT Group TEAMS for online training and evaluation, audit, and management, including the field training program and daily observation reports
- Comm. Serv. – Using Excel to track staff trainings

Recommendations

- Stand-alone, third-party training and certification management and tracking software is available. However, these capabilities are also available in HRIS systems or in HRIS modules within an ERP system (See *Enterprise Resource Planning (ERP) Replacement* initiative).
- The City should include the above functionality as part of the needs assessment and feature/function specifications identified in the *Human Resources System Improvement or Replacement* initiative and/or in the *Enterprise Resource Planning (ERP) Replacement* initiative.

30. Staff Scheduling System

Findings and Observations

Various departments have identified a need for scheduling employees, such as Police, Library, and Community Services. The Police Department is currently operating with Telestaff software to meet their scheduling needs.

Staff Feedback

- Comm. Serv. – Would like a staff/volunteer scheduling software that includes text message notifications, sign ups, etc.
- Library – Are manually creating volunteer schedules
- Library – Using Volgistics to track volunteer hours
- Police – Telestaff works well for both scheduling and time cards
- Police – Using Telestaff for shift bidding, comp time, vacations, and shift swaps

Recommendations

- Survey departments to determine which have needs for a scheduling tool. Review applicable manual processes and shadow systems, such as spreadsheets, with each of these identified departments to determine scheduling automation improvements that will result in efficiencies.
- The above recommendation is supported by the example of the Library and Community Services, identifying a need and requesting scheduling software to assist in managing the schedule for their staff and for volunteers. The spreadsheet and calendars being used do not meet the Library's needs.
- The City should investigate and determine if expanding the Police Department licenses and use of Telestaff to include other departments will meet their needs, rather than acquiring and adding another scheduling solution with the same functionality.
- If Telestaff is not a viable option for other departments, investigate other Scheduling options that would include integration with the City's Time and Attendance Tracking solution (see *Time, Attendance, and Accruals Tracking* initiative).
- Follow *Software Selection Best Practices* methodology for any new software.

Benefits

- Better tracking and scheduling of required City staff and volunteer staff
- Reduced overlapping shifts
- Reduced overtime
- Elimination of paper forms
- Accurate personnel deployment
- Better management/supervisory reporting of staff hours, shifts, etc.
- Elimination of scheduling systems from several different vendors and benefits of potential integration with Time Keeping/Attendance

31. Project and Construction Management

Project and construction management software typically includes:

- Management and tracking of construction projects
- Documenting project and contract progress
- Initiates or notifies of milestone completions for contractor payments
- Communication and interfaces to central financial systems including grant and project accounting

Many of these government-based construction software systems are now offered in a service-oriented, cloud-based product. Many also offer field-based access and usage for inspections and tracking in the field.

Findings and Observations

- Project Managers are using different methods in managing their projects, some of which include manual processes, Microsoft Project, Excel and Access, as well as other planning systems, like BaseCamp and Trello.
- Tracking costs, schedules, scope, and task completion for projects is challenging with existing methods and the various systems being used.
- Project information is not readily accessible by multiple staff in real time.

Staff Feedback

- CMO – Need the ability to track project expenditures and available budgets in real-time
- CMO – Need project management software
- Comm. Serv. – Using Microsoft Project to track projects and project tasks
- HR – Using BaseCamp for project tracking
- PW – Using Excel to manage CIPs
- PW – Using MS Project
- PW – Using Tom's Planner project management software
- PW – Using Trello project management software

Recommendations

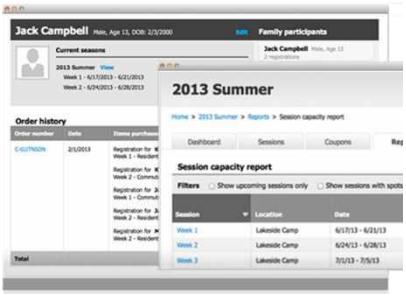
- Complete a review and needs assessment of City's project and construction management requirements and document the results. This should be a single system that all departments and divisions within the City can use in a cooperative fashion.
- Apply the results of the needs assessment to research options and solicit quotes for the project and construction management software solutions. Examples include:
  - PM Web
  - e-Builder
  - CapitalSoft
  - Aurigo
  - Primavera
  - Systemates
  - FieldManager
  - Projectmates
  - and others
- Follow best practices according to the *Software Selection Best Practices* initiative, to select the appropriate system.
- Ensure that integration between the new system and Project and Grant Accounting software in the ERP System.
- Consider utilizing a third-party SME or consulting firm for the needs assessment, process review, and feature/function development.

Benefits

- Shared project information
- Ease of project reporting
- Scheduling and resource management
- Increased efficiency in managing multiple projects
- Integration with Project and Grant Accounting within the citywide ERP system

32. Parks and Recreation Software Replacement (eGov)

Findings and Observations



The City currently uses the eGov software solution as their parks and recreation system. The City has been relatively satisfied with the system but feel they have outgrown its capabilities. eGov is not a full-featured park and recreation system and the Community Services feels it is time to replace eGov with a Park and Recreation system that could also assist with Day Care and Senior Center requirements. Additionally, there is a high degree of potential labor efficiencies to be gained through a comprehensive new system. Depending on the vendor, a Parks and Recreation enterprise solution may include:

- Activity Registration
- Facility Reservation
- Membership Management
- League Management
- Marketing
- Child Care Management
- Pass Management
- Senior Activity/events Management
- Point of Sale
- Equipment/Site Rentals
- Court Reservations
- Locker Rentals
- Trip Booking
- Incident Processing
- Personal Trainer Scheduling
- Golf Course Management
- Maintenance Inspections and Results
- Job/Task Maintenance Scheduling
- Planning, Budgeting, and Depreciation
- General Ledger
- Accounts Payable
- Purchase Orders
- Time Management/Scheduling
- Payroll Accounting
- Annual Registrations
- Program Management
- Facility and Hourly Care Reservations
- Coach and Provider Lending
- Touch-Tone Tee-Time Reservations
- Touch-Tone Area/Equipment Rentals
- Golf Membership Database
- Point-of-Sale Cash Register
- Food and Beverage Sales
- Tee-Time Reservations
- Tournament Management
- Donor Management
- Volunteer Management

Staff Feedback

- Comm. Serv. – Using Access to track waitlists
- Comm. Serv. – Use Team Sideline for sports league management and scheduling
- Comm. Serv. – Use eGov for class registrations, room rentals, finance reports, customer management, participant contact database management, and email marketing
- Comm. Serv. – Use Eventbrite for ticket sales and marketing
- Comm. Serv. – Would like to consider a customer mobile app for processing payments
- Comm. Serv. – Would like real-time text messaging capabilities (e.g., cancelled classes, emergencies, reminders, etc.)
- Comm. Serv. – Currently send notifications through eGov registration software

- Comm. Serv. – Would like to provide customers with e-Coupons
- Comm. Serv. – Need modern registration software
- Comm. Serv. – Would like staff/volunteer scheduling software that includes text message notifications, sign ups, etc.
- Comm. Serv. – Need ability for staff to access electronic participant medical info, parent contact, waivers, etc., on iPad or similar
- Comm. Serv. – Need online childcare enrollment capabilities
- Comm. Serv. – Need childcare immunizations and medications reporting
- Comm. Serv. – Looking for the possibility of procuring and new registration software suite within the next two years
- Comm. Serv. – Also looking into new membership software
- Comm. Serv. – Was a pilot customer for eGov
- Comm. Serv. – Have had eGov for eight years
- Comm. Serv. – Online payments are not automatically interfaced to eGov
- Comm. Serv. – eGov reporting is cumbersome
- Comm. Serv. – Prorations and refunds are manual
- Comm. Serv. – Taking student attendances in NoHo and eGov (double entry)
- Comm. Serv. – Considering monthly dues as opposed to drop-in membership
- Comm. Serv. – Would like vending machines and point of sale at facilities
- Finance – Have been discussing the replacement of the Activity registration and rental system (Community Services)

Recommendations

- Complete a review and a needs assessment of the City's fleet maintenance requirements and document the results.
- Apply the results of the needs assessment to research options and solicit quotes for child care management software solutions.
- Follow best practices according to the *Software Selection Best Practices* initiative, to select the appropriate system.
- Consider utilizing a third-party SME for an assessment process and RFP process.

  Note: Pricing and functionality vary by hundreds of percent.

- Keep in mind that a more expensive system with more automation can save significant manual labor, thereby potentially saving more than the system's entire cost over a few years. Proper evaluation and due diligence is necessary to determine total cost of ownership over a ten-year period and to maximize automation, cost accounting, online services, implementation success, and customer service improvements.

Benefits

- Improved customer service
- Improved software application utilization
- Improved reporting, resulting in better management decision making

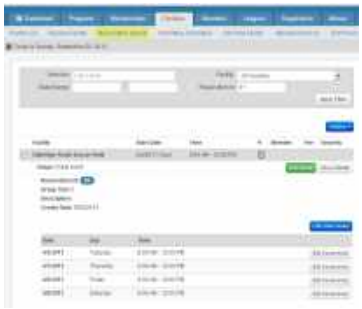
33. Citywide Facilities Scheduling/Events Calendar

Reservation software improves the process of making reservations for facilities and activities, while providing customers with exceptional service, and staff with fewer tasks to manually perform. The following are capabilities can be found in facility and activity reservation solutions:

- Scheduling
- Calendaring
- Resource and Equipment Management
- Citizen Relationship Management
- Event Management
- Online Reservations
- Online Waivers
- Online Payments
- Automated Alerts and Notifications

Findings and Observations

- The City does not have a centralized facilities/events calendar. This makes it difficult to have a common place to see events and avoid conflicts.
- The City also does not have a centralized method for scheduling facilities including conference rooms, physical equipment, and other resources that need to be scheduled in addition to or in connection with the facility.
- Some permit information also needs to be accessible to customers and field staff



Staff Feedback

- Comm. Dev. – Using Outlook for meeting reservations
- Comm. Serv. – Using Outlook to schedule conference rooms
- Library – Need an internal staff calendar for City department events, closures, maintenance, etc.

Recommendations

- Third-party facility scheduling and activity reservation systems are available. A number of parks and recreation systems offer facility scheduling to various degrees, with some being able to schedule equipment, as well as facilities (i.e., reserving computer, projector, screen, etc., for remote presentations). These systems often provide abilities to take reservation deposits and take or invoice payments, if needed.
- These systems also allow online reservations with credit card payments.
- Complete a review and a needs assessment of City's facility reservation and scheduling and activities requirements and document the results.
- Apply the results of the needs assessment to research options and solicit quotes. The City should consider using the Facilities/Events Scheduling module within the *Parks and Recreation Software Replacement (eGov)* initiative, and use the modules citywide.
- Follow best practices according to the *Software Selection Best Practices* initiative, to select the appropriate system.

Benefits

- Prevent conflicting and/or duplicate reservations
- Increase facility and equipment usage
- Faster processing of reservations
- Map out facilities for individual reservations
- Improved customer service
- Ease of reporting

34. Childcare Management System

Findings and Observations

There are a number of *childcare management systems* available. They meet the management and operational needs of a day care center, but they also assist with meeting state requirements and providing the necessary state reporting.

Community Services has stressed a need for these capabilities and have expressed the fact that eGov and other tools currently being used do not meet the existing or future needs. Community Services currently provides child care services at three centers.

It should be noted that several park and recreations systems include child care modules that do an effective job meeting many or all the the needs Community Services has expressed.

Staff Feedback

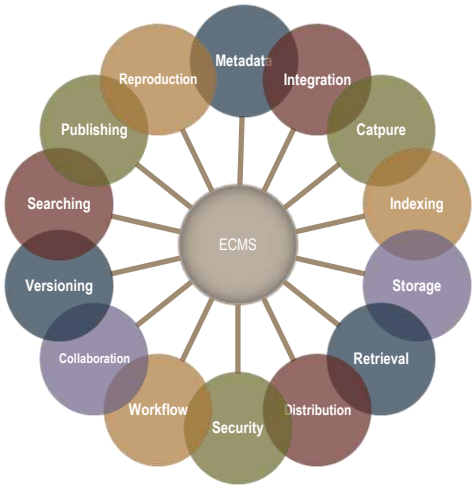
- Comm. Serv. – Need automated parent/child sign-in and -out
- Comm. Serv. – Need online childcare enrollment capabilities
- Comm. Serv. – Need childcare immunizations and medications reporting
- Comm. Serv. – Provide childcare services at three centers

Recommendations

- Complete a review and a needs assessment of the City's fleet maintenance requirements and document the results.
- Apply the results of the needs assessment to research options and solicit quotes for child care management software solutions.
- Follow best practices according to the *Software Selection Best Practices* initiative, to select the appropriate system.
- Because some park and recreation management solutions also incorporate child care modules, the City should consider combining these efforts (see *Parks and Recreation Software Replacement (eGov)* initiative).
- Consider utilizing a third-party SME for an assessment process and RFP process.

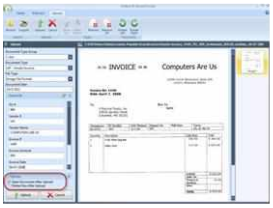
35. Electronic Content Management System (ECMS) Replacement

An *electronic content management system (ECMS)*, also referred to as an *electronic document management system (EDMS)*, can be utilized for much more than document scanning, document storage, and records retention management.



Additional uses include:

- Enterprise records management, including retention management
- Integrated document/process workflow management, including internal request management, and routing and distribution (accounts payable, accounts receivable, human resources, project tracking, etc.)
- Forms management
- Project/process collaboration
- Meeting minutes management
- Meeting agenda management
- Legislative management
- Media management, including synchronized meeting video streaming
- Web publication/posting for all above items, if desired
- Web access to ECMS, locally and remotely



Findings and Observations

- The City is currently using ApplicationXtender and shared drives to manage documents and other files or content.
- The City uses ApplicationXtrender as the centralized, citywide ECMS solution. However, due to the shortcomings of ApplicationXtender, many departments limit their use.

If the City were to consider a more modern ECMS solution with advanced functionality, additional benefits would be gained, including:

Compliance – Improved and more efficient ability to comply with increasing volume and complexity of regulations and retention requirements

Security – Improved physical abilities and accessibility security

Workflow Capabilities – Electronic capture, routing, and approvals of manual paper processes

Improved Efficiency – Increased productivity through automation of manual processes and time reduction in retrieving and sharing information

Reduced Costs – Reduced costs of printing, paper, storage space, and labor

Reduced Carbon Footprint – Minimized paper waste

Improved Transparency – Increased citizen access to information via the Web, including full automation of some documents immediately upon creation without additional processing or labor

Disaster Recovery – Protection of vital records through storage redundancy

Return-on-Investment (ROI) Considerations

- A study conducted by Coopers and Lybrand found the following:
  - The average document is copied 19 times in its life.
  - 90% of documents that are handled in an office are merely passed along or shuffled through.
  - Costs to manage a single document:
    - $20 to file a document
    - $120 to find a misplaced document
    - $220 to replace a lost document
  - 7.5% of all documents become lost.
    - An office that generates 200 documents a week will lose 15 of them, costing a total $3,300.
  - 3% of all documents are misfiled.
    - An office generating 200 documents a week will misfile six of them, costing the company $720.
- A feasibility study by the North Dakota Information Technology Department regarding ECMS technology found the following:
  - An organization that scans 600 documents per day can have the following benefits upon implementing an ECMS:
    - An ROI payback period of 15 months
    - Gained productivity of almost $114,375
    - Subsequent annual savings of $110,295
    - An overall three-year benefit impact of $531,990
    - Save $36,556 in annual costs when compared to manually storing and managing documents
- A study conducted by Prescient Digital Media found that an ECMS saves employees between 50-60% in time searching for documents.

Staff Feedback

- CMO – Clerk uploads agenda packets and meeting minutes to the website
- CMO – Granicus is the secondary online meeting agenda packet posting site
- CMO – ApplicationXtender is the organization-wide document management
- CMO – ApplicationXtender is used to scan and store resolutions and legal documents
- CMO – ApplicationXtender often contains multiple copies of the same document due to other departments scanning same documents
- CMO – City Manager's Office and Building/Planning also use ApplicationXtender
- Comm. Dev. – Using ApplicationXtender document manager for scanning of Building Division records, City Clerk files, and limited Planning Division records
- Comm. Dev. – Need improved document management
- Comm. Dev. – Need to digitize paper files
- Comm. Dev. – Digitizing of paper files should include labels/tags and OCR (optical character recognition) so that information is searchable
- Comm. Dev. – Digitized paper needs to link with parcel/permitting system(s)
- Comm. Dev. – Scanning is a somewhat cumbersome/manual process
- Comm. Dev. – Archiving/tagging of photos from cell phone cameras is inconsistent

- Comm. Dev. – City offices are being reconfigured for additional hiring, which may impact our current paper file cabinets
- Comm. Dev. – ApplicationXtender Document Manager is pretty universally regarded as bad
- Comm. Serv. – Using Adobe Acrobat for PDF forms
- Comm. Serv. – Using both Box and Dropbox for document storing and sharing
- Comm. Serv. – Currently storing videos on a network drive; drive capacity is determined and enforced by IT
- HR – Using Box for internal document management
- HR – Using Dropbox for external document management
- Library – Need to remove outdated documents from shared drives
- PW – Future document storage capabilities need to be considered

Recommendations

- Consider conducting a needs assessment and process review with all departments to gain an understanding of how the system should work and what configurations, training, etc., would improve staff's ability to utilize an ECMS system to its fullest, provide more transparency to citizens, and what other departmental applications integration would help improve the departments' business processes.
- Follow a software selection best practices approach to build an RFP, apply the needs assessment results, and identify a vendor that meets citywide needs.
- ECMS implementations on an organization-wide basis are commonly under-scoped and under-funded, leaving municipalities with limited benefits.
- ECMS implementations on a citywide basis are commonly spread over several fiscal years
- Review ECMS implementations in other local/regional municipalities that use it in a similar manner as intended by the City.
- Any solution considered should include integrated modules for agenda management, legislative management, and media management.

Benefits

- Automated workflow and routing
- Reduction in paperwork and related costs
- Online document retention and archiving
- Improved version and authorization control
- Improved public records access
- Increased information-sharing capabilities
- Ability to provide Web posting and public access to residents
- Integration with agenda management/legislative management/media management

36. Agenda Creation and Management Software

Automated agenda management systems provide access to information for all departments involved in the agenda process, and are sometimes offered as a stand-alone module or as part of an enterprise content management system (ECMS), (see *Electronic Content Management System (ECMS) Replacement* initiative). Staff members submit proposed agenda items online, and supporting documentation or packets can be attached, where they can be automatically routed for approval through pre-configured workflows. Approvers can receive email notifications with links to items awaiting review. The system administrator or other responsible parties add items to meetings, then prepare agendas, finalize packets, and publish them. Agenda content is available online throughout the process and is easily accessible to those with a role in the process.

In many instances, agenda management is also integrated with media management systems to stream and record video and audio information, time stamp it, and tie it to the correlating meeting agenda. Then, there is the ability to push/publish agendas, minutes, and media to the City's website.

Findings and Observations

- The City's agenda processes are currently semi-annual in nature; agendas, agenda packets and meeting minutes are uploaded to the City's website.
- There are no workflows for routing and revisions of packets during the preparations process, nor are there ticklers and notifications for due dates.
- There is a duplicate secondary posting on the Granicus site
- The City has considered and recognized the productivity, efficiency, and improved timelines that are possible with an automated agenda management solution.

Staff Feedback

- CMO – Clerk uploads agenda packets and meeting minutes to the website
- CMO – Granicus is the secondary online meeting agenda packet posting site
- CMO – Need to automate staff report creation and approvals
- CMO – Interested in Granicus' iLegislate for agenda packet accessibility from an iPad
- Comm. Serv. – Using Word to create staff reports
- PW – Need a better process for managing City Council report prep and reviews

Recommendations

- Conduct a comprehensive needs assessment, and process review, and document needs, including the development of detailed feature/function requirements for a new system.
- Apply the needs and feature/function requirements from the process review to solicit proposals and evaluate system options from various vendors.
- Follow best practices according to the *Software Selection Best Practices* initiative in order to select an appropriate system.

- It can be advantageous to coordinate the purchase and selection of an agenda management system with the selection of a new ECMS, because it includes the ability to ensure that the solution is integrated with the ECMS system. Many ECMS vendors have agenda management system partners that have built-in integration with their system and integration with media management (see *Electronic Content Management System (ECMS) Replacement* and *Granicus Media Management Assessment (Replacement)* initiatives).
- Consider utilizing a third-party SME or consulting firm for the needs assessment, process review, and feature/function development.

Benefits

- Time savings in manually disseminating and routing documents for review
- Paper costs savings by disseminating and routing electronically
- Easy archival and retrieval
- View agenda items and related materials in real time
- Provides public online access to agendas, minutes, and potentially audio/video

37. Legislative Management

Findings and Observations

Legislative management and reporting is the capability to manage legislative activities, including resolutions, ordinances, ordinance numbers, dates, and related actions, that are captured in real-time and retained to enable inquiry and reporting. In a manual environment, this legislative information, such as ordinances, is often entered numerous times. When automated, it only needs to be entered a single time.

Staff Feedback

- CMO – Need legislative management software for managing and tracking resolutions and ordinances

Recommendations

- Conduct a needs assessment and process review, and document needs.
- Apply the needs and feature/function requirements from the process review to solicit proposals and evaluate legislative management system options from various vendors.
- Follow best practices according to the *Software Selection Best Practices* initiative, to select the appropriate system.
- Ensure that the media management system selected can be integrated with the agenda creation and management system, as well as the citywide ECMS system (see *Electronic Content Management System (ECMS) Replacement* and *Agenda Creation and Management Software* initiatives).
- Consider utilizing a third-party SME or consulting firm for the needs assessment, process review, and feature/function development.

38. Granicus Media Management Assessment (Replacement)

Findings and Observations

Governments and quasi-governmental entities all have councils, boards, commissions, supervisory committees, etc. These board meetings require agendas, minutes, and recordings management. Recording technology has expanded to include the capturing of audio and video during these meetings. As a result of capturing these recordings, some open-access laws now require access to this media by the public. Media Management systems provide the ability to broadcast and manage media.

Media management systems:

- Give citizens and the public convenient access to live and archived streaming through the website
- Reduce public inquiries with searchable, self-service access online
- Import agendas and synchronize indexed video to eliminate hours of work
- Manage and distribute unlimited meetings and events (all completely automated)
- Reach a broader public audience
- Integrate closed captions with video
- Help the organization understand and measure public participation with video analytics

The City has expressed the need to perform live and post-meeting Web video streaming of Board meetings. The City has also expressed the need to manage historical meetings and offer the ability of the public to view/stream these past meetings online.

Staff Feedback

- CMO – Granicus is used primarily to provide Web streaming of City Council meetings
- CMO – Not using Granicus for agenda management, only voting and streaming capabilities

Recommendations

- Conduct a needs assessment and process review, and document needs, including the development of detailed feature/function requirements for a Council/Board meeting media management system.
- Apply the needs and feature/function requirements from the process review to solicit proposals and evaluate media management system options from various vendors.
- Follow best practices according to the *Software Selection Best Practices* initiative, to select the appropriate system.
- Ensure that the media management system selected can be integrated with agenda creation and management system, as well as the citywide ECMS system (see *Electronic Content Management System (ECMS) Replacement* and *Agenda Creation and Management Software* initiatives).
- Consider utilizing a third-party SME or consulting firm for the needs assessment, process review, and feature/function development.

Benefits

- **Reporting and Metrics** – Use system reporting and metrics to monitor the public engagement level, mobile usage, page visits, etc.
- **Event Management** – Schedule events to broadcast live or record from any video source (camera, cable TV, tape).
- **Archive and Publish** – Archived files automatically transfer to internal and external storage and can be automatically published to the organization's website.
- **Streaming** – Leverage a media server for public streaming.
- Integration with Agendas and Minutes – Import agendas and synchronize indexed videos during meetings and, afterward, produce a public record on the website with the agenda linked to the video.
- **Anywhere and Anytime Access** – The public and staff can watch live streaming broadcasts or play archived videos through the website. Viewers can jump to desired topics through index points to review only the information or agenda items that are important to them.
- **Public Searching** – Public can find what they want through a searchable public record on the website. All meeting audio, video, minutes, and agendas can be integrated together.
- **Notifications** – The public can subscribe to the agenda, or to a particular search, to receive notifications when new content is available.

39. Large-File Sharing Tool

Large-file sharing is often necessary when email systems or other sharing methods have size restrictions.

Findings and Observations

- The City is using a number of large-file sharing tools
- With various tools being used, there is a lack of consistency and limited management control
- Several departments expressed a desire for standardized use of a single, common tool across the organization.

Staff Feedback

- CMO – Using Box cloud storage for sharing of extremely large files (e.g., public records request, staff reports, presentations, etc.)
- Comm. Dev. – Box.com and Dropbox primarily for applicant/consultant interactions
- Comm. Serv. – Use both Box and Dropbox for document storing and sharing
- HR – Using Box for internal document management
- HR – Using Dropbox for external document management
- PW – IT grants and then removes file-transfer access
- PW – Using Box.com and Dropbox for online file transfer

Recommendations

- Migrate all City users to a single, secure large-file transfer solution
- SharePoint Online (part of Office 365) is a potential option
- Complete a review and needs assessment of the City's large-file sharing needs.
- Follow best practices according to the *Software Selection Best Practices* initiative, to select the appropriate solution.
- Ensure that this solution operates in a secure, supported environment, managed by the City's IT Division.

Benefits

- Use of a single, standardized system
- Improved support by City and IT Division
- Consistency and uniformity

40. Video Capture and Editing (Video Events and Other)

Findings and Observations

- The City uses several video-capturing systems and cameras.
- There is a desire to have a Citywide video capture and editing environment for consistency and the ability to store and save video for promotion, historical, and other purposes.

Staff Feedback

- CMO – Need video equipment which can be used from the field (e.g., recruitment videos, entertainment, events, etc.)
- Comm. Serv. – Need video editing software for special events
- Library – Use Adobe Premiere Elements 8 to edit video clips for Library events

Recommendations

- Migrate all City users to a single, video capturing and editing environment.
- Ensure that the video and editing environment is compatible with the results from the *Electronic Content Management System (ECMS) Replacement* initiative, the *Granicus Media Management Assessment (Replacement)* initiative, and the *Photo Management and Storage Software* initiative.
- SharePoint Online (part of Office 365) is a potential option.
- Complete a review and a needs assessment of City's video capturing and editing needs.
- Follow best practices according to the *Software Selection Best Practices* initiative, to select the appropriate solution.

Benefits

- Use of a single, standardized system
- Integration throughout the organization with ECMS, Agenda Management, Media Management, etc.
- Compatibility and consistency

41. Photo Management and Storage Software

Photo management and storage software (also referred to as *photo library management*) is a robust way to store, retrieve, and manage photos, not to be confused with personal photo storage tools such as Apple iCloud, Amazon, Dropbox, Flickr Google+, or OneDrive. The key words are "robust" and "enterprise". Photo management and storage software at a commercial level is analogous to an enterprise ECMS, as described herein.

Enterprise photo management systems, unlike document management solutions, are optimized and designed specifically for digital images and include all the capabilities required to management and operate a centralized and well-organized image collection.

Capabilities also include, but are not limited, to the following:

- Enterprise photo management, including retention management
- Centralized storage of photos, their associated data (indexes) and their organization within the database
- Security and user permissions with each group or department of users being restricted to assigned areas of the database, including the ability to control rights to perform specific operations/functions within those areas
- Web server plug-ins that provide secure, read-only access to assigned portions of the image collection over the Web or for integration with organization-wide or specific departmental software applications
- Ability to interact with various photo capture systems, including timed-based field cameras
- Ability to review, manage, analyze groups of photos, and save composite collections
- Secured database management to prevent photo loss and the ability to find a specific or group of images from a large collection
- Ability to catalog and store data on any number of specimens, species, etc.
- Full database-oriented reporting capabilities, enabling search access to the organization's entire photo collection/library

Findings and Observations

- The City is storing a very large number of photos from various departments and operations, including automated field based cameras, field work photos, maintenance management photos, historical and personal-interest photos, promotional photos, etc.
- There is no enterprise or citywide storage of photos, with many stored at the project, functional, division, or department levels.
- The City needs the ability to have an enterprise system that would provide consistency, ability to share and collaborate, and better integration of these photos into operations or operation software applications.
- No formal City processes or polices for the management, back-up, and potential recovery of these photos has yet been developed and documented.

Staff Feedback

- Comm. Serv. – Use SmugMug for photo storage and sharing
- Comm. Serv. – Adobe Photoshop for image management

Recommendations

- Complete a review and a needs assessment of City's photo management requirements and document the results.
- Apply the results of the needs assessment to research options and solicit quotes for photo management system solutions.
- Follow best practices according to the *Software Selection Best Practices* initiative, to select the appropriate system.
- Consider utilizing a third-party SME or consulting firm for the needs assessment, process review, and feature/function development.

42. Publishing Software Consolidation

Findings and Observations

The City uses a myriad of different tools to meet their desktop publishing needs. The following table lists the software being used by each department to create published materials and make content changes:

Application	CD	CMO	Comm. Serv.	Finance	HR	Library	Police	PW
Adobe Acrobat Reader	Various Departments							
Adobe Acrobat XI Pro					x			
Adobe Creative Suite/Cloud	x							
Adobe Illustrator			x					
Adobe InDesign			x					
Adobe Photoshop			x			x		
Adobe Premier			x					
MS Publisher			x		x	x		

Having such a broad number of different publishing tools within the organization presents challenges in consistency, training and knowledge, compatibility, sharing, and collaboration. A single publishing tool can minimize these challenges and turn them into benefits.

Staff Feedback

- Comm. Serv. – Using MS publisher for flyers, newsletters, calendars, and menus
- Comm. Serv. – Using Adobe InDesign to create activity guides, flyers, marketing materials, branding marketing
- Comm. Serv. – Position dedicated for activity brochure creation is currently vacant
- HR – Using MS Publisher for marking documents
- Library – Using publisher to create brochures/pamphlets

Recommendations

- Consider consolidating to a comprehensive all-in-one citywide solution to replace the functionality included in the software solutions now in use and listed in the table above. Doing so, may provide cost benefits and the ability to share training and knowledge. Examples include Ubuntu Studio, Adobe Creative Cloud, Corel, and others.
- Consider a review and assessment of the publishing software needs across the organization for all individual users' needs to determine the best solution that will meet the goal of a single solution for the entire City.
- Apply the results of the needs assessment to research options and solicit quotes for publishing solutions.
- Follow best practices according to the *Software Selection Best Practices* initiative, to select the appropriate system.

Benefits

- More consistency in application utilization
- Improved institutional knowledge by sharing training and internal application support
- Increased compatibility, sharing, and collaboration

43. Real-Time Utility Usage (Automatic Meter Reading-AMR)

Findings and Observations

Not to be confused with a complete utility billing system, *online, real-time utility usage access* is the ability to capture utility usage through the meter environment at frequent intervals, or in real-time, and having data available on billing documentation and online for residential and commercial users.

Staff Feedback

- PW – City owns the meters and handhelds, but Fathom performs the meter reads
- PW – Contract with Fathom for utility meter reading and billing
- PW – Could use automated meter-reading software
- PW – Residents need access to their own water usage in real time

Recommendations

- Implement an automatic meter reading (AMR) system that can be read in real time continuously or on a frequent cycle (e.g., hourly)
- Complete a review and a needs assessment of City's meter reading requirements.
- Consider the integration needs between a new AMR and the utility billing system.
- Ensure that there will be public-user Web access so that customers can monitor up-to-date usage.
- Follow best practices according to the *Software Selection Best Practices* initiative, to select the appropriate system.
- Consider utilizing a third-party SME or consulting firm for the needs assessment and feature/function development.

Benefits

- Elimination of manual meter reading
- Access for the public to monitor usage in near real-time
- Increased conservation

44. Website Improvements

Findings and Observations

Municipal websites have become informational portals so that citizens can quickly access information and conduct transactions without having to call City staff or go to City Hall. Additionally, interactive functionality is available 24/7.

- The City's website is developed and hosted by CivicPlus, a website development company that focuses on city and county governments.

Return-on-Investment (ROI) Consideration

A study conducted by Aaron Marcus and Associates, Inc. discovered the following[6]:

- More than 83% of Internet users are likely to leave a Web site if they feel they have to make too many clicks to find what they are looking for.
- Once a system is in development, correcting a problem costs ten times as much as fixing the same problem in design.
- The average user interface has as many as 40 flaws. Correcting the easiest 20 of these yields an average improvement in usability of 50%.

Staff Feedback

- CMO – Using Civic Plus to manage the website
- CMO – Certain items on the website are not easily visible (e.g., agenda packets, links, etc.)
- CMO – Would like for the public to complete satisfaction surveys
- CMO – Are considering CivicPlus for potential survey capabilities
- Library – Need to correct broken links on the website
- Library – Need Web statistics for yearly report to CA State Library and to make decisions about content on Library site

Recommendations

- In coordination with the *Website Improvements* initiative, develop a citywide needs assessment of CMS update and administration issues.
- Identify user training requirements.
- Work with the vendor to address issues with CMS updates and identify additional training needs.
- Manage improvements according to the *Project Planning and Implementation Best Practices* initiative.
- Offer regular training to keep staff skills fresh and to ensure they have the ability to keep website content current.

Benefits

- Reduced resident in-person visits
- Improved public records access
- Increased information-sharing capabilities
- 24/7 availability
- Improved resident-user experiences
- Increased resident interaction and transaction capabilities

[6] Aaron Marcus and Associates, 2004

45. Notifications System (Push/Social Media/Text)

Findings and Observations

Outbound communication systems, such as Reverse 911, have gone through a significant transformation in the last five years. There are many more system providers, and pricing has come down significantly. Enhanced emergency notification systems can also integrate with severe weather warning systems, emails, texts, RSS feeds, etc. These systems can be used for non-emergency mass notifications as well. Examples include: street closures, interruptions in water service, major organization events, etc. Additionally, an increasing number of school districts are using this technology for frequent mass communications to parents.

Staff Feedback

- Comm. Serv. – Would like real-time text messaging capabilities (e.g., cancelled classes, emergencies, reminders, etc.)
- Comm. Serv. – Currently send notifications through eGov registration software
- Library – Need an automated system for importing/sending patrons “email blasts”
- Library – Would like to use “email blasts” to subscribers for special information/events
- Library – Could use Hootsuite to manage all social media accounts
- Police – We utilize Nixle, which also alerts Twitter and Facebook
- Police – Nixle is user-friendly
- Police – We also use Blackboard and Nextdoor for mass, outbound communications
- Police – Would like the capability to combine all of these resources so that we only have to log onto one program, send the message, and be done

Recommendations

- Research options and for a single tool to manage the notification needs and desires of the entire organizations.
- Select new software or tool vendor according to the *Software Selection Best Practices* initiative.
- Consider including emails, texts, and RSS feeds for more than just mass emergency notifications (e.g., street closures, street cleaning, special events, etc.)
- Consider utilizing various applications and utility bills to collect citizens' communication preferences (e.g., mail, email, text, website, opt in or out for specific types of communications, such as public safety, emergency, community events, general info, etc.)
- Determine costs of greater usage. Costs are usually measured per contact, but some vendors have gone to an annual-subscription model based on agency population.
- Consider integration with Severe Weather Warning System, automating certain emergency notifications.

Benefits

- Increased community outreach
- Improved public relations
- Increased citizen engagement
- Easier management with time savings if a single notification tool can be identified and implemented

46. Develop GIS Master Plan

Geographic information systems (GIS) are becoming a critical citywide component to any municipality. They provide a geographical map or picture to constituents and city staff to interact with City services or for City staff to deliver service. GIS is a system that manages and displays digital maps with various features and functionalities. GIS stores the shape of individual map features (a street segment or a parcel of land) along with descriptive information (often called feature "attributes"). In a GIS map of streets, the shape of each segment is stored along with the street name. The segment can be located, queried, or labeled using that name. A parcel of land will be linked to one or more tax records which can identify the owner, valuation, use, or many other attributes. Layers of information can also be stored and selectively displayed, including utilities and other services (water, sewer, gas, electric, telephony, data, etc.)

The development of a Geographic Information System (GIS) Master Plan is a detailed and comprehensive process. Geography and GIS services play a role in nearly every decision the City makes. Choosing sites, assets maintenance, planning distribution networks, responding to emergencies, or redrawing boundaries—all of these issues involve questions of geography. A GIS Master Plan would set forth procedures and methods used to determine where the City envisions going with GIS in the future, which will include, but not be limited to:

- Improvements to the GIS enterprise
- Evaluating potential data sources and data needs
- Evaluating hardware and software solutions
- Updating the GIS database
- Developing additional GIS applications
- Staffing requirements
- Prioritized resource requirements
- Planning for the long-term maintenance of the GIS system and the data
- Development of a GIS-specific budget tied to the various elements or initiatives within the GIS Master Plan

Findings and Observations

Due to the extensive demands the various departments are requiring from the GIS Division, there needs to be a more comprehensive study for the City's GIS needs. There is a tremendous role for GIS within the organization, and a detailed study is needed to address and plan for future growth.

Staff Feedback

- CMO – Need general GIS accessibility for an economic development perspective
- Comm. Dev. – Ability to automate exports to Open Data Portal
- Comm. Dev. – City already has a GIS consultant (Lynx Technologies), who is responsive and helpful; most needs can be met with their assistance
- Comm. Dev. – Need to upgrade internal GIS site from Silverlight to HTML5
- Comm. Dev. – Have a public GIS site that allows users to access parcel information (i.e. zoning City, size, flood zone, etc.)
- Comm. Dev. – Have an Open Data Portal that allows advanced users to access building permit records and GIS files
- Comm. Serv. – Would like to use GIS to track customer locations
- Comm. Serv. – Would like to see a visual depiction of residents and non-residents with boundaries

- Police – We are pretty satisfied with our GIS data
- Police – Need new GIS capabilities for Police MDTs
- Police – Esri works great for dispatchers, but not for mobiles
- PW – Current GIS environment is based on Silverlight, which is being phased out
- PW – GIS data infrastructure needs to be considered
- PW – Have a GIS management consultant (Lynx's Technologies) located in Capitola
- PW – Have ArcGIS SDE version 10.3
- PW – HTML5 will help us pave the way to upgrading the public-facing Web GIS
- PW – Interested in collaborating with other agencies for regional GIS data
- PW – Need a traffic sign and signal inventory
- PW – Need to transition to a HTML5-based environment
- PW – Need upgraded aerial imagery
- PW – Sidewalks, trees, and streetlights are in GIS
- PW – This is the first municipal job where there isn't a GIS team or dedicated person
- PW – Water System is not in GIS

Recommendations

- Develop a comprehensive GIS Master Plan utilizing independent subject-matter expertise.
- The Master Plan should include but not be limited to:
  - Improvements to the GIS Enterprise
  - Evaluating potential data sources and data needs
  - Evaluating hardware and software solutions
  - Establish the database and cartographic standards of the City
  - Updating the GIS database
  - Developing additional GIS applications
  - Staffing requirements
  - Training requirements
  - Benefits to the public using GIS as the entry point to online services
  - Prioritized resource requirements
  - Planning for the long-term maintenance of the GIS system and the data
  - Development of a GIS-specific budget tied to the various elements or initiatives within the GIS Master Plan

47. Department-Centric / GIS Self-Service

Web mapping applications allow for interactive viewing and sharing critical geospatial information within the City and also to present to the public over the Internet. Web applications are easy to use and can be accessed by staff or constituents via Web browser, without the requirement for specialized GIS software to be installed on the user's device. Additionally, these types of apps take less time for staff training. GIS Web applications can also allow end-users to pan, zoom, search, and interact with the most current data. Web applications make it easier to create, update, and maintain departmental data.

This approach can also allow some staff within departments to maintain their own data with support from the GIS Division using Web mapping concepts.

Findings and Observations

The City currently does not deploy any department-centric GIS applications for end-user self-service. This has resulted in a backlog of departmental needs.

It should be noted that not all requests can be served by Web applications, but including Web applications in the information delivery model will serve the City well and will help alleviate the backload of needs expressed by departments. This will allow various departments to expediently access more robust spatial data to assist with their everyday decision making.

Staff Feedback

- Comm. Dev. – Ability to easily create location map/land use map/etc. using Web GIS system
- Library – Could use a map of Library patrons by address
- Library – Could use a map of cardholders within the City of Menlo Park
- Library – Could use a map of registered event attendees visiting from within the Bay Area
- PW – Need to work on our internal mapping application

Recommendations

- The City should build departmental central Web applications, using the ArcGIS Server configuration that is determined from the outcome of the *Develop GIS Master Plan* initiative and through the introduction of ArcGIS Online.
- Provide adequate training for staff on these tools and applications.
- Hire an outside consultant to build these applications for the department, in order to free GIS staff to focus on other critical GIS tasks.
- Assess common GIS data needs of most third-party consultants and develop a self-service system for project managers to deliver spatial data to and obtain spatial data from consultants.
- Central Web mapping applications should have the ability to create customized maps that meet the database and cartographic standards of the City.
- Investigate third-party, off-the-shelf (OTS) software solutions to streamline the creation of Web maps.

48. RIMS (CAD/RMS) Gap Analysis and Application Maximization

Integrated *computer-aided dispatch (CAD)* and *records management systems* (RMS) enable public safety and law enforcement to centralize public safety incident information, preserve data integrity, and enhance operational efficiency. Personnel within the department use this integrated environment to quickly capture, record, update, share, and access critical incident and public safety data.

Common functionality of CAD/RMS systems include:

- Computer-Aided Dispatch
- Records Management
- Mobile Data Computing
- Field Reporting
- Property/Evidence with Bar Coding
- Personnel/Training
- Crime Analysis
- Investigations
- Intelligence/Suspect Tracking
- Mapping

Findings and Observations

- The City was one of the early adopters of the Sun Ridge System, called RIMS.
- The City has been pleased with the RIMS system, but is concerned that they may not be using all the available capabilities, maximizing their usage of and return on investment with the system.

Staff Feedback

- Police – Need RIMS accessibility on department-issued cellular phones
- Police – Using RIMS CAD/RMS

Recommendations

- Work with Sun Ridge to review the City's usage of RIMS and develop a gap analysis report identifying the functionality in RIMS and the City's current adoption of that functionality.
- After completing the gap analysis report, work with Sun Ridge on a plan to close the identified gaps. The plan should include a listing of all gaps to be closed, a summary of the process required to close each gap, identification of any costs, and finally a timeline for the entire gap closure project.

Benefits

- Full access and use of CAD and RMS system, along with access to the full functionality and capabilities of those systems
- Improved application and use of technologies, with elimination of manual processing and redundant data entry
- Elimination of a majority of the paper reports and forms
- Better management of resources
- Better reporting and information for management and decision making
- Improved integration between all technologies
- Improved tools for dispatch and for officers in the field
- Improved public safety

49. Alarm Tracking and Billing Software

Alarm tracking and billing software is designed for police departments, fire departments, and other government organizations that have a need to monitor and record alarms and assess fees for multiple occurrences of false alarm runs. These systems are designed to work with police dispatch, RMS/CAD/911 systems, and typically have an export capability for uploading to the municipality's central financial system.

Benefits

- Allows registration of alarm systems
- Imports false alarm data from Computer-Aided Dispatch (CAD) systems
- Prints warning letters and invoices
- Exports to municipal financial systems are possible to streamline invoice and collection processes
- Allows alarm owners to register and pay online with credit cards

Findings and Observations

- The City currently uses the alarm billing capability within the existing Sun Ridge RIMS RMS/CAD system.
- The City believes that RIMS has a module to allow for online payment and account access.
- The City would like to expand the alarm billing system to allow for online access and payment.

Return-on-Investment Considerations

- A study conducted by Fidesic Corporation found that by using electronic invoicing and payment, organizations can cut the labor required to send an invoice and process a payment by almost 50%[7].
- Sizable annual revenues from alarm and false alarm billing have been recognized by other municipalities in the City's regional area.

Staff Feedback

- Police – Would be great to allow customers to both view and pay for their alarm permits online
- Police – Alarm billing is somewhat automated in RIMS, however, there is a module that would allow online payments and account access

Recommendations

- Investigate availability of an RIMS-based online alarm billing payment module.
- Estimate approximate savings from payment timeline reduction, manual processing, paper savings, and reduction in phone call inquiries.
- Implement the online payment module as recommended by Sun Ridge.
- Follow applications implementation best practices.

[7] Fidesic Corporation study, 2002

50. Ticket Writer Software Replacement (Duncan to TDS)

Findings and Observations

Many cities struggle with parking management in heavy traffic areas such as downtown, event locations, and other complexes. A network-enabled *parking management system* (parking permits) provides centralized monitoring and control. A wireless parking meter solution can alleviate parking-related issues by increasing operational efficiencies, improving traffic flow, and increasing revenue capture for the City.

A number of these ticketing systems also have the capability to ticket or cite for other violations including moving violations.

The City is currently in the process of migrating to a new system called TDS TICKETPRO and away from the older ticketing system from Duncan Solutions. The new system also allows for a true adjudication process, including payment and also a vehicle for appeals.

Staff Feedback

- Police – Use Excel to record permits (i.e., parking) and releases, and then enter into Duncan Solutions
- Police – Need online automated parking permitting system
- Police – The citation issuing software for Patrol is an outdated system
- Police – There are other programs (TICKETPRO) that download “live time” and are easier to use and more functional
- Police – Parking is currently working with a new software for parking ticket citations (TDS' TICKETPRO)
- Police – The current handhelds are not downloaded on a regular basis by officers, and with the new system, we will not have the issue of missing citations
- Police – Using Turbo Data System's Ticket Pro for online parking citations
- Police – Using Turbo Data System's (TDS) Appeals module for online parking citation appeals
- Police – Were using Duncan Solutions' Autocite and Autoissue for moving violation tickets, now replaced by TDS TICKETPRO
- Police – Need new ticket-writing hardware

Recommendations

- Continue the migration process to the new TDS system.
- Follow the methodology outlined in the *Project Planning and Implementation Best Practices* initiative.
- Following the conclusion of the implementation use the methodology outlined in the *Applications Management Best Practices* initiative.

Benefits

Key benefits of automated parking meters include:

- Flexibility to impose different parking fees at different times of day
- Remote monitoring on the functional status of parking meters, decreasing down-time and minimizing revenue loss

- Improved efficiencies and revenue capture from real-time information accessible to parking enforcement personnel on expired meters
- Convenient payment options: cash, credit cards, debit cards, cell phones, payment over the Internet, and prepaid parking cards

51. Officer Radio Transmission Identification

Findings and Observations

Officer radio transmission identification functionality allows tracking in the radio and CAD system that provides automatic identification of officers with radio transmissions. This is done using the officer's unique identifying code in his personal radio.

Staff Feedback

- Police – Atherton PD has the ability to see which officer last transmitted on the radio
- Police – It is a great officer safety tool and could allow us to welfare check an officer that didn't answer his radio
- Police – From what I understand, it's a software program or application that they log into at the beginning of their shift and then it keeps a log of every transmission

Recommendations

- The City should investigate the ability to apply this technology to their existing radio and CAD system. The Atherton Police Department could provide information that would be helpful in researching this option.
- Follow best practices according to the *Software Selection Best Practices* initiative, to determine costs from vendors and select the appropriate system and system options.

Benefits

- Officer security/status
- Ability to well-check an officer

52. Replace MDC's with RIMS Mobile/GIS System

Findings and Observations

The existing mobile data terminal/mobile digital computer (MDT/MDC) environment is aging. The MDT/MDC has become critical to an officer's ability to be safe and productive in the field. These systems should be kept current and replaced prior to end-of-life.

Staff Feedback

- Police – Current MDT/MDC system is at past its age
- Police – The RIMS RMS/CAD system has a new MDC GIS system that the PD should move to

Recommendations

- The City should investigate the ability to move to the RIMS new MDC GIS mobile system
- Follow best practices according to the *Software Selection Best Practices* initiative, to determine costs from RIMS and clearly understand the implementation needs.

Benefits

- GIS/Graphical capabilities in the vehicle
- Efficiency in access to law enforcement information

53. Tow Company Billing System

Staff Feedback

- Police – Should automate monthly tow billings
- Police – Would be great to allow tow companies to make online payments or over-the-phone payments
- Police – Currently, tow companies pay by check or in-person via credit card payments
- Police – Delinquent tow billing invoices are difficult to track
- Police – Have a total of twelve towing companies, each one with a three-year contract

Recommendations

- The City should investigate Tow billing software options
- Consulting with other Police Departments in the region to determine what systems they use and learn their pros and cons would also be helpful.
- Follow best practices according to the *Software Selection Best Practices* initiative, to determine costs from vendors and select the appropriate system and system options.

Benefits

- Efficiencies in reducing manual processes
- Ability to allow online payments and payments with credit and debit cards
- Reduction in call inquiries
- Better able to manage the relationships with the towing companies.

54. FirstNet Preparation Planning

Findings and Observations

This is a project that is currently in process. *FirstNet* is the short name for "First Responder Network Authority". Even though it is a project in process, it is important to stay current. This initiative establishes guidelines to track FirstNet progress and ensure the City is ready for implementation.

Staff Feedback

- Police – On February 22, 2012, the "Middle Class Tax Relief and Job Creation Act" created FirstNet, which gives FirstNet the duty to build, operate, and maintain the first high-speed, nationwide wireless broadband network dedicated to public safety entities
- Police – FirstNet will provide a single interoperable platform for public safety communications
- Police – Public safety personnel using the FirstNet network will be able to share applications, access databases, and provide better-informed responses to incidents through integrated communications
- Police – The costs for FirstNet services and devices hasn't been determined, but it will be a factor for each city to consider

Recommendations

- This initiative should be kept on the IT Division's projects list, even though it is currently in process.
- The Police Department and a resource from the IT Division should work together to track this and document timelines, required technology, impact on the City's network infrastructure, and resources that may be needed for implementation when the time comes to proceed.
- The City's IT Steering Committee should be kept up-to-date on progress with this program at least every 6 months, and also when events warrant an update to the committee.

Other Initiatives

Initiative	Staff Feedback	Recommendation
55. Police Audiovisual Format Conversion Tool	• Police – Need the ability to convert audiovisual data received from third-party surveillance systems to a common format • Police – Use Honestech to convert audio cassettes to digital files	• There are a number of conversion tools available. • A small needs assessment document should be prepared to document needs, who will use the tool and where this video conversion environment will be setup. • Quotes should be obtained using *Software Selection Best Practices* initiative. Quote requests should include the hardware and software specifications the vendor requires to operate the tool in an efficient manner.
56. Panic Button	• Comm. Serv. – Could use a panic button for all facilities	• This capability is available. • If the City would like to proceed it would be best to incorporate this into the process identified in the *Secure Managed Access* initiative.
57. Penal Code/Vehicle Code Reference Software	• Police – Would be great if there was a digital penal code/vehicle code software on computer desktops and MDTs	• This software is readily available. • The Police Department should verify if the new RIMS MDC GIS System as described in the *Replace MDC's with RIMS Mobile/GIS System* initiative includes code reference software.

Initiative	Staff Feedback	Recommendation
58. Portable Wireless Camera for Surveillance	• Police – Are only using body cameras (no squad cams) • Police – Could use portable wireless camera for surveillance (e.g., investigations)	• This would be similar to a fixed camera, but would be configured in a portable fashion so it can be taken to nearly any location. This should be compatible with the *Video Camera and Surveillance System (Citywide Standard)* initiative.
59. Wireless PA Radio PA/Sound System	• Comm. Serv. – Could use a high-quality wireless radio system for events	• This is an option for a radio PA system at events. This would allow the broadcast of speakers, music etc. to the event attendees. • The specific needs for this system should be discussed so that a viable configuration can be determined • This should be configured in a portable fashion so it is mobile enough to take to different City venues and setup quickly.
60. Instant Messaging	• Comm. Serv. – Instant messaging between employees/computers would be nice • Comm. Serv. – Instant messaging and text messaging with our customers would be beneficial • HR – Using Skype for instant messaging	• There are numerous options available for this. • Options for instant messaging can be configured with Exchange Server/Outlook. • Skype for Business is also available with instant messaging capabilities under Office 365. • Cost and options should be investigated and a standard chosen and installed.
61. PA Announcements	• Library – Need automatic PA announcements inside of library when near closing	• Various options exist for this capability. • Phone system PA functionality is also an option.
62. Parking Sensors and Management	• Comm. Serv. – Parking space sensors and electronic signage would help to reduce traffic congestion and citizen frustration	• This is a variation of traffic control and traffic communications systems. • If the City has a traffic management system, they should investigate if that system can accommodate parking sensors to communicate parking availability etc.

Initiative	Staff Feedback	Recommendation
63. Constituent Satisfaction Surveys	• CMO – Would like for the public to complete satisfaction surveys • CMO – Are considering Civic Plus for potential survey capabilities • Comm. Dev. – Would be helpful to have a program to solicit feedback from groups that don't typically come to Commission/Council meetings • Comm. Serv. – Using Survey Monkey class evaluations and needs assessments • Comm. Serv. – Would like the option for the public to complete on-site surveys with iPads	• Some Customer Relationship Management systems have this capability. • The City should also investigate if their citizen request management system would have this capability. • The key to results for this is a very affective survey gathering and reporting capability to capture the necessary date and perform the necessary analysis.
64. Laptop Borrowing Program	• Library – Need a system to manage borrowing of laptops by the public	• Laptop configurations should be assembled with a laptop bag. • These laptop configurations should be compatible with the environment described in the *Conference Room Audiovisual* initiative.
65. Library Subscription Provider Statistics	• Library – We receive usage statistics from several of our subscription database providers, and having software to compile these uses would help us make subscription and promotional decisions	• There are a number of analytics programs available. • The Library should identify their needs and investigate tools that could meet these needs. • Quotes should be received and the City should determine if similar needs exist in other departments, so others may share in license costs.
66. HVAC Zonal Climate Control System	• Library – Library staff needs control of HVAC temperature; regular hours for public works employees often does not overlap with Library open hours	• Research vendors and request a cost-benefit analysis. • Follow best practices according to the *Software Selection Best Practices* initiative, to select the appropriate system.

Gov 2.0

Gov 2.0 (E-government) is the concept of using new technologies in combination with creativity, information sharing, and the collaborative process to better serve and interact with the public.

67. Citizen Request Management (CRM)
68. Online Payments, Transactions, and Services
69. Video/Web Conferencing
70. Council Chambers Audiovisual Systems
71. Conference Room Audiovisual
72. Social Media Policy and Procedures
73. Mobile Computing
74. Newsletter
75. Dual Monitors

With the advent of computer technologies, the world is experiencing an unprecedented explosion in communications options.

The principles of Gov 2.0 include:

Principle: Serve as the primary source of reliable, accurate, and timely organization information delivered to the customer on their 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.

Some examples of Gov 2.0 technologies include:

- **Online Transactions** – Applications, registrations, requests, and payment processing are some of the 24/7 examples being employed.
- **Online Information Requests and Queries** – As more transparency is demanded and Freedom of Information Act (FOIA) requests increase, common types of documents are readily available through query or menu on the website, which creates efficiencies for organization staff and constituents.
- **CRM (Citizen Request Management)** – Online citizen request tracking includes automated internal routing, status reporting, etc.
- **311** – *311* is a service available in some communities around the country as a non-emergency, general information phone number to a citizen service center. These centers typically centralize the inquiry and response of general and/or routine questions from citizens and customers.
- **Blogging** – This is a Web-based process (Web logging) that allows regular posting of commentary, news, events, and other materials in a more casual and interactive manner. Visitors may leave comments or communicate with each other through the blog.
- **Podcasting** – Digital media files utilizing audio, Web protocols, and a media player are released on a regular schedule and often downloaded through a Web-based subscription.
- **RSS** – *Really Simple Syndication (RSS)* is a group of formats used to publish works such as blog entries, news headlines, and media files, in a standardized format. This allows publishers to automatically "feed" their entries to a syndicated audience, often used with podcasting.
- **Social Media** – Ranging from blogs (WordPress, LiveJournal, Tumblr) and social and/or professional networking (Facebook, Twitter, LinkedIn, MySpace) to virtual worlds where people can interact in real time (Second Life), social media is, by far, the fastest-growing form of interactive communication. Andreas Kaplan and Michael Haenlein define social media as "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content."[8]
- **Wikis** – A *wiki* is a website that allows collaborative creation and editing of Web pages to produce a simplified exchange of information.

[8] Kaplan, Andreas M., Michael Haenlein (2010). "Users of the World, Unite! The Challenges and Opportunities of Social Media". Business Horizons 53 (1): 59-68. doi:10.1016/j.bushor.2009.09.003. ISSN 0007-6813. Retrieved 2010-09-15.

The possible benefits of developing such communication methods go beyond 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 involved public
- More collaborative efforts between the organization and the public
- Faster and more convenient access, which promotes public approval

67. Citizen Request Management (CRM)

Findings and Observations

Citizen request management solutions are used to receive, track, and manage all types of requests and complaints. These solutions can categorize requests, prompt for typical information required, assign and route information to specific staff or departments, track the status, and fulfill overall reporting requirements for more effective handling and response. The primary objective is to ensure all inquiries, requests, and complaints are captured when received, routed to the proper resource, and responded to or resolved in a timely manner, ensuring that the loop is closed on each and every contact. An ideal CRM functionality includes:

- Citizen responsiveness (requests captured and completed, responses provided to citizens, including when and how resolved)
- Prompt request routing (departments/persons)
- History (complaints, requests, timeliness of responses, who completed, how resolved, cost analysis)
- Interdepartmental resource linking
- Managing resources
- Benchmarking and performance-based measurements
- Planning and budgeting
- GIS integration
- Online customer surveys

The City currently uses CCIN, Comcate, GovQA and Direct Connect. The desire by nearly all departments is to move forward with a single CRM system that can deliver all the same functionality that is being performed by the four applications described.

Staff Feedback

- CMO – GovQA is a portal used by public to submit a public records request
- CMO – GovQA provides some automated workflows and allows for management of requests to ensure compliance with legal requirements
- CMO – C-C-I-N is an in-house developed system for the public to send messages addressed to the City Council
- CMO – Using Direct Connect to capture public complaints, which are then routed to staff email addresses
- CMO – C-C-I-N is not helpful and needs to be replaced
- Comm. Serv. – Using Comcate for customer-response management

Recommendations

- Select new software vendor according to the *Software Selection Best Practices* initiative.
- Consider CRM modules from future back-end operational systems, such as Work Orders/Maintenance Management, Land Management, or the existing CivicPlus system, before considering other third-party vendors that require integration with other operational systems within the City.

Benefits

- Increased customer satisfaction
- Centrally managed information
- Less time manually managing and monitoring
- Increased use of features
- Improved access to information

68. Online Payments, Transactions, and Services

A variety of online payments can be accepted through numerous alternatives, one being the organization's website. The result will be increased efficiencies due to reduced labor and easy, digital retrieval of information for both customers and organization staff. Online payments also provide citizens with 24/7 transaction capabilities and the convenience of not having to involve staff or go to City offices.

The City currently accepts the following types of payments and transactions online:

- Activity registrations
- Donations
- Permit applications (forms)
- Public requests (email)
- Event registrations

Other example online payments could include, but would not be limited to:

- Permit applications and fees
- Camping fees and payments
- Miscellaneous receivables
- Miscellaneous permits
- Parking tickets/citations and status inquiries
- Citizen requests and status inquiries
- Activity registrations
- Facilities reservations
- Donations
- Volunteer applications
- Job postings and online application submittals
- GIS map inquiries
- Official online records requests (e.g., agendas, minutes, documents, etc.)

Staff Feedback

- CMO – Collect fees
- CMO – Collect donations online

- CMO – Collect sponsorships online
- CMO – Need online planning and building portal for the public to view and monitor projects
- Comm. Dev. – Are not taking any planning or permitting payments online
- Comm. Dev. – Need to allow for online status checking of applications
- Comm. Dev. – Need online inspection scheduling
- Comm. Dev. – Would like to take simple permits online
- Comm. Serv. – Use Eventbrite for ticket sales
- Comm. Serv. – Using Open Budget to provide community access to City financial information
- Comm. Serv. – Using Virtual Merchant for credit card payment processing
- Comm. Serv. – Using PayPal for credit card payment processing
- Comm. Serv. – Would like to consider a customer mobile app for processing payments
- Comm. Serv. – Online payments are not automatically interfaced to eGov
- Comm. Serv. – Need online childcare enrollment capabilities
- Finance – Taking online payments for class/activity registrations
- Finance – Taking online payments for facility rental reservations
- Finance – Taking online payments for business license registrations and renewals
- Library – Would like credit card payment ability for non-Library account purchases (Friends of the Library books, promotional products, exam proctoring, etc.)
- Police – Alarm billing is somewhat automated in RIMS; however, there is a module that would allow online payments and account access
- Police – Would be great to allow customers to both view and pay for their alarm permits online
- Police – Currently not taking parking payments online
- Police – Provide a public database of investigations that is Web-based for people to search
- Police – Would be great to allow customers to both view and pay for their alarm permits online
- Police – Need online automated parking permitting system
- Police – Would be great to allow tow companies to make online payments or over-the-phone payments
- PW – Need to become compliant with online permits for solar panel (AB 2188)
- PW – Need to offer online truck permits
- PW – Should accept payments online
- PW – Should accept permits online

Recommendations

- Conduct a citywide needs assessment to determine all useful online payment types that could be implemented to improve constituent service.
- Conduct cost-benefit and prioritization analysis.
- Select other software payment vendors according to the *Software Selection Best Practices* initiative.
- Consider existing core business applications options, such as ERP, parks and recreation software, permit management, ticket/citation management, among others, before new, third-party solutions, in order to eliminate requirements to integrate new solutions with back-end operational systems.
- Manage improvements according to the *Project Planning and Implementation Best Practices* initiative.

Benefits

- More accurate and consistent information
- Timely and reduced reconciliation
- Increased awareness of citizen self-service
- Reduced over-the-counter time for transactions
- Increased staff and citizen satisfaction

69. Video/Web Conferencing

More users want a user-friendly approach to teleconferencing in the future. Web conferencing is being used more and more instead of face-to-face meetings and group training. Common Web conferencing capabilities also include:

- One-to-many
- Conference room meetings with video conferencing
- From an office or home site
- Classroom
- Conference room presentations
- Group meetings
- Simultaneously training multiple users in multiple locations with video and audio sharing of all locations

A few vendor examples including WebEx include:

GoToMeeting

- Screen sharing
- Application sharing
- Remote control
- Annotations
- Teleconferencing
- Web chat
- Recording

WebEx

- Presentation upload
- Screen sharing
- Application sharing
- Remote control
- Annotations
- Teleconferencing
- Web chat
- Recording

Office 365 – Skype for Business

- Presentation upload
- Screen sharing
- Application sharing
- Remote control
- Annotations
- Teleconferencing
- Web chat
- Recording

Staff Feedback

- CMO – Are using Google Hangout or Skype for Web meetings
- CMO – Would like to use Web conferencing capabilities
- CMO – Would like to provide a camera to council members for them to participate on council meetings remotely
- Comm. Dev. – Use Skype for remote meetings and interviews
- Comm. Dev. – Customer recently mentioned to Building Dept. another city that does video conferencing (FaceTime, e.g.) for appointments
- Library – Need video conferencing
- PW – Need a conference call solution

Recommendations

- Review current needs and number of users for each department.
- Research most cost-effective solutions for the organization.
- If the City migrates to Microsoft Office 365, consider its solution before other third-party vendors.
- Determine best overall solution, required users, and alternative costs.
- Conference rooms should be configured to support Web conferencing (see Conference Room Audiovisual initiative).

Benefits

- Reduced transportation costs
- Meeting recording and storage capabilities
- Effective remote control features
- Enhanced group training capabilities

70. Council Chambers Audiovisual Systems

Findings and Observations

- Council chambers audiovisual and lighting are older, but still functional.
- IT Division staff are responsible for Council meeting cable TV feeds.
- IT staff support Council meeting start to validate that systems are working appropriately.
- Agenda management software, which may also include a separate module for developing meeting minutes, is not currently utilized.

Staff Feedback

- CMO – Need new audiovisual equipment for Council Chambers
- CMO – Need support for Council Chambers technology

Recommendations

- Consider outsourcing the production of City Council meetings, captioning, and post-production to a third-party vendor that specializes in public meeting broadcasting.
    - Can include online real-time streaming of the broadcast of Council Meetings and other public meetings, if desired.
- Design and develop an RFP for replacement of audiovisual equipment and lighting systems in Council Chambers.
- Utilize PEG fund balance and PEG fees over time to keep improvements budget-neutral, if possible.

Benefits

- Improved production quality of City Council meetings and other public meetings held in the Council Chambers
- Increased availability of IT staff for core technology projects and staff support
- Improved government transparency

71. Conference Room Audiovisual

Conference room audiovisual tools are used to enhance meetings, which include projectors, video conferencing software, smart boards, and other technology aids.

Findings and Observations

- Currently, conference rooms lack 21st century audiovisual capabilities.
  - As portable devices proliferate, demand for audiovisual capabilities will increase.
  - Wall-mounted monitors can provide very cost-effective audiovisual capabilities in smaller conference rooms.
  - Projectors are a good choice for larger rooms that will require a larger screen for full audience viewing.

Staff Feedback

- CMO – Need technology available to staff in conference rooms (smart boards)
- Library – Professional-level AV equipment for meetings/presentations/webinars in staff meeting room and downstairs conference/event room
- Library – Need audio system for downstairs event/conference room
- Library – Need standard audiovisual equipment in conference rooms
- PW – Smart boards needed in conference rooms, with password-protected access to City drives to hold effective meetings

Recommendations

- Each conference room should have nearly the same configuration.
- Similarities in configuration across all rooms allow for employees to go to any conference room and be familiar enough to quickly setup to conduct meetings with all the required technologies.
- A standard AV design will be provided by *ClientFirst* that will include monitors, projectors, audio, and Web/video conferencing connectivity with necessary cameras, etc.
- To control costs, a plan can be provided to update conference rooms over several years as the budget allows.

72. Social Media Policy and Procedures

Findings and Observations

A Social Media Policy is a code of conduct that provides guidelines for departments and individual employees who create a social media presence and post content on that presence or on the Internet, either as part of their responsibilities or as a private person. Setting clear expectations for departments and employees can positively affect the organization's image within the community, as well as avoid embarrassment and legal liabilities.

Staff Feedback

- CMO – Have a public communication team comprised of staff from multiple departments; the team meets every Tuesday at 2 PM
- CMO – Need policies and procedures for social media
- Comm. Serv. – We need a marketing/social media person dedicated to support website updates and social media
- Comm. Serv. – Have a social media framework, but only a draft of a policy has been created
- Comm. Serv. – Each department has their own Facebook page, and even within departments there are multiple Facebook pages (e.g., aquatics, special events, etc.)
- Comm. Serv. – Decision was never clearly stated on having a single Facebook account for the City
- Finance – Social Media policy is from 2012 and is outdated
- Finance – Authorization is technically required before creating a social media account
- Finance – Need different protocols by type of communication (e.g., marketing, events, etc.)
- Library – We need info/template/guidelines/direction regarding what content is expected/allowed
- Library – Library has a Facebook, Twitter, and Instagram account
- Police – When there is a critical call that the public needs to be made aware of, dispatch is required to go on social media and send an alert; this is often very difficult for dispatch to do since they are doing other tasks that are of higher priority
- Police – Using Facebook, Instagram, and Twitter

Recommendations

- Typical social media policy determines:
  - What Departments are allowed to establish a social media presence and on what social media services (e.g.., Facebook, Twitter, etc.)
  - Sets guidelines on what type of information can be posted and what information can be feed
  - Sets guidelines on personnel who can be responsible for social media establishment and maintenance at the department level and levels of departmental management review
- If two-way blog posts are allowed, most municipalities monitor them every day.
- Software products that automatically update several social media outlets from the webpage are readily available and should be used to realize efficiencies.
- Consider potential social media integration opportunities with the organization’s websites.
- Provide approval to employ a limited number of named social media sites subject to review by IT Committee and approved by management.
- Provide tutorial for employees who use social media to promote organization events and information.

Benefits

- Increased community involvement
- Improved public records access
- Enhanced communication
- Improved public relations
- Fulfillment of public expectations
- Increased promotion of business growth
- Mitigation of risk through education of staff on policy and practices

73. Mobile Computing

Findings and Observations

The 21st century has brought an increasing demand for time and resources. Because of the need for maintenance personnel, inspectors, code officers, general field employees, and other employees to work in the field or offsite, *mobile computing* technology relieves bottlenecks in obtaining information and producing reports necessary to perform their functions and meet these demands. By providing field and remote workers with the necessary equipment and software, they are able to:

- Interact with necessary applications and databases in real time
- View data or enter data in the field
- Interact with GPS and field devices
- Review, change, or request inspection and maintenance scheduling
- Remotely submit inspection and maintenance reports
- Respond quickly to requests and questions from the public

Such off-site capabilities offer:

- The ability to break the bonds of office facilities to complete work in the field
- Increased productivity and improved time management
- Centralized data that can be monitored in real time
- Improved accuracy and reporting
- Reduced paperwork and elimination of need to reenter data upon returning to the office

This is primarily a hardware and secure-wireless networking challenge, as software applications that use browser technology require no additional software. For software programs that are not browser-based, we recommend virtual desktop technology.

- Demand for remote access will continue to grow as staff becomes more portable.
- Access to mobile applications for smart phones and tablets will be a portion of remote access demand.
- The other major demand segment will continue to be remote access from laptops and desktops.

Some software solutions that are designed for specific field operations, such as maintenance work and inspections, may have smart applications (downloaded from an app store) or native-written mobile device modules. These software modules generally have less functionality than the full applications that are accessible from laptops or Toughbooks. One major advantage of these types of modules, however, is store-n-go technology, which allows a user to continue working on a record, even if they are disconnected from a cellular or Wi-Fi connection. Once

the user is back in range with the cellular or Wi-Fi signal, the store-n-go capability recognizes the reconnection and updates the information in the background. Store-n-go functionality becomes even more critical if the jurisdictional/geographical service area does not have full cellular or Wi-Fi coverage. It should be noted that virtual desktop technology does not have Store-n-go functionality.

Return-on-Investment (ROI) Consideration

The Center for Digital Government (CDG) reports that one agency's wireless laptop-based inspection solution helped its land management division increase the number of daily inspections. Another agency used laptops and electronic inspections to increase inspector efficiency by 30 percent, saving the agency approximately $500,000.

A pilot mobility program in San Diego County helped the Land Use and Environment Group (LUEG) save $130,000. Inspectors that participated in the project used mobile devices connected via a mobile VPN and were 31 percent more productive than before. They completed more inspections each day, and the agency was able to use less office space and fewer telephone landlines.

Staff Feedback

- CMO – Need video equipment which can be used from the field (e.g., recruitment videos, entertainment, events, etc.)
- Comm. Dev. – Have a tablet that links field building inspector activities/notes with Tidemark cases
- Comm. Dev. – Some planners have iPads, which is helpful, but which may not be used as fully as they could be
- Comm. Dev. – Interest in using Apple devices, but inconsistent IT support, currently
- Comm. Dev. – Some building staffers use City flip phones, which are fairly outdated
- Comm. Serv. – Would like the option for the public to complete on-site surveys with iPads
- Finance – Have an outdated mobile device policy and equipment
- PW – Could use tablets for Water Department and Transportation (GIS-based asset management)
- PW – Need laptops to promote flexibility and efficiency given reduced work space

Recommendations

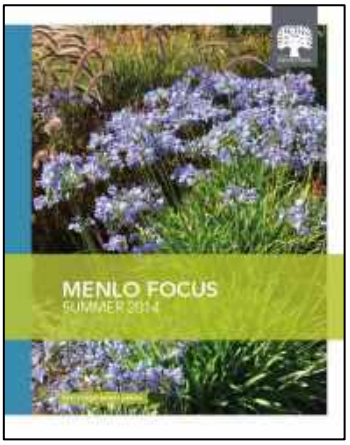
- Determine and inventory mobile/field computer needs by specific staff and department including the full-use and mobile applications needed in the field or for required remote access. These inventories should also be categorized based on the level of productivity and public service gains/benefits.
- Follow recommendations for mobile hardware recommended and supported by existing and future core business department applications, such as inspections, work orders/maintenance management, and any other applications that involve field-based activity.
- Implement a mobile device management (MDM) solution early in the deployment cycle and integrate the MDM with inventory and Help Desk functionality.

Benefits

- Improved operations management
- Secure sharing of information
- Enhanced communication
- A more mobile and productive workforce
- Faster, well-informed decision making
- Real-time access to information from the field
- Increased ability for team members to communicate/collaborate from separate locations

74. Newsletter

Findings and Observations



The Village currently prepares hard copy newsletters. Staff would like to explore more efficient software to create the newsletter and distribute and also make it available electronically. Other Cities that have conducted public focus groups have found that many residents would prefer an emailed newsletter or an emailed link to a Web-based newsletter, instead of receiving hard copies. Some households prefer multiple options. However, providing the newsletter via the Web for those that prefer such can enhance resident communication and reduce costs of printing and postage.

Focus Group Feedback

Results from a Recent Focus Group at a similar Municipality

- Would like newsletter in email format
- Would like online newsletter with link from email message
- Would like links to video meeting agenda items or other information embedded in the online newsletter
- Want to opt for the electronic newsletter and stop receiving the mailed version. Will save City money
- Prefer communication feeds electronically (e.g., email alerts)
- Prefer mailed newsletter
- I prefer electronic; my wife prefers mail
- Some studies show 80% of population prefers electronic communication, including senior citizens
- We're ok with being mass subscribed via email to all categories, as long as opt-out or unsubscribe is easy to do
- Need ability to sign-up for communication methods and content type
- Different people like different types of communication. Use them all.
- Need to maintain communication preferences for more than one person per household (e.g., spouses may have different needs and interests, multiple email and mobile numbers)

Staff Feedback

- CMO – Previously used iContact to generate quarterly newsletters
- CMO – Are considering Civic Plus for potential newsletter capabilities
- Comm. Serv. – Position dedicated for creation of newsletters is currently vacant

Recommendations

- Devise additional methods for residents to sign up for various types of communication methods and begin gathering emails and cell phone numbers with permission from citizens.
- Consider establishing a Web-based version of the City/community newsletter that can be emailed with a Web link, but also printed and mailed.

75. Dual Monitors

Findings and Observations

Utilizing dual monitors for many users can significantly increase the speed of completion for certain computer tasks, thereby increasing overall employee productivity. Some studies have shown increased overall productivity of 20-30% for office staff and up to 50% and 74% for certain computer tasks. These studies demonstrate a return-on-investment multiple times the cost of the additional monitor when calculating the efficiency savings with gross hourly labor costs.

- The majority of staff use single-monitor systems
- Studies show dual monitor systems are approximately 20% more productive
- Our experience has been that staff requires 30 days to understand how to use the technology for productivity improvement.

Return-on-Investment (ROI) Considerations

- A Microsoft productivity study concluded that adding an extra monitor can boost productivity by 9% to 50%.[9]
- A study conducted by the University of Utah found that dual monitors helped users complete tasks as much as 52% faster.[10]

Staff Feedback

- Comm. Dev. – Double monitors may be helpful for our department, as we are often looking at one document (plans, reports) while writing a comment letter

Recommendations

- Staff to prioritize potential dual monitor implementations.
- Implement as PCs are replaced, or more quickly, if demand requires.

Benefits

- Improved staff productivity return on investment (multitasking)
- Enhanced ability to compare work
- More efficient sharing of data between applications
- Compatibility with both laptops and computers

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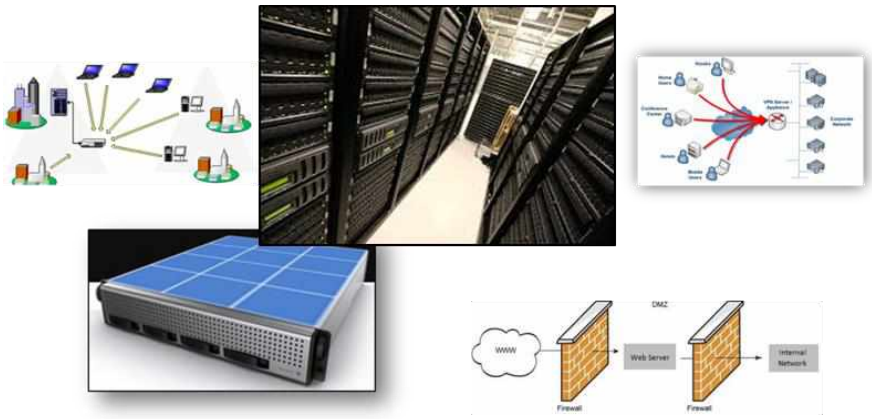
[9] "4 Studies which Show that Using a Second Monitor Can Boost Productivity", Core Communication 11 Dec. 2010, 4 Apr. 2013, < http://www.corecommunication.ca/4-studies-which-show-that-using-a-second-monitor-can-boost-productivity/ >.

[10] Core Communication, 11 Dec. 2010.

IT Infrastructure refers to networks, servers, equipment, inside/outside cable plant, and other communications infrastructure.

76. IT Computer Room and Teledata Closet Improvements
77. Wireless Network
78. Internet Bandwidth
79. Electronic Mail (Exchange)
80. Enhanced Internet Security and Connectivity (DMZ)
81. Remote Access Upgrade
82. Network Redesign
83. Core Switch Replacement
84. Power Distribution
85. Virtual Server Migration
86. Storage Area Network (SAN) Upgrade
87. Technology Support for the EOC
88. Redundant CAD/RMS System
89. Computer Upgrades (Windows XP & Office)
90. Video Camera and Surveillance System (Citywide Standard)
91. Secure Managed Access (Wireless/Keyless Security)



76. IT Computer Room and Teledata Closet Improvements

Findings and Observations

- Clearance behind the computer racks is 24 inches, less than best practice of 36 inches.
- There is a sprinkler located directly above the server racks.
- Some power is connected to UPS systems; other power outlets are connected to directly to generator power.
- There are no environmental monitors in the computer room.
- Grounding is not available.
- There is a single HVAC unit in the main computer room.

Recommendations

- When remodeling the space, consider installing new cabinets utilizing best-practices and moving equipment from current racks to new cabinets.
- Add a second HVAC unit in the main computer room.
- Add additional UPS and Power Distribution Units to better manage electricity.
- Increase the use of best practices cable management techniques to decrease inter-cabinet cabling.
- Add environmental monitors for temperature and humidity alarm capabilities.
- Add building ground and ground bar to the computer room.
- For fire suppression, consider:
  - Two-stage sprinklers that remove water from the room and provide additional time to avert accidental sprinkler activation.
  - Installation for an FM 200 or similar clean, fire suppression system.

Benefits

- Improved productivity for IT Staff as a result of more space and better organization
- Increased environmental monitoring of temperature conditions
- Reduced application and network crashes
- Improved service assurance (uptime and reduced risk)

77. Wireless Network

Findings and Observations

- City utilizes Cisco and Meraki wireless for Wireless LAN (in-building wireless).
  - The City has a central wireless controller.
  - The wireless access points will be nearly two generations behind by the time this report is published.
- Cloud-based control of wireless is becoming the new standard.
  - Cloud-based wireless controller would eliminate the need for a controller and reduce support costs.
- Demand for public Wi-Fi in open spaces will continue to increase.
- The City does not currently utilize a wireless "splash page" outlining terms of use.

Recommendations

- When refreshing the wireless infrastructure, develop an open RFP and evaluate cloud strategies from multiple vendors.
- Add a "splash page" to the guest wireless sign-on process.

Benefits

- Improved wireless speeds
- Reduced complexity
- Increased security
- Expanded coverage

78. Internet Bandwidth

Increased Internet bandwidth and high availability are becoming increasingly important to organizations for daily functionality. This allows for additional resources to become available during peak Internet usage and provide for resiliency when disasters occur that may affect primary Internet connections that are no longer accessible.

Findings and Observations

- Internet bandwidth is adequate.
- The City maintains two Internet connections through high-availability firewalls.

Recommendations

- Additional Internet bandwidth will be required as the City increases the use of cloud-based systems.
- Increased Internet costs has been included in recommended Five-Year Budget.

Benefits

- Improved performance
- Increased Internet uptime
- Increased resiliency, providing increased cloud-based applications and services uptime
- Reduced risk and liability
- Disaster Recovery safeguard

79. Electronic Mail (Exchange)

Findings and Observations

- Exchange 2007 is the electronic mail platform of the City.
  - Exchange 2007 is two generations behind.
- The City does not have an email archiving solution.
  - An email records retention policy is currently not enforced.

Recommendations

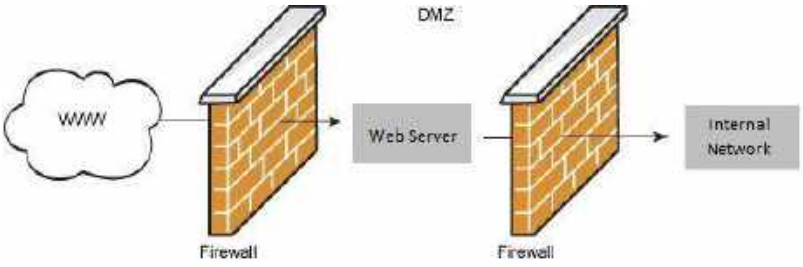
- Upgrade to Exchange 2013. and move to redundant database groups (DAG) as a part of the upgrade process.
- Investigate and select an email archiving solution.
- Develop an Email Records Retention Policy, and implement automatic retention guidelines in support of the policy.

Benefits

- Reduced time managing email
- Reduced time on public records requests
- Improved stability of environment and higher availability of email-based services

80. Enhanced Internet Security and Connectivity (DMZ)

A *Demilitarized Zone* (DMZ) is the area of a network that is accessible to the public. This area is separate from an internal network that is used only by internal staff. DMZs are utilized to maintain online services used by the public, such as viewing the website or online applications (i.e., license renewals, online permitting, online utility billing information, online payment transactions, applications, and other online public inquiries).



Findings and Observations

- The existing DMZ is robust.
- City firewalls are configured in a High-Availability Pair.
- Some internal services utilize the DMZ.
- Additional security measures are outlined in an earlier Security Assessment.

Recommendations

- Develop security policy, including a section outlining external to internal connection security.
- Create a Secure File Transfer Protocol (SFTP) capability within the DMZ.
- Add intrusion detection and prevention mechanisms to the firewalls or Internet connection.
- Improve proxy and filtering capabilities in the DMZ.

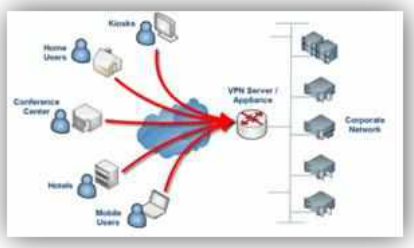
Benefits

- Improved security and management.
- Proper segmentation of publicly accessible resources for external to internal network connections.

81. Remote Access Upgrade

Findings and Observations

- The City provides remote access through the Sonic Wall firewall.
- Demand for remote access will continue to grow, especially for staff with significant out-of-office computing needs.
  - Access to mobile applications for smart phones and tablets will also be part of increased remote-access demand.



- Two-factor authentication is now required for certain Police Department remote access
- Two-factor authentication is Best Practice for remote access to SCADA systems
- Two-factor authentication will become the standard for remote access to all sensitive computer systems in coming years.

Staff Feedback

- A two-factor authentication project is underway for Police MDCs.

Recommendations

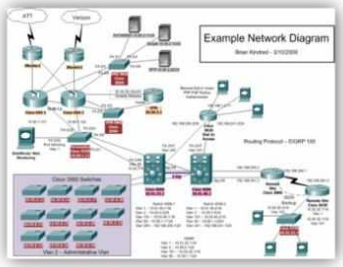
- Expand the two-factor authentication project to include remote SCADA access and remote network access for the IT staff.

Benefits

- Increased mobility for the current workforce
- Increase security

82. Network Redesign

Findings and Observations



- Current network topology contains single points of failure for core connectivity.
- Bottlenecks exist in the network, resulting in poor performance and reliability.
- Not all devices within the core network were designed with core network functionality in mind.
- Network was not built with future growth in mind, and is limited.
- Network IP addressing and segmentation improvements could further increase security and performance.
- The Police Department is segmented from the City administrative network.
- The SCADA network is segmented from the City administrative network.

Recommendations

- Redesign the core network to increase speeds a minimum of ten times.
  - Create a resilient core network that eliminates single points of failure.
- Review Virtual LAN (VLAN) network segmentation and revise per current best practices.
- Monitor and collect performance metrics on network availability and viability.
- Consider implementing firewalls between the City administrative network, and the Police and SCADA networks.

Benefits

- Improved network performance speed and reliability
- Reduced support costs
- Full redundancy across sites
- Increased security

83. Core Switch Replacement

Findings and Observations

- Core switches interconnect all City Hall servers and the network.
  - Existing core switches are not adequate for the City's current and future needs.
  - The core network triangle utilizes dissimilar devices, limiting resiliency.
- Existing core switches have limited ability to support current bandwidth requirements.
- Physical redundancy is limited.
- Additional network segmentation within the core switching environment will improve performance.

Recommendations

- Upgrade core network switch to resilient Cisco 4500 Series model or higher.
- Implement redundant core switching capabilities.
- Increase support for core switching infrastructure to 24 x 7.

Benefits

- Unified network platform, improving functionality and reducing potential compatibility issues
- Centralized management and visibility into network

84. Power Distribution

Findings and Observations

- Some computer room electric power utilizes UPS systems, while other servers are plugged directly into generator driven-power outlets.
  - Generators have been known to create power spikes and brown-outs that decrease the life of attached equipment.
- Power distribution units (PDUs) are used within the computer rooms of most organizations to control and monitor power to particular network devices such as servers and switches.
- PDUs can extend the life of network hardware by utilizing power more efficiently.
- PDUs can be used to monitor and remotely control power distribution to computer infrastructure equipment.
- The City utilizes PDUs on a limited basis within the main computer room.
- The PDU units that are in place are not advanced enough to support Best Practices monitoring and management functions.

Recommendations

- Budget for additional UPS capabilities as a part of the data center remodeling project.
- Budget for and implement PDUs within the City Hall and Police Department computer rooms.
- Consider procuring network management software for the UPS.
- Create battery and PDU replacement cycle.

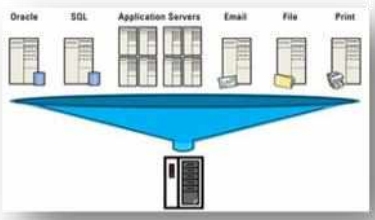
Benefits

- Improved support for electronic devices
- Improved management and monitoring capabilities
- Longer-lasting equipment
- Reduce cost in replacement of failed hardware

85. Virtual Server Migration

Hardware virtualization refers to the creation of a virtual machine(s) that acts like a real computer with an operating system. Software executed on a virtual machine is separated from the underlying hardware resources. Virtualization enables servers to be easier to implement and less costly to own and manage.

Findings and Observations



- Server virtualization has been limited.
  - IT staff is actively working to virtualize servers.
- There are many legacy servers in productions which are two or three generations behind.
- A capital replacement plan does not exist.

Recommendations

- Create a capital replacement plan for existing servers.
- Continue to virtualize servers.
- Utilize advanced virtualization management to increase server resiliency.
- Establish active Simple Network Management Protocol (SNMP) monitoring and logging.
- Enable additional features on virtual environment:
  - Fault Tolerance
  - Network Interface Bonding
  - DR and Failover Services

Benefits

- Reduced data center space needs
- Reduced power requirements
- Improved failover and reliability

86. Storage Area Network (SAN) Upgrade

Storage area networks (SANs), or the use of shared storage using a data communications infrastructure, provide several unique benefits over direct attached storage, including easier scalability, centralized management, and increased disk utilization. SANs became increasingly popular with the advent of the Fibre Channel (FC) standard in 1994. The IP SCSI (iSCSI) storage networking protocol was standardized in 2004 and is generally considered to be easier to manage and less expensive than Fibre Channel, but does not perform as well.

Findings and Observations

- The City has HP (formerly Left Hand) SAN that utilizes iSCSI Internet Protocol (IP)-based networking for storage management.
  - These SANs are several generations old and are no longer considered industry leaders.
- When compared to Fibre Channel SAN, the advantages of iSCSI SAN outweigh its disadvantages, especially in the relatively small data center environment that the City operates.
- Virtualization and the creation of “snapshots” of servers for rapid restoration have increased storage needs dramatically.
- Moving to Exchange 2013 with additional database redundancy will further increase storage needs.
- As the use of photos and videos to document activities and inspections increases, storage needs will continue to grow.
- We typical plan disk growth at 20%, compounded annually.

Recommendations

- Utilize a Best Practices procurement methodology to purchase additional disk storage.
- Integrate the procurement with a backup system upgrade to include:
  - Backups to disk
  - Cloud-based backup
  - Disaster recovery capabilities based on cloud-based backup.
- Procure an additional iSCSI-based SAN for failover and redundancy (replication).
- Institute Storage Tiering to improve the performance of core data and applications.

Benefits

- Increased performance and enhanced reliability
- Reduction in recurring costs for maintenance and expansion
- Improved backups
- Cloud-based disaster recovery capabilities

87. Technology Support for the EOC

Findings and Observations

- City's Emergency Operations Center (EOC) does not have sufficient technology to function optimally in large-scale emergency. Existing technology includes:
  - Voice-over-Internet Protocol (VoIP) phones
  - Cable TV and a large, flat-panel TV/Monitor
  - Limited wireless network
  - Available backup Internet
  - ePrint for mobile devices

Recommendations

- Add additional wireless capabilities to provide high-speed support for up to 20 individuals or 60 total devices.
- Conduct a study of EOC needs, and provide budget for recommended improvements accordingly.
- Audiovisual improvements:
  - Multiple monitors and monitor control systems
  - Workstation display systems
    - GIS mapping capabilities housed within the room
    - Ability to switch traffic displays onto monitors in EOC
- Consider adding Smart Board display technology.

Benefits

- Alignment with Disaster Recovery Plan
- Support for Incident Command System
- Event Information Tracking
- Coordinated support for emergency responders
- Basis for communication to the public during local incidents and for recovery activity

88. Redundant CAD/RMS System

Findings and Observations

- A Radius & ISP Management Server (RIMS) server is the platform for the Computer-Aided Dispatch (CAD) and Records Management Systems (RMS) that support the City's Public Safety departments.
- The City has only one RIMS server in place for the City's CAD/RMS environment. A redundant, secondary server, in a physically separate location, is a best practice to provide critical public safety applications functionality in the event of a failure of the primary server.

Recommendations

- Budget for the purchase and implementation of a secondary RIMS server and associated network systems, and make arrangements for the installation of this server in a separate location.
  - Test failover to the second server on a regular basis.

89. Computer Upgrades (Windows XP & Office)

Findings and Observations

- On April 8, 2014, Microsoft ended support for the Windows XP desktop operating system.
- The City has approximately 27 XP desktop computers.
- The City does not utilize an imaging platform to distribute applications to desktops
- An imaging platform to distribute applications to desktops is not currently utilized.
- One department mentioned that some desktop computers had different versions of Microsoft Office installed.

Recommendations

- Finalize an inventory of desktops and laptops to determine age, model, and operating system of all systems, focusing on identifying the number of computers running Windows XP.
- PCs and laptops running Windows XP should have their operating system upgraded to Windows 7 or 8.1, or be replaced with a new computer.
- Windows 8.1 has recently become a viable alternative to Windows 7, although Windows 10 will allow many organizations to skip Windows 8 altogether.
- Evaluate and procure a desktop imaging system.
  - Acronis has become our standard recommendation.
- Inventory all desktop and laptops and determine upgrade path to a consistent version of Microsoft Office across the organization.
- Staff to prioritize potential dual-monitor implementations.
- All new PCs should be purchased with the ability to natively connect two monitors.

Staff Feedback

- Comm. Dev. – IT responsiveness to service requests generally good
- Comm. Serv. – IT does a good job being responsive
- Finance – IT is very responsive to our department's needs
- Finance – The number one issue is anything involving ADP
- Police – IT is very responsive to service requests and emergency situations
- Police – Currently do not have issues with IT; their response time to service requests and support/maintenance are always timely
- PW – IT is super responsive and helpful

90. Video Camera and Surveillance System (Citywide Standard)

Findings and Observations

Actively monitored security camera surveillance systems can be an effective security tool and criminal deterrent. One study by the Urban Institute determined that the savings and benefits of fewer incidents and crimes outweighed the cost of video surveillance systems. The study also found that Police, Parks and Recreation, Code Enforcement, policymakers, and others involved in facility/property oversight, largely viewed security/surveillance/monitoring cameras as a useful tool for managing behavior, preventing crimes, aiding in response, assisting in arrests, and supporting investigations and prosecutions. Video Monitoring has also been found to have significant value in large, open spaces that are difficult to cover with existing personnel but can be more easily covered and monitored with video technology.

Video Monitoring can be applied, but not limited to:

- Graffiti abatement
- Monitoring specific public areas, facilities, buildings, parking lots, parks, etc.
- Monitoring access or gated sites for in/out traffic, including license plate reader technology
- Use as evidence in criminal prosecutions or potential claims and litigation

  Note: California Local Government Records Management guidelines require retention of public safety surveillance video images for a minimum of the current year, plus an additional 13 months.

The City has a number of camera systems and types of various ages. The desire is to standardize across the City for both Police and other City departments' needs, including the centralization of the citywide video system management, including a replacement plan to keep the system up to date and consistent.

- The City currently utilizes multiple video surveillance systems.
  - These existing systems are proprietary.
  - Due to the proprietary nature of these systems, they cannot be monitored or managed from a single console.
- There are requests for additional video surveillance cameras from multiple departments, in addition to the Police Department.

Staff Feedback

- Comm. Serv. – Need security cameras for all facilities
- Comm. Serv. – Using Security cameras at MCC, MHCDC, OHCC locations
- Library – Need a security camera system inside/outside Library that is accessible/viewable by Library staff and police
- Police – currently we have three different camera systems in dispatch that are to be monitored by the dispatchers. The first is a very old 15+ year-old system that monitors 16 cameras, except some of the cameras do not work. The second is for 4 cameras located in the Belle Haven area, and can be accessed through Milestone. The third is accessed through Pivot, and these cameras monitor the Police lobby.
- Police – Cameras need to be combined so that access is through one platform.
- Police – A new monitor should be added to each dispatch position so that we can have the cameras up and in view at all times.
- Police – Accessing audio and video files from various surveillance systems provided to us for crime investigation
- Police – Desire Milestone to be the standard platform for all cameras
- Police – Cameras store 30 days of recordings
- Police – There is no onsite data storage of camera recordings—all stored on cameras

Recommendations

- Costs for all cameras used for general monitoring, surveillance, and security need to include local video storage and Internet access. This needs to be investigated and costs determined.
- Police and other City personnel should analyze the City's geographic jurisdictional area to determine what locations would benefit from this video technology and determine where cameras should be placed.
- Continuous access to real-time video with interactive voice from location cameras may be costly. Real-time video with voice integration should be analyzed for cost-benefit.
- A video surveillance design RFP process should be considered to select a video surveillance vendor for the City to upgrade this critical equipment.
- Eventual selection, purchase, and implementation of an IP-based network video recording (NVR) system should be considered that allows for storage and retention of video images that meets the needs of all the departments, but also meets California Local Government Records Management guidelines for the Police Department.
- Management systems such as Avigilon and ONSSI that are "open" management platforms and can support multiple camera vendors should be considered in order to reduce potential interoperability issues.
- Video monitoring should be considered as a multi-year project. A multi-year project and timeline would allow for proper planning and a rollout of the technology in a prioritized fashion over several fiscal years.

91. Secure Managed Access (Wireless/Keyless Security)

Managed access control and security, or *keyless entry*, is an effective way for the City to manage security and access to various buildings, facilities, or other controlled locations. Secured access control systems allow the City to track and restrict who can access facilities where and when.

This limits security risks and allows for the management of access by employees and for the public. Many municipalities are moving to a single, organization-wide system to manage security and access to facilities.

Findings and Observations

- The City has two separate security systems of keyed and wireless security systems for buildings, facilities, and external locations.
- Systems are a mix of physical and controlled.
- Many departments have suggested and are open to a centrally managed, citywide system for security and access, if it can accommodate everyone and also provide access to constituents enrolled in services or programs.

Staff Feedback

- Comm. Dev. – Consider possibility of using building swipe cards/key entry as automatic
- Comm. Serv. – Would like to provide customers and staff with wireless keys/keyless access to tennis courts
- Library – Need card-swiping ID cards for access to secure areas, rather than using multiple keys on a key chain
- Police – Need a better way to manage and secure City facilities and locations
- Police – Our security system for the City needs to be replaced/combined and/or significantly improved.
- Police – Currently we have two separate security systems; the first monitors the City facilities; this system is manually operated, is old and monitors burglary and fire alarms; the second security system is over 15 years old and is called Velocity; there is one computer, one monitor that is shared by the room; this system operates the doors and gates for the City buildings, opening, locking etc.; it also shows door alarms
- Police – The Velocity system is old and, quite frankly, ignored because the alarms sound all day long from people coming and going
- Police – When an alarm is received the dispatcher has to get up and manually silence the system; then they have to print out the alarm screen; they then create an incident in RIMS to look up the code that has been printed; there are a variety of codes that have different meanings
- Police – The dispatcher will enter the incident into RIMS and dispatch the appropriate person
- Police – Any new system should be citywide and integrated with the RIMS CAD/RMS system

Recommendations

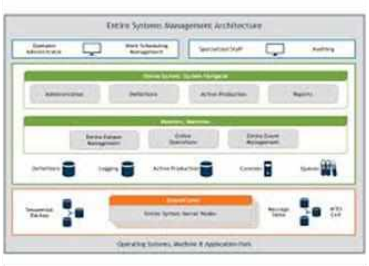
- Complete a review and a needs assessment of City's facility access and control requirements and document the results. This should be a single, citywide system that all departments and divisions within the City are covered under in a cooperative fashion.
- Access should also allow extending to constituents and others as appropriate (e.g., Community Services for tennis court access).
- Follow best practices according to the *Software Selection Best Practices* initiative, to select the appropriate system.
- Ensure that integration between the new system and other systems (e.g., Police RIMS system, the new Parks and Recreation system, and potentially others).
- Consider utilizing a third-party SME or consulting firm for the needs assessment and feature/function development.

Benefits

- Improved maintenance and less time
- Mechanical locks and keys replaced with electronic locks, badges or cards and readers.
- Eliminated expense of re-keying or changing locks for employee separations
- Employees and others are less likely to set off false alarms
- Automatic regulation of access reduces need for onsite security personnel
- Allows for more efficient temporary access by outside personnel, like visitors or vendors
- If integrated with the Police RIMS system, aids more timely response to alarms
- Decreases liability and risk from greater access control

IT Operations refers to the daily support and maintenance of all IT infrastructure and user support.

92. Help Desk Ticketing System
93. Mobile Device Management
94. Network Management Tools (Alerts/Alarms)
95. IT Support Metrics
96. Desktop Management
97. IT Automation Tools (Patch Management)
98. IT Policies and Procedures
99. IT Procurement Practices
100. IT Cost Recovery (IT Budget Allocations)



92. Help Desk Ticketing System

Help Desk systems provide an easy way for users to submit requests. IT Staff can assign tickets. The automated electronic, mail-based communications included in Help Desk systems can allow users to track the progress of their tickets as IT Staff updates the status. Help Desk systems prevent item from "falling through the cracks" by logging all requests. Another key benefit of Help Desk ticketing systems is metrics related to the number of requests submitted, resolved, and remaining open.

Findings and Observations

- The City does not currently have a robust Help Desk system.

Recommendations

- A Help Desk ticketing system should be utilized to track staff productivity and service.
- Metrics related to meeting Help Desk service levels should be developed and tracked on a weekly and monthly basis.
- Each month, summaries of Help Desk tickets opened and closed should be presented to the IT Steering Committee.
    - IT Steering Committee members should be prepared to discuss any Help Desk issues or festering problems during the monthly meeting.

Benefits

- Central ticketing system
- Availability to many users
- Increased resolution rates
- Support for all devices
- Improved user communication, experiences, and satisfaction
- Better diagnostics and problem identification

93. Mobile Device Management

Mobile Device Management (MDM) is software that allows management, distribution, usage, and maintenance of laptops, tablets, and smart phones. Additional features allow configurations to be done on devices to discourage wrongful use and reduce individual device maintenance.

Findings and Observations

- MDM provides the ability to see and control all mobile devices entering the enterprise, whether they are provided by the City or are part of a Bring Your Own Device (BYOD) program.
- The IT Division currently supports approximately thirty (30) mobile devices, including laptops, smart phones, and tablets.

Recommendations

- Research, pilot, and select Mobile Device Management software.
  - Products that integrate with the Help Desk system or inventory system should be given top priority in any evaluation.

Benefits

- Improved staff efficiency and mobility
- Support for all devices
- Less time manually managing and monitoring
- Increased use of remote access
- Easier distribution of software

94. Network Management Tools (Alerts/Alarms)

Network management is the general term used for the activities, procedures, and tools that relate to the operation, administration, provisioning, and maintenance of computer network systems, effectively keeping the network up and running smoothly, while also monitoring the system to quickly identify potential problems.

Findings and Observations

- The City uses an open source network management tool.
  - Open source tools often require more staff time to support than purchased products
- The City does not currently maintain a baseline of bandwidth utilization.
  - This baseline is very valuable in justifying bandwidth upgrades.
  - Bandwidth utilization is also a critical component in troubleshooting slow response times.
- IT does not use a comprehensive tool for monitoring alerts and analysis of performance data from routers, switches, servers, and other SNMP-enabled devices.
  - Some alerts and alarms are precursors to failure.
  - Others provide IT with early notification of failures.
  - Monitoring can provide IT 24-hour notification to problems, even if users are not present.
- Network management software can also provide availability metrics for IT applications.
- In many cases, will notify IT of problems before user community notices.
  - Moves IT from reactive to a more proactive posture.

Recommendations

- Procure and implement a network management system that can provide alerts and alarms across the enterprise (i.e., Solarwinds, What's-up Gold, etc.)
- Provide for the development of baseline bandwidth and usage measurements.
- Create alerts and alarms to notify staff before a failure.
- Provide justification for bandwidth and/or performance upgrades.
- Develop a matrix of triggers for various devices (e.g., server disk space, bandwidth utilization percentage, etc.)
- Implement matrix values and adjust.
- Develop bandwidth utilization baseline over time.
- Develop availability metrics for applications and systems.

Network Management

- Network Device Monitoring
- Performance Monitoring
- Bandwidth Monitoring
- Firewall Management
- Router/Switch Management
- Proactive Monitoring
- Threshold Customizations
- Altering
- Network Interface Stats

Benefits

- Less time manually managing and monitoring
- Increased utilization
- Increased resource access
- Centralized access to multiple applications and platforms
- Early warning capability, allowing for intervention and incident avoidance

95. IT Support Metrics

Findings and Observations

- Three full-time and one part-time IT Staff are employed by the City.
  - The part-time IT Technician resolves the majority of City administration IT-related issues when available.
  - One of the full-time staff members spends the majority of time supporting Police Department needs.
- IT does not track any metrics related to Help Desk ticket response or resolution times.
- IT does not have Help Desk ticket response-time or resolution-time goals.
  - These goals are usually proposed by IT and agreed to by the departments.

Recommendations

- Develop Help Desk ticket response-time and resolution-time goals based on urgency.
  - Track and report on these goals during IT Steering Committee meetings.

Priority	Response time	Resolution time
Urgent (multiple staff members unable to function)	2 hours	75% resolved in less than 4 hours
High Priority (single system down or critical function unavailable)	4 business hours	75% resolved in less than 8 hours
Medium Priority (a single program or function does not work)	8 business hours	75% resolved in less than 16 business hours
Low Priority (issue reduces productivity, but work-around exists)	16 business hours	75% resolved in less than 1 week

- Track number of tickets assigned, priority, response time, and resolution time by team member.

96. Desktop Management

The concept of *desktop management* refers to the comprehensive approach of managing all computers within an organization, including laptops and other devices. Tasks include installing and maintaining hardware and software, setting up spam filters, and providing user permissions. As security-related tasks have increased over the years, desktop management is also providing more patch management (code changes), corrections against viruses and spyware, and controlling greynet applications (programs installed without permission).

A *desktop management (DM) interface* is a framework for managing and keeping track of the hardware and software components of an organization's computers.

Findings and Observations

- A desktop management system is not currently being utilized.
  - Over time, desktop management will become less important as the City moves to Virtual Desktops.
- Centralized patch management and distribution is not implemented.
  - Centralized patch management can reduce Internet bandwidth utilization significantly.
- Staff members are utilizing manual and redundant processes to maintain the desktop environment, which is very time consuming and inefficient.
- The City has utilized GFI Languard, but the license has expired.

Recommendations

- Implement Windows Server Update Services (WSUS) while evaluating enterprise desktop management products.
- Implement an inexpensive desktop management solution to provide patching for products other than Microsoft:
  - Reenabling GFI Patch Management be the easiest course of action/
- Standardizing hardware and software platforms provides the following:
  - Reduced spyware infections
  - 30% reduction in Internet bandwidth usage
  - Reports summarizing PCs that are not updated
  - Increases distribution of antivirus updates
  - Reduced time spent managing virus protection

97. IT Automation Tools (Patch Management)

Findings and Observations

- Patches and security updates are performed manually.
- Patches are not pushed to a "sand box", including PCs from various departments.
- Staff does not currently have access to patch management forums.
- Without a comprehensive patch management solution in place, individual servers, PCs, and laptops may not receive important security updates, which exposes the City to security risks.
- Server patches occur periodically, but not on a regular schedule.
    - With a staff of three, dedicating off-hours time to server patching is difficult.

Recommendations

- IT staff should evaluate and purchase a patch management solution such as GFI LanGuard or Microsoft Systems Center for desktops and servers.
- Create a Best Practices patch deployment methodology that includes a small subset of desktop deployments to verify patch performance before full deployment.
- Solarwinds or What's Up Gold can perform the same services for patch and configuration management on network equipment.

98. IT Policies and Procedures

Findings and Observations

The City IT Division has a number of IT policies documented. The City expressed the desire to expand and tighten policies. They also want to ensure policies are in place to ensure that the organization is protected.

Recommendations

- Revise and create a limited number of IT policies and procedures, including, but not limited to, the following:
    - Encryption Policy
    - Data Usage
    - Security Awareness Training Policy
    - Web Filter Exceptions
    - Electronic Information and Email Retention Policy (currently in draft form)
    - Computer Security Incident Response Policy
- Utilize the IT Steering Committee to review policies and procedures and facilitate communication throughout the organization.

99. IT Procurement Practices

Findings and Observations

The City has a small degree of technology-oriented procurement practices in place. These procurement practices should be expanded to include more detail and address different procurement types, including:

- Commodity Systems
- Complex Systems
- Highly Complex or Expensive Systems

Oversight of the procurement process by IT and the Steering Committee should also be included as a practice.

Staff Feedback

- Finance – Lack of fully centralized mobile device billing, equipment purchasing, account management

Recommendations

- For commodity systems where several vendors provide very similar products, if three quotes are required by City policy, the City should consider creating an open RFP that does not specify a product manufacturer, but provides vendors with specifications that must be met.
  - Encourages increased vendor participation
  - Increases vendor participation, which often results in lower pricing and better products
- For complex systems, the City should consider procuring installation services from the vendor supplying hardware and software, or other third-party implementers.
  - "Complex systems" are defined as those costing more than $50,000 or requiring more than 80 hours of third-party implementation assistance
  - Reduces chance of finger-pointing for poor design, damaged product, or poor installation
- For highly complex or expensive systems, the City should consider including all components in the RFP: final design, installation, construction, testing, conversion, post-implementation support, and knowledge transfer.
  - Includes procurement of complex systems that may cross budget years because of cost considerations
  - All components should be practically considered and integrated
- For oversight, before approval of purchase of a complex system or a system requiring three bids. The IT Steering Committee should review any complex or highly complex system procurement and Finance/Purchasing should require the following of the IT Division:
  - A diagram of the system
  - High-level implementation plan (can be one page of bullet points)
  - A bill of material that includes all components, list price, quantity, discounted price, and ongoing maintenance
  - Costs associated with final design, installation, any construction, testing, conversion, post-implementation support, and knowledge transfer
  - A vendor cost matrix and assurances that all responses are truly comparable
  - A written recommendation

In general, the City should follow best practices for IT hardware and software replacement and procurements.

100. IT Cost Recovery (IT Budget Allocations)

The IT Division's role and execution of operational best practice is that of an internal support function to all departments and City system users and, in some instances, the City's constituents and the public. The departments, users, constituents, and the public are the customers of the IT Division.

IT Cost Recovery is the concept of funding the IT Division budget from all other departments based upon various metrics utilization and services provided. Examples could include number of users, computers, servers, network devices, phones, and time estimates for supporting specialized systems and applications.

In this way, IT Division costs can be spread equitably among departments, and the organization can gain a true understanding of the costs required to support the technology infrastructure and support services in order to make better management decisions.

Findings and Observations

- Some IT software costs, including maintenance and support costs are in Departmental budgets, not the IT budget.
- The IT function has developed an IT Cost Recovery mechanism, creating an Internal Service Fund.
  - The current cost recovery mechanism seems rather complicated.
  - The current City management has not reviewed the mechanism.

Recommendations

- Consider moving all IT-related costs to the IT budget to allow reporting and comparisons to peers related to IT spending.
- Review the existing IT Cost Recovery model:
  - Conduct a holistic review
  - Focus on creating a simple and transparent cost recovery mechanism
  - Assure that departments using services are charged proportionately
  - Assure that all project costs are attributed to the projects
  - Explore potential ways to track actual time spent at some levels
  - Communicate the cost recovery method and results to the departments during the next budget cycle

IT Security

IT Security refers to all security systems and practices, including disaster recovery, to protect systems and data.

101. Disaster Recovery Planning
102. Backups
103. IT Security Assessment
104. PCI Compliance
105. Records and Data Retention
106. Two-Factor Authentication
107. SCADA Security

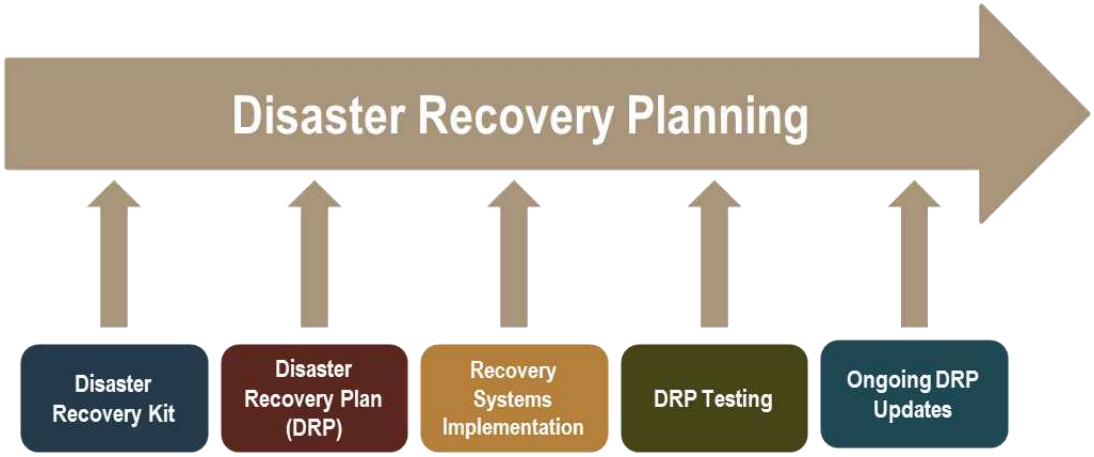
101. Disaster Recovery Planning

Findings and Observations

- A Disaster Recovery plan is not currently implemented.
- Based on a tour of City facilities, a good candidate was not found for a secondary data center for disaster recovery planning.
- Service Level Agreements (SLAs) are not in place for applications recovery in the event of a disaster.

Recommendations

- Develop a Disaster Recovery Plan and strategy.
- Consider two disaster recovery scenarios when developing strategies:
  - Loss of main computer room
  - Major disaster eliminating all area communications, the Administrative Offices, and IT infrastructure
- Consider cloud-based disaster recovery for non-public safety systems.
- Work with another city that uses RIMS CAD/RMS, and potentially enter into an agreement for mutual disaster recovery.
- Evaluate applications portfolio and determine the SLA for each application for restoration.
- Develop strategies for restoration of high-priority applications.
  - Begin to implement, based on strategy and application priority.
  - Test portions of plan each year.



Benefits

- Emergency preparedness compliance
- Improved communication
- Awareness of procedures
- Better diagnostics and problem identification
- Reduced risk and liability
- Faster, well-informed decision making
- Identification of business-critical functions
- Decreased recovery times and exposure to system failures
- Awareness of immediate actions

102. Backups

Findings and Observations

- The City utilizes Symantec Backup Exec 2012.
- Backups are made to tape and are taken off-site weekly.
- Backup media is not encrypted.
- The City does not have sufficient equipment to test a full system restoration.

Recommendations

- Encrypt all backup media.
- When procuring additional disk space, move to disk-based, on-site backup and cloud-based off-site backup for non-public safety data.
- For public safety data, investigate sister community or State secure backup locations.
- Add system time to all backup jobs.
- When possible, test full system restoration.
    - Test full restoration of a major database or system every six months, at a minimum.

103. IT Security Assessment

An IT Security Assessment was conducted over the summer of 2015. The focus of the IT Security Assessment is on the security of the IT infrastructure, based on penetration testing and other network investigation tools.

Findings and Observations

- The IT Security Assessment did not address policy or procedural issues
- Many of the issues identified by the IT Security Assessment have been mitigated
- Additional spending on security tools and operational safeguards will be required
- The City does not have a central system log or activity log storage and management solution
- The City does not maintain an Active Directory change management audit trail

Recommendations

- Utilize best practices for network security as a part of the network redesign.
- Implement other changes, as specified, to improve security.
- Redesign and implement IT security as a part of the Active Directory upgrade implementation.
- Procure a solution to provide centralized system logging and activity login.
- Procure a solution to provide Active Directory related audit trails.
- Develop security policies and procedures.
- Upon completion of the above recommendations, conduct a more global third-party IT Security Assessment.

Benefits

- Improved performance and efficiency
- Meets compliance requirements and industry best practices

104. PCI Compliance

Payment Card Industry (PCI) compliance can reduce credit card transaction fees by complying with the Payment Card Industry Data Security Standard (PCI-DSS) for credit and debit card transactions. The major card brands (Visa, MasterCard, American Express, Discover, and JCB) issued the PCI-DSS in an effort to enhance the protections in place against the theft of cardholder data and require all merchants and service providers who store, process, or transmit payment card information to comply with its provisions.

Findings and Observations

- Credit cards are accepted as a form of payment at the City.
- Credit card transactions are cloud-based.

Recommendations

- All payment card data should be separated from the City's data network.
- Budget for and conduct a PCI Assessment.
- Interim measures:
  - Ensure all payment card machines are PCI-compliant and only display the last four digits of a credit card number.
  - As a point of policy, prohibit emailing of credit card or personal identifying information (PII).
  - As a part of policy, prohibit storing credit card numbers either on paper or electronically.
  - Inventory all forms and ensure that none contain credit card numbers.

105. Records and Data Retention

Findings and Observations

- Electronic records retention durations should mirror paper electronic records and data retention durations.
  - As with paper records, timely destruction is important.
- A policy for email retention is not in place.
  - Emails are moved to archive folders after 90 days, due to space constraints.
- Records retention is not applied to backups.

Recommendations

- Inventory all forms of electronic records storage at the City.
- Implement an email archiving solution and migrate existing archive folders to the archive appliance.
- Develop procedures for electronic records retention for the various record types.
  - Implement procedure for records retention and subsequent destruction of electronic records.

106. Two-Factor Authentication

The need for both increased information sharing and access to government data networks creates new requirements to certify confidence in the identity of the individuals accessing information. To meet these new requirements, many agencies at all levels of government are using a strategy known as "advanced authentication" or "two-factor authentication". This approach supplements traditional username and password authentication with alternative forms of verification based on a user's physical characteristics (such as a fingerprint) or an object in the user's possession (such as a smart card or a token).

Findings and Observations

- Two-factor authentication is a network protection strategy based on the principle of defense-in-depth.
- Two-factor authentication is not currently implemented.
- Federal Bureau of Investigation (FBI) systems Criminal Justice Information Services (CJIS) Security Policy (Version 5.2) requires advanced authentication methods for remote access to all systems that contain Criminal Justice Information (CJI) beginning September 30, 2014.
- The CJIS mandate includes access to data from City police vehicles or any location that cannot be determined physically.
- Other systems that the City maintains that should use advanced authentication for remote access include electric, water, and wastewater utility supervisory control and data acquisition (SCADA), HVAC/building control systems, and IT system administration.

Recommendations

- Budget for and implement two-factor authentication for remote access to SCADA systems and for IT staff remote network access.

Benefits

- Enhanced security and compliance.

107. SCADA Security

Findings and Observations

- Remote access to the water utility supervisory control and data acquisition (SCADA) system is possible through the City network.
- Best practice requires two-factor authentication for remote access to SCADA.
- Best practice requires a firewall between an administrative network and a SCADA network.

Recommendations

- Conduct a thorough, comprehensive, and professional security audit of all SCADA systems, using guidelines provided by the U.S. Department of Energy and utilizing software such as the Cyber Security Evaluation Tool (CSET).
- Implement firewalls between all SCADA networks and the administrative network.
- Implement two-factor authentication (i.e., something you have, plus something you own) when providing remote access to SCADA.

Telecommunications

Telecommunication is an important tool for local government entities. It enables the ability to communicate effectively with constituants and deliver high standards of service. Telecommunication is also a key element in teamwork, allowing employees to collaborate easily from wherever they are located.

108. Phone System Redundancy

108. Phone System Redundancy

Findings and Observations

- The City's digital access to the Public Switched Telephone Network (PSTN) for its phone system is through Primary Rate Interface (PRI) connections.
- All City PRIs come in to City Hall to a single network switch, which creates a single point of failure for the phone system.

Recommendations

- As part of the redesign of the MAN and LANs, and implementation of the new converged network, implement additional PRIs connected at another City building on the MAN.

IT Staffing

IT Staffing can be one of the most important and critical areas of business management, especially in view of the impact IT decisions can have on the organization's productivity, budget, morale, and overall success.

109. IT Staffing

110. Enterprise Applications Support Specialist

109. IT Staffing

Findings and Observations

- Current IT Staff includes an Information Technology Manager, three technician positions, and a management analyst.
- Staff are doing an adequate job of providing day-to-day support and essential maintenance for IT systems.
- Staff training has been limited in recent years.
- It is very difficult to retain quality staff in Silicon Valley.
- The IT Manager is a hands-on position and provides all senior-level expertise for the organization.
- Overall staff and third-party expenditures will be higher over the next three years, because many infrastructure components must be upgraded and systems replaced.

Recommendations

- Develop training plans for IT staff (including the Manager)
  - Include one week of off-site training for each individual each year.
  - Microsoft server administration training is the recommended priority for the organization.
  - We believe that project management training is important for IT management personnel.
- Base IT Support needs will require the addition of the following staff:
  - A Enterprise Applications Support Specialist position for end-user support of the City's software applications
  - A Network/Systems Engineer position to augment network design, management, and security
- We recommend that the City develop a relationship with a third party who has strong expertise in enterprise systems implementation projects.

Benefits

- Increased institutional knowledge
- More completed projects
- More effective projects
- Increased anticipation and management of technology upgrades

110. Enterprise Applications Support Specialist

Findings and Observations

Local government agencies are increasingly understanding the direct correlation of effective applications utilization, organizational efficiency, and productivity gains. As described throughout this document, increasing applications utilization is key for the organization to do more with the same labor resources. Additionally, institutional knowledge too often leaves the organizations, through retirements and other employment separations, due to many processes and procedures being inadequately automated. Typically, agency goals of improved transparency and constituent services are also accomplished through various software programs that automate and streamline processes.

Most organizations have a blend of application/business analyst skill sets within the business departments and the IT department. However, we have yet to encounter a mid-sized agency with adequate resources to meet the organization's needs.

In order to meet these needs, IT departments are beginning to transform their overall department structures (over time) to take on more responsibility in hiring, training, retaining, and managing applications support services. This trend is being made possible, in some measure, by the streamlining of typical IT department operations through productivity and monitoring tools.

Typical applications support staff proactively handles: Help Desk needs related to business department applications, business process analysis, applications training, applications setup and configurations, ad hoc report writing, and database administration.

It is not unusual to designate applications support staff for the following major applications systems:

- ERP (Accounting, Finance, and People Management)
- Maintenance Management (Work Orders and Asset Management)
- ECMS (Electronic Content Management)
- Personnel Management
- Permitting
- Contact Management
- CAD/RMS & Citations

Staff Feedback

- HR – Need a system to automatically notify IT of terminated employees

Recommendations

- In the future, the organization should consider adding an application/business analyst position(s) to the IT Division to provide better support to department software programs that are the backbone of organization operations.
- Develop an Information Services Portfolio documenting IT roles and responsibilities related to all organization applications.
- Departmental staff should be provided with additional training in applications systems and report writing.
- Below is an example job description for an Application Support Specialist.

Enterprise Applications Support Specialist (SAMPLE)

Description

Under general direction, coordinate and manage activities related to the support, deployment, configuration, and usage of departmental applications systems. This includes assistance with applications system selection, implementation, project coordination, management of interfaces, applications setup and configurations, business process reviews, and custom reporting.

This individual will apply technical, communication, analytical, and problem-solving skills to the analysis of business processes for business applications software systems in order to improve productivity and efficiency in the organization's departments.

The position will be responsible for providing expert troubleshooting, resolution, and reporting on business applications issues.

Functional areas this individual will support may include finance, human resources, public works, building and safety, public safety, and water utility applications, as well as other associated functions.

Other related duties may be required, as assigned.

Duties

- Assist department subject-matter experts in the resolution of enterprise applications software-related Help Desk tickets.
- Work closely with department managers, division leads, and applications users, to document and/or design/redesign effective business processes and associated business applications, including projects that require effective implementation or reimplementation.
- Make recommendations on improvements to business processes and applications, with the goal of delivering enhanced service and outcomes (e.g., faster permit processing times, automating current manual or inefficient processes, etc.)
- Manage software improvements for various departments. These activities include procurement recommendations (e.g., cost-benefit analyses, software configuration and implementation/re-implementation, etc.); collaboration in testing configurations with personnel of affected departments; communication with internal customers, network and server administrators, and vendors to ensure that applications systems are being utilized to their full potential.
- Provide project coordination and oversight of multiple applications system projects.
- Assist with research of applications software products and services and coordinate feasibility studies for applications, software, and system products under consideration for purchase, and provide findings.
- Develop and deploy standards, methodologies, and best practices for applications deployment, business process improvement, applications interfaces, and report writing. Document procedures, applications interfaces, service-level agreements, and other methodologies related to applications systems.
- Collaborate in the testing of applications, and communicate with network and server administrators, vendors, and software developers to ensure quality assurance and fulfillment of contractual obligations.
- Develop, implement, and disseminate information on best practices for information technology and applications support.
- Compile and maintain an inventory of all applications software and system assets and their corresponding contracts and agreements, documenting system configurations and change management.

- Coordinate training, including oversight of training materials and user procedures and training curriculum; facilitate training sessions as necessary. Develop and maintain user documentation, implementation, and maintenance plans.
- Oversee the maintenance, support, and upgrade of existing software applications and systems; coordinate and communicate upgrades, enhancements and changes with vendors and internal customers.
- Maintain a secure information technology environment for software applications. Oversee applications security administration, update processes and schedules, notifying users of any potential service interruptions.
- Participate in integration, initialization, and interfacing between multiple systems, either through in-house or outsourced development, when required.
- Analyze technical literature for systems, and provide explanations understandable to end-users, often in the form of user manuals or training materials.
- Perform related duties as assigned.

Qualifications

The following generally describes the knowledge, ability, and education required to successfully perform the job duties.

Knowledge

- Windows operating systems and applications, including MS Office, MS SQL, Outlook, and other applications software
- Government business processes and the systems that support them; agency business systems may include: Financials, time keeping, utility billing, human resources, payroll, asset control systems, inventory, work orders, police dispatch, police records management, land management, building permits, utility billing, and citizen request management, among others
- Current technology goals, objectives, and technological trends
- Database knowledge, including a working understanding of MS SQL, SQL queries, report writing, applications interfaces, and data import/export methodologies
- Principles of project management, including training and vendor management
- Office procedures, methods, and equipment, including computers and applicable software applications such as word processing, spreadsheets, and databases.
- Principles and practices of applications system development, evolution, and product life cycles, including sustainability planning for applications systems
- Applications system security principles and best practices for ongoing system security, including related concepts of user applications roles/passwords, single sign-on, and Active Directory

Abilities

- Understand, plan, and coordinate business applications systems implementations and upgrades.
- Review and assist in evaluating the work of professional and support staff.
- Gather and document business requirements and processes.
- Communicate ideas, directions, and requirements clearly and concisely, both orally and in writing.
- Understand and communicate ideas in a technical, but user-friendly language.
- Perform duties appropriate to classified system privileges. Maintain professional handling of and protection of confidential and secure information.

- Commit to the highest standards of moral and business ethics, including organizational values.
- Work in a team environment, understanding the customer service and supplier model and how it is used in an internal support environment.
- Prepare clear and concise reports, including metrics, service-level agreement summaries, test plans, cases, and test scripts.
- Interpret and explain agency policies and procedures.
- Manage projects in a timely manner.
- Work with information system users under challenging conditions and short deadlines.
- Set priorities based on value to the organization.
- Operate office equipment, including computers and related word processing, presentation, spreadsheet, and database applications.
- Foster communications between the user community, project management, contractors, and all levels of management.

Education and Experience

Any combination of education and experience that would likely provide the required knowledge and abilities qualifies a candidate for the position. Typical education, training, and experience may include:

Education/Training

- Bachelor's degree from an accredited college or university, with major course work in computer science, information technology, business administration, etc.

Experience

- Three years as a business or systems analyst, supporting a broad range of departmental applications systems, including business process improvement, and applications administration, implementation, and upgrades
- Five years of general IT support or IT analysis (or similar) for a medium-sized organization supporting Microsoft applications
- One to three years in coordination and/or project management of applications implementation or upgrades.

CLIENTFIRST TECHNOLOGY CONSULTING

IT Master Plan Report

Implementation Resource Requirements Matrix

NOTE: Resource Type = Assessment, Design/Specification, Procurement, SME, Project Management, etc.

Initiative #	Initiative Name	Fiscal Year	Subject-Matter Expert/Project Management				Budget	Overall IT Master Plan Budget						Third-Party Role & Responsibility
			Staff	Supplemental Staff	Third-Party	Third-Party Optional	Third-Party Assistance	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021	Outlying Yrs (Capital Expend)	
Best Practices														
1	Return-on-Investment Considerations	2017				X	$5,000	$ 5,000						Hands-on workshop focused on ROI analysis for a limited number of projects and training staff how to conduct these types of analysis.
2	IT Governance	2017			X		$10,000	$ 10,000						IT Steering Committee training, to provide assistance in the creation and ongoing function of an IT Governance model. Includes all sample documentation types and facilitation/assistance for 6-12 months.
3	COBIT							n/a	n/a	n/a	n/a	n/a		
4	ITIL							n/a	n/a	n/a	n/a	n/a		
5	Applications Management Best Practices	2017			X		$5,000	$ 10,000						Workshop/training and assistance in identifying software module roles and responsibilities for major application systems, as well as assistance in developing a pro-active IT Dept. Appl. Support methodology and tools for tracking and management of departmental application support needs.
6	Applications and User Licensing Inventory	2017				X	$5,000	$ 5,000						Assistance in assessment of needs and planning.
7	User Training and Support	2017-21			X		$50,000	$ 25,000	$ 50,000	$ 50,000	$ 50,000	$ 50,000		Assistance in assessment of needs and planning.
8	Training Room	2017	X					$ 12,000						
9	Software Selection Best Practices							n/a	n/a	n/a	n/a	n/a		
10	Project Planning and Implementation Best Practices	2017				X	$5,000	$ 5,000						
11	Maintaining Software Updates							n/a	n/a	n/a	n/a	n/a		
12	IT Project and Services Portfolio	2017				X	$15,000	$ 15,000						Developing and documenting IT Dept. roles and responsibilities for all systems and create service-level agreements for user-support, per ITIL Best Practice.
13	Sustainability Planning	2018				X	$5,000		$ 10,000					Joint effort with City playing the predominant role and the 3rd Party assisting with the structure, components and mapping of sustainability processes.
14	Cloud Computing							n/a	n/a	n/a	n/a	n/a		
15	Centralized Land and Parcel Management							see below	see below	see below	see below	see below		
Applications & Departmental Systems														
16	Enterprise Resource Planning (ERP) Replacement	2017-20	X	X	X		$450,000	$ 85,000	$ 1,000,000	$ 500,000	$ 250,000			Needs Assessment with requirements (Features/Functions), Business case to move from Cayenta, ADP, Lucity Tidemark, HdL and other existing system to a new ERP, vendor research, RFP development, proposal analysis, demonstration management, shortlist and finalist workshops, contract negotiations assistance. Implementation Project Management and Support.
17	Project and Grant Accounting		X		X		Included with ERP (Init #16)							Included with ERP (Init #16)
18	Contract Management		X		X		Included with ERP (Init #16)							Included with ERP (Init #16)
19	Cashiering Needs Assessment and Replacement		X		X		Included with ERP (Init #16)							Included with ERP (Init #16)
20	Work Orders/Maintenance and Asset Management System			X	X		Included with ERP (Init #16)							Included with ERP (Init #16)
21	Fleet Management		X		X		Included with ERP (Init #16)							Included with ERP (Init #16)
22	Land Management System Replacement			X	X		Included with ERP (Init #16)							Included with ERP (Init #16)
23	Electronic Plan Submittals and Reviews		X		X		Included with ERP (Init #16)							Included with ERP (Init #16)
24	Human Resources System Improvement or Replacement			X	X		Included with ERP (Init #16)							Included with ERP (Init #16)

CLIENTFIRST TECHNOLOGY CONSULTING

IT Master Plan Report

Implementation Resource Requirements Matrix

Initiative #	Initiative Name	Fiscal Year	Subject-Matter Expert/Project Management				Budget	Overall IT Master Plan Budget						Third-Party Role & Responsibility
			Staff	Supplemental Staff	Third-Party	Third-Party Optional	Third-Party Assistance	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021	Outlying Yrs (Capital Expend)	
25	Employee Self-Service		X		X		Included with ERP (Init #16)							Included with ERP (Init #16)
26	Time, Attendance, and Accruals Tracking			X	X		Included with ERP (Init #16)							Included with ERP (Init #16)
27	Performance-Evaluation Software		X		X		Included with ERP (Init #16)							Included with ERP (Init #16)
28	Applicant Processing		X		X		Included with ERP (Init #16)							Included with ERP (Init #16)
29	Training and Certification Management Software		X		X		Included with ERP (Init #16)							Included with ERP (Init #16)
30	Staff Scheduling System			X	X		$5,000							Needs assessment along with tools and assistance to complete a process to select and implement a Citywide scheduling system
31	Project and Construction Management	2018	X						$ 80,000					
32	Parks and Recreation Software Replacement (eGov)	2018-20			X		$65,000		$ 75,000	$ 150,000	$ 100,000			Needs Assessment with requirements (Features/Functions), Business case to move from eGov, vendor research, RFP development, proposal analysis, demonstration management, shortlist and finalist workshops, contract negotiations assistance. Implementation Project Management Oversight and Assistance and Support.
33	Citywide Facilities Scheduling/Events Calendar		X											
34	Childcare Management System		X											
35	Electronic Content Management System (ECMS) Replacement	2018-21			X		$75,000		$ 75,000	$ 200,000	$ 75,000	$ 75,000		Needs assessment of future EDMS and related components, including Legislative/Agenda Management, Media Management (potential replacement of Granicus), and integration with new ERP system and other critical City systems. vendor research, RFP development, proposal analysis, demonstration management, shortlist and finalist workshops, contract negotiations assistance. Implementation Project Management Oversight.
36	Agenda Creation and Management Software		X		X		Included with ECMS (Init #35)							Included with ECMS (Init #35)
37	Legislative Management		X		X		Included with ECMS (Init #35)							Included with ECMS (Init #35)
38	Granicus Media Management Assessment (Replacement)		X		X		Included with ECMS (Init #35)							Included with ECMS (Init #35)
39	Large-File Sharing Tool	2019-20	X							$ 2,500	$ 1,500			
40	Video Capture and Editing (Video Events and Other)	2020	X								$ 45,000			
41	Photo Management and Storage Software	2020	X								$ 30,000			
42	Publishing Software Consolidation	2021	X									$ 15,000		
43	Real-Time Utility Usage (Automatic Meter Reading-AMR)	2020-21											$2,500,000	
44	Website Improvements	2018-19			X		$35,000		$ 20,000	$ 15,000				
45	Notifications System (Push/Social Media/Text)	2018-21	X						$ 15,000	$ 15,000	$ 15,000	$ 15,000		
46	Develop GIS Master Plan	2017-18			X		$60,000	$ 40,000	$ 20,000					
47	Department-Centric / GIS Self-Service		X					$ 15,000	$ 30,000					
48	RIMS (CAD/RMS) Gap Analysis and Application Maximization	2018-29			X		$60,000		$ 40,000	$ 20,000				
49	Alarm Tracking and Billing Software		X											
50	Ticket Writer Software Replacement (Duncan to TDS)		X											
51	Officer Radio Transmission Identification		X											
52	Replace MDC's with RIMS Mobile/GIS System		X											
53	Tow Company Billing System	2020-21	X								$ 2,500	$ 15,000		

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54	FirstNet Preparation Planning	2019-20	X							$ 1,500	$ 1,000			
Other Applications and Departmental Systems														
55	Police Audiovisual Format Conversion Tool	2018-19	X						$ 1,000	$ 500				
56	Panic Button	2017-18	X					$ 1,500	$ 500					
57	Penal Code/Vehicle Code Reference Software		X					See above	See above	See above	See above	See above		
58	Portable Wireless Camera for Surveillance	2019-20	X							$ 1,000	$ 1,000			
59	Wireless PA Radio PA/Sound System	2019-20	X							$ 3,000	$ 1,000			
60	Instant Messaging	2019-21	X							$ 12,000	$ 12,000	$ 12,000		
61	PA Announcements	2018	X						$ 20,000					
62	Parking Sensors and Management	2021											$1,500,000	
63	Constituent Satisfaction Surveys	2019				X	$5,000			$ 10,000				
64	Laptop Borrowing Program	2020-21	X								$ 3,000	$ 2,000		
65	Library Subscription Provider Statistics	2019-20	X							$ 4,000	$ 3,000			
66	HVAC Zonal Climate Control System	2020-21	X								$ 6,000	$ 3,000		
Gov 2.0														
67	Citizen Request Management (CRM)		X	X	X		Included with ERP & Land Management (Inits #16 & #22)	See Above	See Above	See Above	See Above	See Above		Included with ERP & Land Management (Inits #16 & #22)
68	Online Payments, Transactions, and Services		X					See Above	See Above	See Above	See Above	See Above		
69	Video/Web Conferencing	2019-21	X							$ 1,800	$ 3,600	$ 6,000		
70	Council Chambers Audiovisual Systems		X											
71	Conference Room Audiovisual		X											
72	Social Media Policy and Procedures	2017	X					$ 7,500						
73	Mobile Computing		X					See Above	See Above	See Above	See Above	See Above		
74	Newsletter		X					See above	See above	See above	See above	See above		
75	Dual Monitors		X					n/a	n/a	n/a	n/a	n/a		
IT Infrastructure														
76	IT Computer Room and Teledata Closet Improvements	2017			X		$50,000	$ 220,000						
77	Wireless Network	2017				X	$25,000	$ 158,400						
78	Internet Bandwidth	2019-21	X							$ 94,600	$ 24,000	$ 24,000		
79	Electronic Mail (Exchange)	2017-21				X	$15,000	$ 30,000	$ 4,000	$ 4,000	$ 4,000	$ 4,000		
80	Enhanced Internet Security and Connectivity (DMZ)	2017-21	X					$ 2,500	$ 2,500	$ 2,500	$ 2,500	$ 2,500		
81	Remote Access Upgrade	2017				X	$10,000	$ 20,000						
82	Network Redesign	2017-18				X	$40,000	$ 275,000	$ 100,000					
83	Core Switch Replacement	2017				X	$25,000	$ 220,000						
84	Power Distribution	2017-18	X					$ 15,000	$ 7,500					
85	Virtual Server Migration	2017-18				X	$40,000	$ 101,200	$ 50,000					
86	Storage Area Network (SAN) Upgrade	2017-18, -20				X	$25,000	$ 163,240	$ 100,000		$ 50,000			
87	Technology Support for the EOC	2017-19	X					$ 5,000	$ 25,000	$ 25,000				
88	Redundant CAD/RMS System	2019	X							$ 25,000				
89	Computer Upgrades (Windows XP & Office)	2017		X			$12,500	$ 30,000						
90	Video Camera and Surveillance System (Citywide Standard)	2017-21				X	$35,000	$ 115,000	$ 50,000	$ 50,000	$ 25,000	$ 25,000		
91	Secure Managed Access (Wireless/Keyless Security)	2018-19				X	$15,000		$ 50,000	$ 25,000				

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IT Operations														
92	Help Desk Ticketing System	2017				X	$6,000	$ 6,000						
93	Mobile Device Management	2018				X	$5,000		$ 5,000					
94	Network Management Tools (Alerts/Alarms)	2018-19				X	$15,000		$ 25,000	$ 25,000				
95	IT Support Metrics	2018				X	$6,000		$ 6,000					
96	Desktop Management	2017-18				X	$6,000	$ 11,000	$ 6,000					
97	IT Automation Tools (Patch Management)	2018				X	$6,000		$ 6,000					
98	IT Policies and Procedures	2017				X	$7,800	$ 7,800						
99	IT Procurement Practices							n/a	n/a	n/a	n/a	n/a		
100	IT Cost Recovery (IT Budget Allocations)							n/a	n/a	n/a	n/a	n/a		
IT Security														
101	Disaster Recovery Planning	2019				X	$15,000			$ 15,000				
102	Backups	2017-21				X	$25,000	$ 75,000	$ 20,000	$ 20,000	$ 20,000	$ 20,000		
103	IT Security Assessment	2019			X		$25,000			$ 25,000				
104	PCI Compliance	2019-20			X		$10,000			$ 10,000	$ 15,000			
105	Records and Data Retention	2020			X		$18,000				$ 18,000			
106	Two-Factor Authentication	2017	X					$ 15,000						
107	SCADA Security	2017	X					$ 11,000						
Telecommunications														
108	Phone System Redundancy	2018-21	X						$ 35,000	$ 2,000	$ 2,000	$ 2,000		
IT Staffing														
109	Network/Systems Engineer	2017-21						$ 182,000	$ 187,460	$ 193,084	$ 198,876	$ 204,843		
110	Enterprise Applications Support Specialist	2017-21						$ 140,000	$ 144,200	$ 148,526	$ 152,982	$ 157,571		
							$1,292,300	**$2,039,140**	**$2,378,610**	**$1,651,010**	**$1,111,957**	**$632,914**	**$4,000,000**	

Other														
	Appl. Support Methodology & Training				X				$5 - 7,500					Can be included at no cost as part of the IT Governance and Applications Best Practices Engagement