Report for

Information Technology Master Planning

September 2018

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Engagement Purpose and Background

Information Technology Master Plan Objective

The objective of the Master Plan includes developing and articulating a vision for the effective use of technology to support the work of the City. The Master Plan identifies information technology strategies that have a positive return on investment and improve public safety or resident service.

Over the past few years, the term "IT Strategic Planning" gave way to a new term called "IT Master Planning". The IT Master Plan deliverables include strategies, as well as tactical and actionable IT initiatives.

The following plan is expected to serve as a guide the IT Team and City Management over the next five years in planning, procuring, implementing, and managing current and future technology investments. Further, the plan will assist in the managing departmental resources related to information technology services within the City and provided to the public . 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 City Council and 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 for the development of this IT Master Plan. This process 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.

Project Initiation and Technology Inventory
- Set Expectations
- Technology Inventory
- Review Documentation

Needs Assessment Workshops
- Non-IT Department Workshops
- IT Infrastructure, Operations and Staffing Review
- Preliminary Documentation

Research and Preliminary Plan Development
- Assess Strengths and Weaknesses
- Define Strategies, Goals and Objectives
- Develop Preliminary Initiatives and Staffing Recommendations
- Research Alternative Solutions
- Preliminary Budgets and Prioritizations

Planning and Prioritization Workshops
- Project Sponsor and IT
- GIS
- Project Committee
- Executive Management
- Cost/Benefit, ROI Analysis

Final Report and Presentations
- Develop Final Report and Leadership Presentations

Current Information Technology Environment Summary

Summary IT Environment

City of South San Francisco IT Environment Summary City Hall	
IT Staff (Full-time Equivalent includes contractors- FTE)	7
City Employees (FTE)	969
User Log-Ins	677
PC's	624
Laptops	202
Mobile Devices (e.g., Tablets, Smart Phones, Cell phones, etc.)	152
Telephones	422
Cellular/Smart Phones	116
Physical Servers	15
Virtual Servers	123
Network Devices	275
Platforms	Windows, VMware
Databases	MS SQL, MS Access
Citywide software applications/modules	Approx. 175
Avg. Reported Help Desk Tickets per Week	77
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	Unknown

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 continuing to improve the IT environment. The limited number and cost of the technical initiatives outlined in the plan compares very well with other recent planning engagements we have completed.

While additional IT infrastructure work efforts are required, work-to-date allows the plan to focus on business process and resident-facing improvements. The telecommunications system and some of the enterprise business applications, which are the backbone of departmental operations and citizen services, are out of date, nearing end of life, and/or underutilized. Staff training has not kept up with new software releases or employee turnover.

The City has historically selected application systems on a department-by-department basis. This has led to a significant number of manual interfaces between departmental systems. These interfaces are often paper based manual processes or in "shadow systems" and require significant staff time. Continuing with departmental 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 integrated 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 and improving the approach to business application utilization and business processes. This increases the need to improve methods to better utilize enterprise business applications and sustaining 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 (i.e., 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 South San Francisco's *IT Spending versus Recommended Best Practices* and a municipal benchmark of 42 agencies.

South San Francisco FY 17-18	South San Francisco FY 18-19	Recommended Low	Benchmark	Recommended High
2.29%	2.57%	2.5%	2.82%	4.5%
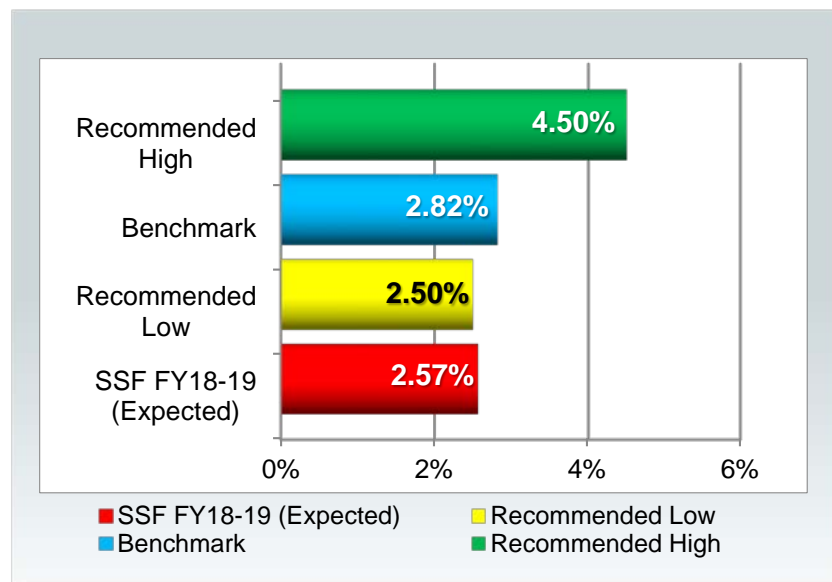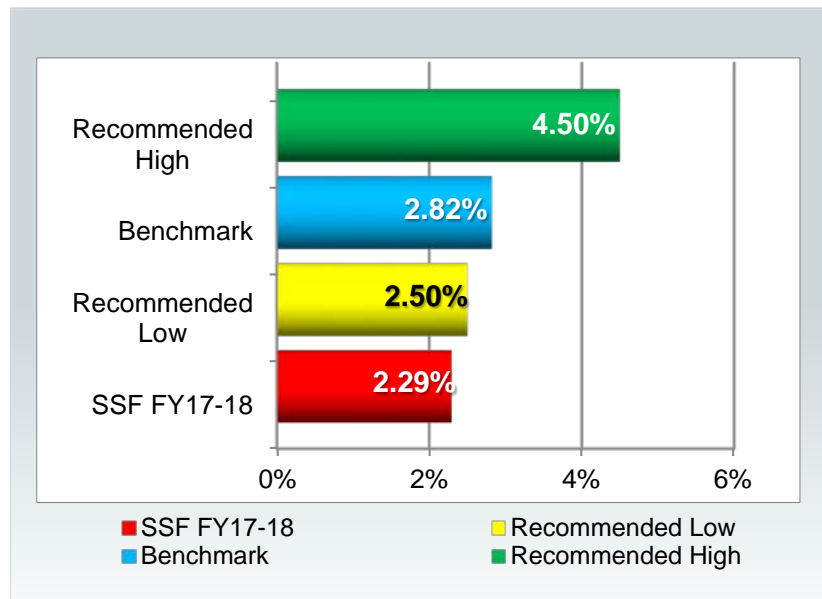
The 2015/2016 adopted budget for the general fund was $48,168,045, and the IT expenditure budgets total for the same period was $ 1,132,313. The municipal spending benchmark range from the survey was between 1% and 8%, with an average of 2.82%. The percentage of IT expenditures versus operations budgets at South San Francisco is below the recommended low and the average benchmark for other municipalities. The 2015/2016 budget period is the first

year of the City 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 South San Francisco'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 South San Francisco	Municipality Benchmark	Recommended Best Practice
Logins	97	69	75
Servers	20	8	10
Computers/Laptops	135	59	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. The ratio of computers and laptops to staff are significantly higher than peer organizations partly because some staff have multiple supported devices. As IT moves to a model that is closer to one device per person, the ratio will improve. In addition, a full-time equivalent contractor reports to the Police Department instead of IT, further distorting the numbers.
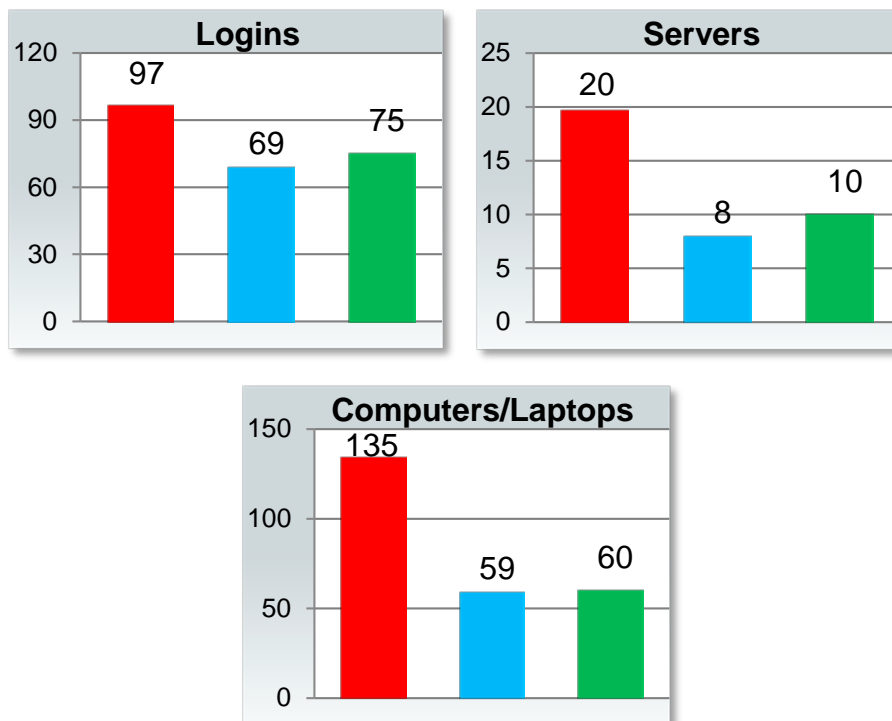
IT Strategies, Goals, and Objectives

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 Analytical Capabilities

Goals and Objectives

- Expand IT staff to include additional Business Analyst positions
- Introduce application management best practices
  - Identify key roles and responsibilities for core business applications
  - Increase user application training
  - Provide key departmental personnel with business process and report writer training
- Conduct process reviews and document application feature/function requirements to identify automation opportunities and streamline processes, reducing 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

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

Goals and Objectives

- Follow a system selection best practices approach to choose an ERP system that best fits the City's needs and replaces the following core application suites:

  - Financials (Eden Systems from Tyler Technologies)
  - Work Orders / Inventory Warehouse Management (CityWorks)
  - Fleet Management (CollectiveData)

- The ERP system should also include critical integration/interfaces including but not limited to the following:

  - Community Development/Land & Licensing Management (TRAKiT)
  - Human Resource Management and Payroll (PDS)
  - Parks and Recreation (CivicRec)

- 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
- Focus on reducing the number of disparate departmental focused systems in an effort to eliminate the need for custom interfaces

Move Towards a Citywide GIS/Geospatial Application Perspective

Goals and Objectives

- Create a GIS Master Plan to identify GIS priorities and resource requirements
- Move to a centralized GIS data model for all City departments and consolidate GIS system activity
- Leverage GIS integration with the City's systems to better utilize these core application
- Leverage GIS as a repository for geo-spatial data and Smart City application data
  - Utilize ERSI's analytical capabilities to inform reporting and decisionmaking

Ensure IT Governance

Goals and Objectives

- Formalize an IT Steering Committee and Governance mechanism
  - Monitor the plan and recommend adjustments on an annual basis
  - Collaborate on projects and initiatives
    - Focus on applications integration across departments
    - Identify key business process issues and improve
  - Establish training goals and develop analytical skills
  - Act as a sounding board for management and staff

Develop a Sustainability Plan

Goals and Objectives

- Develop a sustainability plan to identify the total ongoing cost of technology at the City
  - Expand existing capital replacement planning to include all IT infrastructure items
  - Document all applications-related costs, including maintenance, upgrades, and training
  - Understand Total Cost of Ownership for new applications or Smart City initiatives
    - Update Sustainability Plan to include TCO of new initiatives

Develop Smart City Initiatives

Goals and Objectives

- Consider a citywide broadband initiative to increase resident broadband penetration
- Investigate cost and benefit of fixed-point license plate reader technology at key City entrances and exits
- Expand use of video surveillance to improve public safety
- Consider use of sensors in downtown area to improve parking and traffic flow as housing density increases
- Utilize Best Practices

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
- Move to Online Planning Application and Electronic Plan submittals.
- Implement or improve:

  - Online Permits
  - Online Permit Inspection Requests and Scheduling
  - Online Code Enforcement Complaints
  - Online Licensing Renewals
  - Online Park and Recreation Program Registration and Payment
  - Citizen Request Management (CRM)

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

Information Technology (IT) Principles

Vision / Mission Statement

The City of South San Francisco 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 *Information Technology Current State Assessment* of the report.

IT Initiative Categories

The master planning process resulted in 63 initiatives. Over the last few years, our IT Master Plans have included a range of 60 to 130 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
SMART CITIES AND GOV 2.0	TELECOMMUNICATIONS
IT INFRASTRUCTURE	IT STAFFING

Key Initiatives

The following are a list of Key Initiatives that were identified as a part of the planning process. These initiatives could also be considered high priority. The Key Initiatives listed below either provide immediate ROI, are a long-term building block for the success of the plan, or mitigate risk. 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 also be noted that these 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 Key?
IT Governance	3	In the past, the City has made application system software selections on a department-level basis. The IT Master Plan and the recommended ERP Replacement, GIS Master Plan, and Smart Cities initiatives will a more holistic view of City technology needs and increased interdepartmental; coordination. IT Governance provides a vehicle for departments to work together to manage the IT Master Plan and coordinate the recommendations within.
Enterprise Resource Planning (ERP) Replacement	17	This is the core system for the City. The existing ERP system is reaching the end-of-support and must be replaced. Due to limitations in Eden, other ancillary systems and shadow systems have been acquired or developed that do not interface or integrate. Many of these shadow systems 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 and maintain the City's ERP application.
Work Order (CityWorks) Improvement or Replacement	18	The City currently uses CityWorks as their main system for work order management. Many key work order business processes continue to be manual. Staff also wish to utilize the application to support additional business processes. We believe the best course of action will be to consider incorporating work order management functions into a replacement ERP system. Consolidation of work orders into ERP may result in significant long-term savings related to application support and integration.
Inventory/Warehouse Management	19	South San Francisco has limited inventory control capabilities currently. Other agencies have experienced significant savings through improved inventory control. This item was also included in the City's most recent audit as a finding. We recommend implementation of a controlled inventory management process that is integrated with work orders to improve both inventory control and cost management.
Personal Computer Assignment and Management	31	In some cases, analyst and supervisory staff have been assigned desktop, laptop and/or tablets for their use. We believe significant productivity improvements and cost savings will result from consolidating users to a single portable computing device.

IT Initiative	Initiative Number	Why Key?
Smart Cities	37	Smart City initiatives incorporate hold the promise of significant improvement to resident quality of lif through current and next generation systems that increase public safety, automate time-intensive tasks and provide data for improved decision making. Areas of benefit range from improved parking to enhanced environmental sustainability.
Sustainability Planning	38	While the IT Master Plan outlines ambitious goals for technology at South San Francisco, fiscal responsibility will remain a central goal for the responsible administration of City government. Developing a plan that outlines the long-range costs of technology, including maintenance, upgrades, capital replacement, and training can inform the long-range budget and planning processes of the City and provide insights into the overall cost of technology.
City-wide Broadband / High Speed Internet	41	Studies show that the expanded availability and use of high speed internet can have significant quality of life implications for residents. High speed internet can result in improved health care outcomes and lower levels of unemployment. Some constiituents within the City are underserved and would welcome additional high speed internet alternatives. Public safety and City facilities communications would also benefit from improved broadband networking alternatives.
Computer Equipment Replacement Plan	42	Historically, the City has managed the replacement of desktop, laptop, and mobile data computers well. The City has not maintained a computer equipment replacement schedule for all infrastructure components. These include network devices, telephone systems, video surveillance systems, and wireless. All technology infrastructure components have a limited lifespan and must be upgraded and replaced on a regular basis. Planning for replacement is a key component of Sustainability Planning as outlined above and budget management.
VoIP Phone System Upgrade	55	The existing phone system is obsolete and is no longer supported. Over time, the cost of maintaining the current system will consintue to escsalate. A current generation phone system can support improved constituent call handling, easing the interaction between resident and staff. Staff productivity will be enhanced through improved integration between the phone system and common office software.
Develop GIS Master Plan	59	GIS and spatial maps are the future and will drive many of the City's operations, including Smart City initiatives in the future. 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 Smart City, address management, geospatial, and mapping needs.

| IT Initiative	Initiative Number	Why Key?
Business Analysis and Project Management Skillset Needs	63	The IT function has sufficient technical staff to fulfill its mission. However, the IT Manager currently has four primary areas of responsibility: • IT Management • Tier 3 Technical Support • Business Analyst • Project Manager Successfully implementing this plan will require additional business analyst and project management skills beyond those that are currently available. There are many manual processes in place that could be automated without significant investment in equipment of software. We believe automation will result in a significant return on investment and improved services.

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
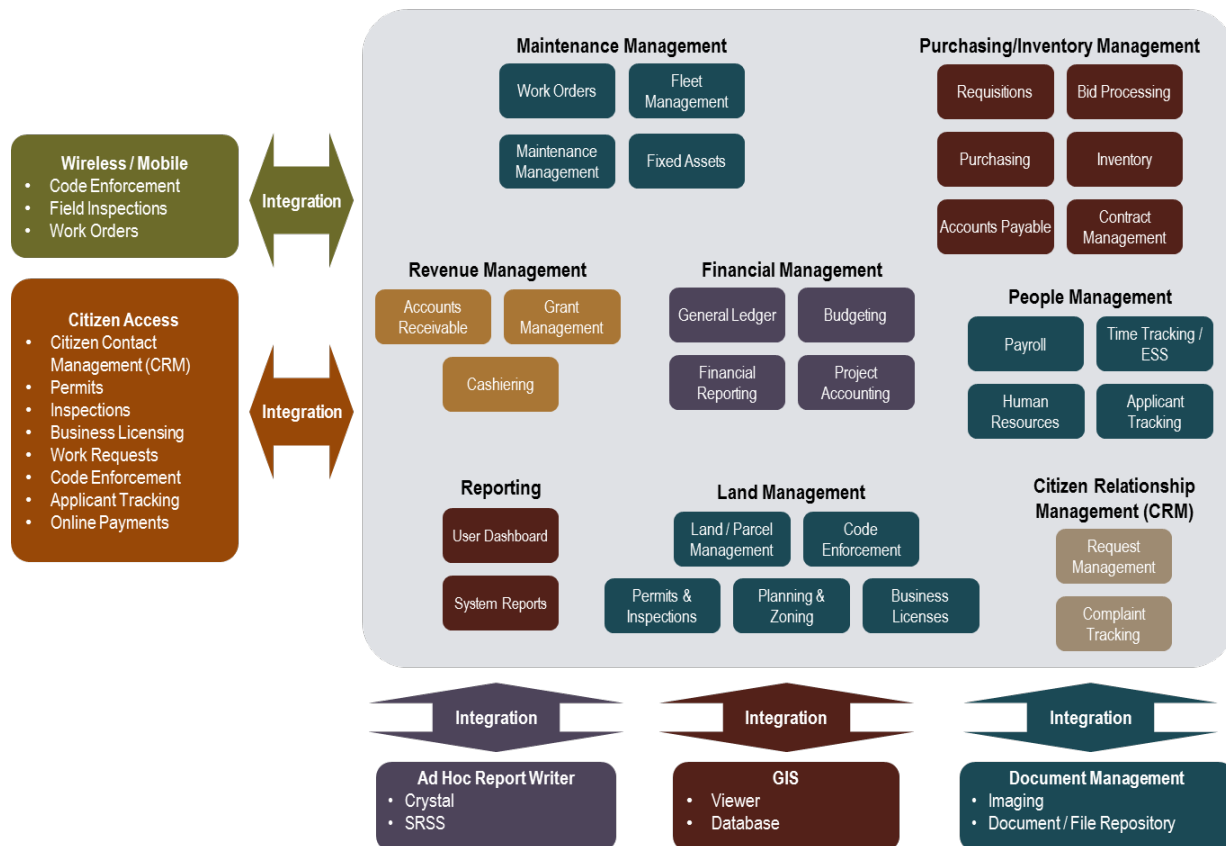
Financial and People Management

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
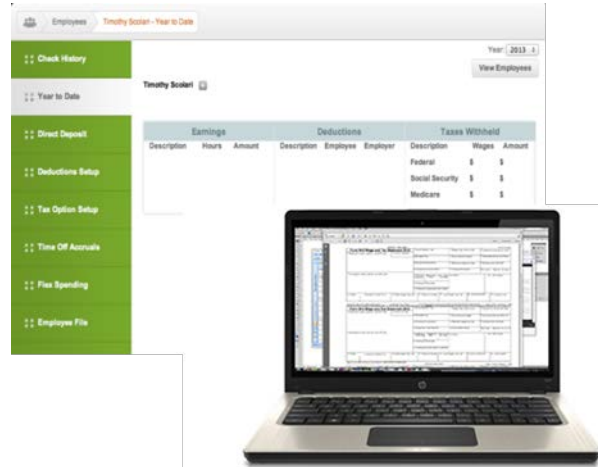
Reporting

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
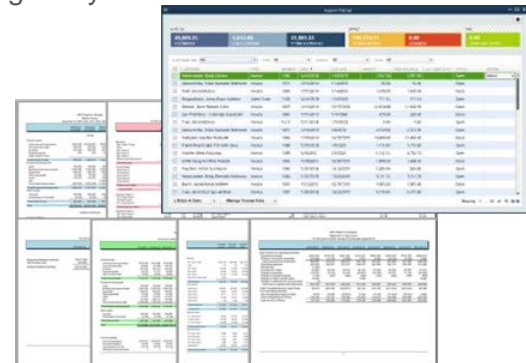
Individual User Dashboards

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
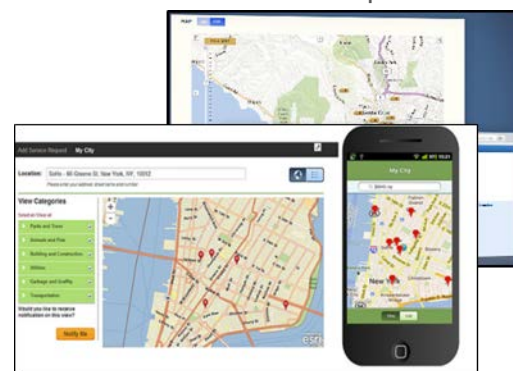
Land Management

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 completing infrastructure and telecommuications upgrades. Additional staff training and preparation for an ERP selection and implementation are also required to meet the needs of 21st Century Smart City. Software application improvements should also be considered, and the City should proceed after a ranking and sequencing the key initiatives identified in the Plan.
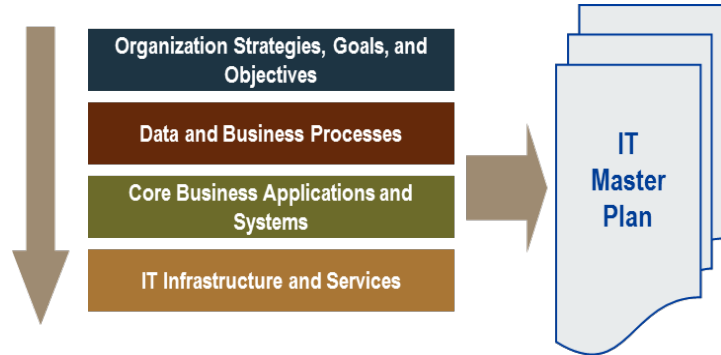
IT must work to position itself in the following ways:

IT Infrastructure – Follow best practices in performing a telephone system replacement, completing infrastructure upgrades and disaster recovery planning projects.

IT Staffing – City IT management has many responsibilities; the addition of a Business Applications Analyst will allow IT leadership to focus their efforts on application and Smart City initiatives that are critical to the long-range success of the City and this plan. The addition of Business Applications Analyst and project management skills will provide long-term benefits and increase application utilization and organizational productivity.

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 Eden and potentially the CityWorks work order system will logistically require three 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.