

Enterprise Resource Planning System Evaluation

CITY OF PALO ALTO, CA | NOVEMBER 24, 2014

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1 ERP Evaluation

1.1 PROJECT OVERVIEW AND EXECUTIVE SUMMARY

1.1.1 PROJECT BACKGROUND

The City of Palo Alto, CA (the “City” or “Palo Alto”) has an estimated 65,000 residents and is located in Silicon Valley in the San Francisco Bay Area of California. The City’s FY 2014 operating budget is \$447 million and the City employs over 1,000 full and part time staff. Palo Alto is a full service city providing administration, planning, code enforcement, public works, water/wastewater/gas/electric/fiber utility, parks and recreation, public safety police and fire services. The City is also the home to Stanford University, a world renowned Pac-12 conference research institution.

The City currently utilizes the SAP ERP system to support its major Finance, Human Resource and Utility Billing processes. The City’s history with SAP began in 2002 when the City selected SAP as its preferred vendor for an Enterprise Resource Planning (ERP) system with the purpose of integrating various business processes within the City and to pave the path for the City to moving toward the direction of electronic Government. In fiscal year 2003, the implementation of the SAP Enterprise Central Component (ECC 6.0), SAP core modules were completed and the SAP system has been running in the City since 2003, supporting Accounting, Finance, Purchasing, Project Management, Plant Maintenance, Budgeting, Payroll, Human Resource Management, and Service Order Management.

In 2009, the City completed a major upgrade to the SAP ERP system, which also replaced the former utility billing system (Banner) with the implementation of the SAP IS-U module, Customer Relationship Management (CRM), Utilities Customer Electronic Services (also known as My Utilities Account customer portal) and Business Intelligence systems (BI). Both business and technology needs have changed dramatically since the current ERP solution was selected and implemented. Therefore, the City desired to conduct a comprehensive evaluation to determine a solution to reduce IT application and infrastructure support costs, improve flexibility, increase user friendliness and intuitiveness of system, facilitate further automation of business processes, and improve quality and reliability of information for decision making.

1.1.2 PROJECT SCOPE

The City engaged Plante Moran to perform a comprehensive assessment of the City’s SAP ERP environment and identify key strategic options and recommendations. In addition to the core SAP related functions the project included the identification and review of major best-of-breed and third-party systems used by the City. The City requested that the evaluation provide the following:

- GAP analysis to identify deficiencies in the current system
- Identify effectiveness of current system at meeting business needs
- Evaluation of hardware
- Benchmark maintenance/support costs
- Determine if city would benefit by soliciting proposals for alternative ERP solutions

Specifically, the project scope included conducting project management tasks, reviewing documentation, conducting interviews and assessing the City's technical environment to develop this ERP evaluation for the following functional areas:

Administrative Services

- Budget
- Payroll
- Store
- Accounting
- Purchasing

Utilities

- Billing Management
- Work Management
- Business Intelligence
- Device Management
- Financial Contract Accounts
- Utilities Customer Electronic Services
- Customer Service and Customer Relationship Management

People Strategy & Operations

- Processes and Management

Public Works

- Refuse and Recycle Billing

Information Technology

- Technology Strategy and Roadmap

All other departments (City Attorney, City Auditor, City Clerk, City Manager, Community Services, Planning & Community Development, Information Technology, Library, Police and Fire)

- Budget/Position
- Time Entry
- Procurement

1.1.3 PROJECT APPROACH

The following chart illustrates the approach that was taken in performing the City's ERP Evaluation:



The project was conducted using a participative and inclusive approach with significant input from the City management and staff to ensure accuracy, completeness, and ownership of the resulting recommendations. Participation was obtained through the following activities:

- Establishing a Project Sponsor to maintain the project vision, act as a project champion, provide a strategic perspective, and to remove project roadblocks when necessary.
- Defining a Project Manager to ensure prompt and clear communication with the City department staff, manage project activities, ensure project deliverables were reviewed by the appropriate City staff, and to provide progress updates to the City management and other interested stakeholders.
- Conducting a project kick-off meeting and building awareness around the project.
- Facilitating multiple project management status meetings to manage project activities and provide status updates.
- Conducting interviews with the City departmental end users to evaluate current systems and business processes. Departmental management was encouraged to participate and invite team members.
- Collection and review of numerous documents provided by the City, as well as completed questionnaires by the departments.

- Soliciting input from the participating Departments that included the evaluation of the following items:
 - Identification of current systems
 - Duplicate entry / re-keying of information
 - Issues with / shortcoming of current systems
 - Strengths of existing systems
 - Unused features / functionality of SAP
 - Opportunities to interface systems
 - Unique City business rules
 - Vendor interaction
 - Current technology project initiatives / Future technology projects
- Requesting and collecting data which was used to develop a total cost of ownership (TCO) analysis.
- Developing this ERP evaluation

The overall goal for implementing new technology not only focuses on the technology itself, but also aims to enhance existing business processes performed by individual departments across the City. Technology is intended to enhance departmental business processes by:

- Making them more efficient
- Making them more effective
- Improving decision-making
- Providing enhanced customer service to both internal and external customers
- Improving access to information
- Streamlining processes to reduce costs.

The overall goal of this ERP evaluation was to define a future course of action for the City's SAP investment and related applications and shadow systems. The approach utilized for collecting information included interviews with primary process and systems owners, IT staff, and the City department users regarding the existing technologies and processes.

1.1.4 SUMMARY OF OBSERVATIONS

While the current SAP environment supports the daily needs of the City and supports the ability of end users to accomplish their responsibilities at a basic level, the current system structure has left the City with many challenges. The following points summarize the key functional weaknesses regarding the systems and processes that support financial management, human resources, payroll and other City administrative functions.

Inefficiencies Due to Redundant Data Entry and Manual Processes

The existence of multiple standalone systems and reliance on desktop applications like Excel and Access inevitably results in inefficient business processes. Disparate information systems result in redundant data entry efforts because information is taken out of one system and entered into another. Even when data can be directly downloaded via automated means, the organization of data and formatting requires significant effort. In addition, there are still a host of manual processes that support certain business functions. In a number of cases where standalone systems and desktop applications

are now being used it is possible that unused modules of the SAP system could support these functions.

Lack of an intuitive user interface

The City's current financial, human resources and utility billing systems do not provide end users with an intuitive and integrated experience across common transactions. With few exceptions, end-users across all business areas stated that the current system was cumbersome and not user-friendly. The systems lack sufficient querying tools and most departments rely on the Finance or IT department to develop and provide many reports.

Workflow within SAP is Not Fully Utilized

One of the benefits of ERP systems is the availability of workflow to signal to a user when items exist that require approval, review, or attention. The City is not currently using this feature in many areas of the SAP system. This requires the need for separate manual approval processes and notifications when work is ready to be completed in the system, leading to inefficiencies in the business process.

The SAP investment is not fully utilized overall

For several reasons, whether it is availability of staff, complexity of the function, or failure to fully meet the needs of the department, the staff is not utilizing various features of SAP.

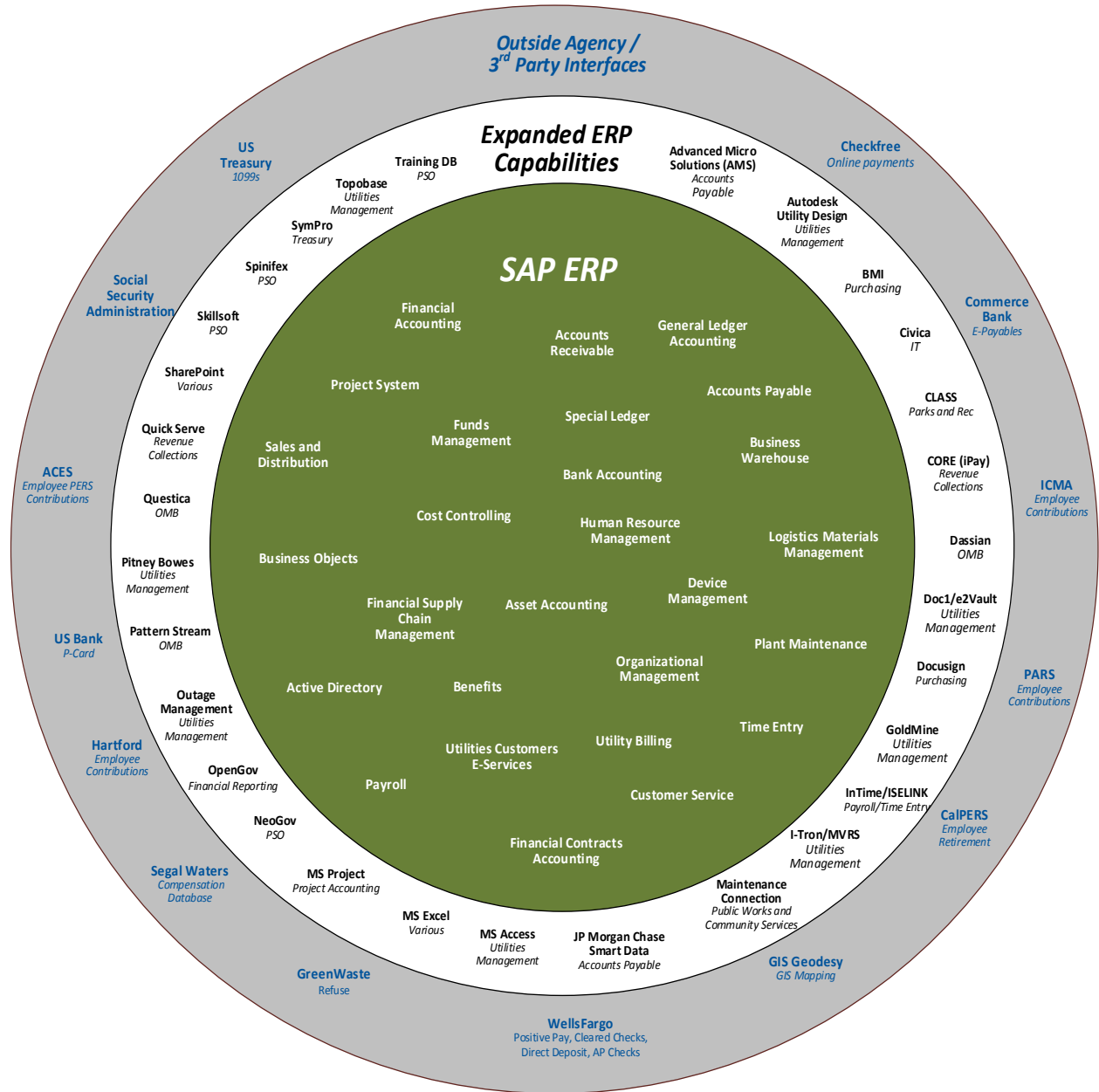
Heavy Reliance on IT and Outside Consultants for SAP Enhancement Requests

Along with SAP, the City utilizes a number of stand-alone systems. To meet the ever-changing needs of government, it is often necessary to add a field or function or tweak a transaction process. These minor or major enhancements to systems must be prioritized and handled by an IT Department whose resources are stretched as a result and/or must be outsourced to a third party contractor. Additionally, most reporting requests must be handled by IT staff, meaning that there is often a delay in getting necessary information.

Complicated / Limited System Integration Requirements

Numerous standalone systems are used to report and gather data resulting in complex integrations to the City's main ERP system. Reliability of data is an issue in many City areas because information is not processed in real-time or can be immediately synchronized between systems when reporting from SAP. There are also cases where staff has limited ability to access current information in the required systems. The cost to establish interfaces between additional systems to ensure timely and accurate information is available is significant when considering the staff time necessary to test and maintain these interfaces for the long term. The ERP Applications Environment Diagram represents the complexity of the City's existing application landscape. The City intends to continue adding systems to this environment within the next year adding further system administration responsibility to the team.

Current ERP Applications Environment Diagram



Reporting is Inadequate for City's Needs

The City is faced with a number of mandated reporting needs. The standard reports that are available within the system do not meet the overall needs of the City. Therefore, many departments are maintaining separate spreadsheets in order to meet the day-to-day informational needs of the City and its departments.

Lack of Self Service Functionality

Several employee facing processes are entirely manual and could benefit from better employee and manager self-service functionality. For example manager self-service for employee performance reporting is non-functional and employee self-service functionality is limited to read only transactions.

There were a number of consistent themes expressed during the process review sessions. Although it is difficult to summarize opportunities to resolve dozens of issues identified, the unmet needs which the City management and staff expressed as opportunities for improvement are as follows.

1. Redesigned and streamlined business processes incorporating established best business practices.
2. Full integration between all system modules, allowing for the elimination of shadow systems and other supplemental applications.
3. Real-time, immediate update and access to the financial and human resources information.
4. Single entry of data and reduction in manual processes.
5. User-friendly, user-driven and flexible reporting tools with distributed, securitized access to all users.
6. Elimination of paper-based processes and replacement with automated, online workflows and approvals
7. Self-service capabilities and other "e-government" opportunities such as employee self-service, remote time entry and mobile workforce capability.
8. Performance measurement and improved reporting capabilities.
9. Improved system of internal controls.
10. Reduced total cost of ownership.
11. City wide document management system and policy is needed. This will also help automate many workflows.

As these themes indicate, there is an obvious need to improve upon the current systems environment. To seize on this opportunity, Plante Moran is presenting a variety of strategic options and alternatives for the City to evaluate as part of this assessment.

1.1.5 EXECUTIVE SUMMARY OF OPTIONS AND RECOMMENDATIONS

Plante Moran has evaluated the City's current ERP environment and has observed a clear trend toward selecting best of breed systems that interface with SAP in order to achieve desired business objectives. In many cases, these best of breed systems replicate core SAP functionality the City cannot realize at present. In recognition of this trend, three key options, with multiple best-of-breed alternatives have been identified to assist the City to identify a viable strategic approach to further investment over the next five years. Each option offers some advantages and one offers the most cost-effective and most suitable alternative based upon Plante Moran's experience conducting system needs assessments and selections when facing circumstances similar to Palo Alto. The table below defines these options and detailed information relative to each option. The specific advantages and disadvantages of each option are provided in detail in a later section of this report.

OPTIONS DEFINITION AND EXECUTIVE ANALYSIS

Options	Description
Option 1: Status Quo with Investment ON PREMISE: Status Quo Current SAP Modules + Existing Applications (Best of Breed Systems) w/ Extended SAP Support	This option represents the City's current investment position with the resources currently in place supporting the SAP environment on premise today. It also represents the existing mix of best of breed or third party applications interfaced with SAP supporting the budgeting, fixed asset / asset management, human resources, purchasing, revenue collection, treasury, and utilities management. The City is paying a premium for the addition of best of breed solutions when core SAP functionality exists but cannot be fully realized.
Option 2a: Upgrade SAP ALL IN CLOUD: Upgrade SAP Modules + Other Existing Applications + Planned Applications (Includes SAP Utility Billing)	This option represents the City's migration to a Hybrid Cloud where the City would take advantage of the HANA Enterprise Cloud to take advantage of hosted and managed services from SAP. The City would assume maintenance responsibility for the non-SAP applications that would reside in this environment and will retain ownership of these licenses.
Option 2b: Upgrade SAP MIXED ENVIRONMENTS: Cloud Upgrade SAP + Existing + Planned Applications + On-Premise Utility Billing Best of Breed	This option is essentially the same as 2a above with the exception of the addition of a utilities best of breed system. The overlap between the core SAP and best of breed solutions remains in this option and it does not appear to offer a viable strategic alternative.
Option 3a: New ERP Environment NEW Fully Integrated ERP Environment + Utility Billing Best of Breed	This option assumes the City reinvests in a new, fully integrated ERP solution that would take advantage of the capabilities of a solution. The City would prepare an RFP for a solution that incorporates all of the required functionality in addition to integrating with a new utilities best of breed system.
Option 3b: New ERP Environment NEW Limited ERP Environment + Existing Applications + Planned Applications + Utility Billing Best of Breed	This option assumes the City reinvests in a limited ERP environment where the existing and planned best of breeds would be acquired in addition to a best of breed utilities management system.

Plante Moran performed a total cost analysis (TCO) for each option presented above. This analysis takes into consideration the one-time cost as well as estimated ongoing costs, for each option based on assumptions defined later in this report. A summary analysis of the total cost of ownership for each option identified in the report is provided in the table below:

Executive Summary of ERP Evaluation Project Alternatives					
Cost Category	Option 1	Option 2a	Option 2b	Option 3a	Option 3b
	ON PREMISE Status Quo with Investment	ALL IN CLOUD Upgrade SAP and Retain Existing Best of Breed Systems	MIXED ENVIRONMENTS Upgrade SAP Core Financials/HR/Payroll Modules Only Keep Existing Best of Breed Systems Obtain Best of Breed Utility Billing System	NEW ERP Go to Market for a Fully Integrated Public Sector Focused ERP Solution and Procure a Separate Utility Billing Best of Breed Solution	NEW ERP Go to Market for a Fully Integrated Core Financials/Human Capital Management Solution, Retain the Current Best of Breed Systems and Procure a Utility Billing Best of Breed
EXTERNAL COSTS					
One-Time Cost Summary					
Software License Fees	\$ -	\$ 3,628,151	\$ 3,391,151	\$ 1,069,984	\$ 1,670,133
Additional Hardware Costs	N/A	N/A	N/A	N/A	N/A
Consulting Implementation / Data Conversion / Interface Development	\$ -	\$ 589,350	\$ 1,009,757	\$ 2,142,027	\$ 2,338,275
Training	N/A	\$ 566,850	\$ 686,850	\$ 120,000	\$ 250,850
System Selection & Implementation Planning Fees	N/A	N/A	\$ 80,000	\$ 200,000	\$ 200,000
Total External One-Time Costs	\$ -	\$ 4,784,351	\$ 5,167,758	\$ 3,532,012	\$ 4,459,258
Recurring Cost Summary					
Annual Software Licensing & Solution Support	\$ 667,910	\$ -	\$ 64,138	\$ 241,675	\$ 205,874
Consulting Support Services	\$ 250,000	\$ -	\$ -	\$ 80,698	\$ 64,425
Cloud (includes Licensing, Support, Interfaces & Consulting Services)	\$ -	\$ 3,421,439	\$ 2,921,439	\$ -	\$ 646,080
Training	\$ 112,500	\$ 150,000	\$ 165,000	\$ 75,000	\$ 115,000
Total External Recurring Costs	\$ 1,030,410	\$ 3,571,439	\$ 3,150,577	\$ 397,373	\$ 1,031,379
INTERNAL COSTS					
Recurring Cost Summary					
Current Support FTE	\$ 2,073,000	\$ 510,000	\$ 510,000	\$ 510,000	\$ 510,000
Additional Support FTE'S	\$ -	\$ 530,000	\$ 530,000	\$ 400,000	\$ 530,000
Total Internal Recurring Costs	\$ 2,073,000	\$ 1,040,000	\$ 1,040,000	\$ 910,000	\$ 1,040,000
Year #1 Grand Total Cost	\$ 4,133,820	\$ 6,267,261	\$ 6,650,668	\$ 4,442,012	\$ 5,942,168
FIVE YEAR ESTIMATES					
Five-Year Estimate *	\$ 17,138,248.00	\$25,559,803	\$24,182,480	\$9,911,572	\$14,608,045
* Estimate includes one-time and recurring costs during year one, annual software licensing and solution support for planned application purchases in year one are assumed to be incurred in years 2-5 only, and the future value of investments has been adjusted for years 2-5 to account for a 3% annual rate for inflation.					

1.1.6 PLANTE MORAN RECOMMENDATION

The SAP system offers a significant range of functionality and is capable of meeting most of the City's ERP needs. However, the City has not demonstrated the capacity of effectively utilize the range of features offered by this complex system. The primary challenges with maintaining Options 1 and 2 would be the inefficiencies due to multiple systems and the cost of maintaining and supporting the SAP system and the interfaces with a proliferation of best-of-breed solutions in the long run. Internal and external costs to support the current environment, variety of standalone systems, and the lack of integrated information are also main drivers for the City to consider additional options. Plante Moran does not view Option 1 as a viable long term strategy primarily because the current version is not supported by SAP starting in 2016.

At the time that the City purchased the SAP system, the ERP software market was quite limited. Today there are a number of ERP options, designed explicitly for and available to, cities the size and complexity of Palo Alto. Some of today's ERP systems offer not only the core ERP functions, but also many of the Expanded Capabilities, as shown in the prior diagram.

Overall, the City may decide to continue with SAP, but in view of the total cost of ownership differential as well as the problems that it has had in maintaining and optimizing SAP in the past, Option 3 may allow the City to lower the total cost of ownership and improve the functionality for City end users.

We recommend that the City issue an RFP to evaluate best of breed solutions with a fully integrated public sector focused ERP solution and procure a separate utility billing best-of-breed solution.

2 Current State/Gap Assessment

2.1 OVERVIEW OF FINDINGS

One of the main strengths of the City's current set of business systems is that they enable the City business processes – i.e., employees are paid on time, purchases are made, applicants are hired, financial reports are completed, and funds are budgeted and accounted for. In general, the current systems facilitate basic financial, purchasing and human resource functions. There are, however, some weaknesses that will be reviewed in further detail in the functional assessment areas below.

2.2 GENERAL LEDGER / FINANCIAL REPORTING

The City utilizes SAP for General Ledger, Budget Control and core Financial Reporting. SAP was implemented over 10 years ago and is still supported by the vendor to this day. A majority of the organization utilizes SAP for basic financial reporting purposes, however many of the departments utilize Excel spreadsheets for budget tracking/reporting, as reporting from SAP has been described as difficult.

Overall, the chart of accounts at the City has five segments and can approach 30 alpha numeric characters as defined below:

Segment:	Fund	Cost Center	Business Area/Dept.	Account	WBS
# of characters:	3	8	3	5	10

As a whole, the current Chart of Accounts accommodates GAAP based on GASB standards for the City's CAFR. Despite not being on the most recent version of SAP, City staff has been able to maintain a high level of effectiveness in its accounting processes.

STRENGTHS

The strengths of the current General Ledger / Financial Reporting environment include:

1. **Chart of Accounts Structure:** The current Chart of Accounts adequately accommodates required GAAP based on GASB standards for the City's CAFR.
2. **Interdepartmental funds transfer:** The system enables the transfer of funds between departments, funds and projects through an automatic fund balancing feature. The feature allows an authorized user to complete entries across multiple funds and the system prepares the balancing entries in the background. This capability provides prevents these transfers from creating out of balance situations and prevents the need to manually perform these entries.
3. **Audit Trail/Drill Down Functionality:** Basic audit trail and drill down functionality is available within SAP.
4. **Closing Flexibility:** SAP effectively supports month end and annual closings.
5. **Familiarity with system:** The current accounting staff is knowledgeable and familiar with the current system.
6. **Useful query/reporting tools:** Users identified the query feature and Spinifex reporting tools as major strengths that need to be retained in a new solution. However, staff would like additional functionality, such as the ability to drill into further information from the reports.
7. **Upload tools:** SAP has functionality to upload journal entries from Excel into the financial system.

WEAKNESSES

1. **Data Integrity:** During the initial SAP implementation the City converted historical data which is causing data integrity issues (remaining AR balances) to this day. While this is not an issue resulting from SAP, this information converted resulted from an implementation process that was not validated and it perpetuates error within the system.
2. **Chart of Accounts and Validations:** Not enough automated validations were implemented when it comes to creation of new GL accounts, thus duplicates exist. Unique description for each general ledger account is needed to avoid confusion when posting transactions and generate reports. This is a process issue that has no relationship with SAP.
3. **Manual Processes:** SAP has automatic and recurring journal entry functionality, however it is not being utilized. While the City does have the ability to utilize a template to upload the journal into SAP, it requires manual intervention to open up the template and execute the journal process. This is a process issue and not identified as an SAP system functional deficiency.
4. **Journal Entries Workflow:** Requests for journal entries from the departments are submitted via a hardcopy memo, which is difficult to track and ensure completion. Staff would like to submit journal entries electronically, along with supporting documentation.
5. **Reporting Tools:** It is difficult for the casual system user to write new reports with the SAP and Spinifex reporting tools. Staff indicated that the current financial system is not user-friendly and provides limited ability to extract, manipulate and analyze data. Third party CPA (MGO) compiles the CAFR and annual Streets Reports on behalf of the City. The City needs more access and transparency in the third party system. Microsoft Excel is heavily used to analyze the financial results (i.e. budget to actual variances).
6. **Internal Orders Functionality:** The City uses The Internal Orders functionality of SAP for tracking statistical data for expenses relating to grants or specific sub-projects. It is also used in other areas including Planning, Community Services, and others.
7. **Accounting Decisions Responsibility:** Various City departments have their own Accounting liaison that make accounting decisions, which should reside strictly with the trained accounting staff. This is recognized as a process and governance issue unrelated to SAP's system capabilities.
8. **Electronic Document Management:** Reviewing backup documentation is currently a manual/paper process. Departments will park their journal entries in the system and send paper "backup" for accounting to review.
9. **Loss of Institutional Knowledge:** City has lost quite a bit of institutional knowledge through retirements which has hurt the SAP support structure. As a result, much of the functionality SAP can provide has been 'lost' as the City power users retire. This is identified as a system governance issue and not related to an SAP functional limitation or deficiency.
10. **Reporting System Gaps:** FI and FM funds integration reports differ in the way SAP is configured resulting in conflicting reporting results creating confusion among the user base.
11. **Donations Tracking:** Accounting has to track outside of SAP and Questica the status of all donations since the amounts cannot be determined by the individual departments at this time.

OPPORTUNITIES

1. End-user financial reporting will be greatly improved from either an SAP upgrade of the implementation of a new system, as many of the components and CAFR required financial reports are provided out of the box from a host of potential vendor solutions.
2. If the City decides to upgrade its current SAP environment, it should start taking advantage of the Internal Order feature for interdepartmental costs allocations or for tracking costs of a specific job, allocating the costs to an asset, cost center or GL Account and analyzing the cost centers for better-decision making purposes. Furthermore, the City should take advantage of the SAP automatic and recurring journal entry functionality and turn on the journal entry approval and posting workflow by turning on email alerts and modifying the rights of the roles for the users involved in the process, in such a way that segregation of duties is achieved or maintained.
3. A modern system can potentially provide users with improved non-financial reporting tools, increased account and budget validation at the point of data entry, and greater ability to drill down into system transactions. The City owns SAP Business Intelligence module, which is currently used only by Utilities department. This City should consider expanding the use of this tool across all departments in order to achieve better reporting and creation of user defined automated dashboards that include financial and non-financial metrics.
4. The chart of accounts structure and cost center structures need to be optimized in order to better align with business needs and provide more meaningful information to decision makers and citizens.
5. A future system should include accounts payable invoice scanning, document storage and retrieval, and electronic workflow processes. The City is currently contracting to outsource the payables processing through Commerce Bank to provide these services, it is more efficient to perform these functions within the core ERP whenever possible.

2.3 INVESTMENT/CASH MANAGEMENT

The City has the responsibility of managing many types of debt and investment instruments that require significant planning and tracking efforts for ensuring sufficient funds are available to cover liability and contractual obligations. The City's Money Management / Treasury Division is responsible for investing the City's cash resources, investments, and facilitating the debt financing process in accordance with the City's investment policies and State statutes.

The City currently uses the Sympro software to centrally track the City's investment portfolio activity valued at \$500 million. The software generates reports for analysis, reconciliation, and meet legal and accounting reporting requirements including the production of quarterly investment reports for City Council, forecasting investment maturities, and ensuring the City has sufficient cash liquidity. Examples of reports generated including GASB 40, owned security list, variety of interest earnings, past and future maturity activity, etc.

STRENGTHS

Sympro is a versatile and appropriate system for managing City's investment portfolio.

WEAKNESSES

1. **SAP Use:** SAP is not being used to track the City's management of investments and cash flows and there is no programmed interface between Sympro and the City's SAP GL at this time. This requires all activities including, but not limited to, interest earnings, purchases, and sales, to be represented as manual journal entries.
2. **Reporting and Analysis:** Cash flow analysis is currently being managed in MS Excel to represent the needs of the entire organization.

3. **Staff Availability:** Because cash flow forecasting involves manual processes necessary to update these Excel workbooks to synchronize transactions, there is greater overhead to produce current, actual summaries of cash flow forecasts reflecting the City's current investment holdings.

OPPORTUNITIES

It is very common for ERP vendors to partner with investment management solution providers, including Sympro, to offer a direct integration with the ERP system can be achieved. A direct integration with the City's ERP system would:

1. Reduce administrative overhead involved in creating journal entries for account updates in the GL and provide greater line item control options.
2. Provide the City with options to have utility and non-utility accounts receivables represented in addition to an expense side module so a single cash flow analysis could be represented.

2.4 BUDGETING

Starting with the FY 2016 budget, the City's annual operating and capital budgets are developed with Questica Budget software, using extracted financial data from the City's Enterprise Resource System (SAP). Previously, the General Fund Long Range Financial Forecast (LRFF), labor cost modeling, financial reporting, and monitoring of the City's budget were completed on spreadsheets. Starting in the FY 2016 budget process, Questica Budget will be used to develop, monitor, and review the City's budget.

The workflow process of receiving a budget proposal, packaging decision materials, and compiling text and figures into the budget document will be automated using Questica Budget and the budget document publishing software (PatternStream). Questica is integrated with the City's current ERP system (SAP) and PatternStream.

During the fiscal year, the Office of Management and Budget (OMB) and city departments adjust department budgets to reallocate existing funds into more appropriate line items or augment a department budget based on Council action. Beginning FY 2016, workflow for these processes will be managed using Questica Budget by documenting the budget change and its justification. Any budget change in Questica Budget will be adjusted in SAP through an interface that occurs daily.

STRENGTHS

The strengths of the current Budgeting environment include:

1. **Systems Integrations:** Budget preparation in Questica Budget is integrated with SAP and Pattern Stream. The workflow and budget entry for this process will be managed by Questica Budget with a daily interface to SAP to record the transaction in the financial system.
2. **Streamlined Processes:** Questica Budget results in a more a more streamlined budget process. Staff in departments will provide information for budget change submittals, Budget Amendment Ordinances (BAO), and annual budget proposals in a work flow environment. Specific budget proposals for vehicle requests or position requests will be routed through the workflow process to Public Works or People Strategy and Operations, respectively. OMB and department staff can review and approve proposals and generate decision packages for decision makers to review in a controlled setting.
3. **Automated Workflows:** Questica software has workflow capabilities for receiving a budget proposal, packaging decision materials, and compiling text and figures into the budget document, which eliminates manual processes, reduces errors, and allows Analysts in OMB to, work with departments on cost saving measures
4. **Reporting and Modeling Capabilities:** Budget modeling, summarization, and reporting are performed in Questica Budget. The functionality of the budget system allows staff to input

escalation factors or dollar amounts for these scenarios and have these changes automatically flow through the next ten fiscal years.

5. **Performance Management and Dashboard Monitoring:** The City reviewed various performance management software solutions. Questica Budget released a performance management module with dashboard capabilities in summer 2014. Staff intends to bring forward a contract amendment in the fall to the City Council to change the license agreement from seat licenses to a site license at a highly reduced cost. It is expected that managing the City's operations through central review of performance measures and dashboards will enhance productivity and services for residents and the community.
6. **Automated Spending Controls:** SAP's Budgeting Availability Controls (AVC) is used to warn the user if 10% or 5% of budget remains. The department must then submit a budget change request to OMB.
7. **Efficiency Gains:** With the implementation of Questica Budget software manual processes will be eliminated, which reduces errors and allows Analysts in OMB and the departments to work on higher value tasks such as cost saving measures, organizational analysis, and performance management.

WEAKNESSES

The weaknesses of the current Budgeting environment include:

1. **PO and PR Carry Forward (Reappropriations):** The City carries forward its Purchase Orders and Purchase Requisitions from one year to another. In the New Year the Accounting department is posting the accruals thereby creating problems for budget reports by department. The City is working to perform a change to the Municipal Code to address this issue.
2. **Cost Allocations:** OMB department does not understand the basis of how percentages of overhead costs allocations was determined and the execution of this process in SAP (no assurance that is complete nor accurate). The configuration of these cost allocations was performed by staff during SAP's initial implementation who are no longer in the City's employ and the knowledge to understand how these were established was undocumented. OMB is in the process of implementing Questica which will address this shortcoming.
3. **SAP Reporting:** Generating custom reports from SAP is difficult (i.e. department budget showing key parameters) and requires a program to write the report. It is very difficult to obtain fund reserve balance reports for any of the funds in real time. Data reports do not have the required detail (i.e. budget to actual reports). Report data varies when reports are generated by different users and cannot be tied back to the cost centers detail. As a result, departments do not have confidence in the data in some reports.
4. **SAP User Friendliness:** Some City Departments do not use the SAP system to track and report transactions (i.e. Public Safety) due to the perceived level of difficulty to produce reports. As a result, departments feel they are not in control of their financial situation. In extreme cases, due to the lag in P-card transaction posting, departments fully expend their budget and have the need to submit a budget change request..
5. **SAP User Training:** Users are in high need of continuous training when it comes to budget management and reporting in SAP modules (SAP FM, SAP PS, etc.).

PENDING ISSUES

1. **Double Entries:** SAP will remain the system of record for Position Management due to the ERP system controlling and maintaining employee master data. Position cost center allocations will be maintained in SAP. Since the budget for positions will be developed in Questica Budget, and unless SAP and Questica Budget integrates position changes during

the Questica Budget implementation, position changes derived from the annual budget process must be performed in parallel with both systems (SAP and Questica Budget).

OPPORTUNITIES

In the near term, the City will benefit from implementing and integrating Questica budgeting system with SAP. The expected advantages of reducing the staff time involved in the budget development, review, approval and adjustment processes in combination with an electronic workflow-driven environment is anticipated.

In an optimally configured system the City would be able to accurately define and track progress toward mission elements, while taking advantage of the following additional opportunities:

1. Streamline and make transparent the overhead costs allocations to easily check completeness and accuracy
2. Gain control over budget line items changes, made directly within the system, via user security rights and automated approval workflows
3. Implement better automated spending controls, fund center assignee controls, position management controls etc.
4. Avoid double entries in two systems when it comes budgeting changes
5. Track donation status within the ERP system by the individual department
6. Improve reporting granularity, accuracy, confidence and speed
7. Increased user friendliness when it comes to usage of the ERP system due to its predefined module functionality and reporting capabilities

Further the City should consider:

1. Providing formal and informal annual ERP and non-ERP systems training to end user, based on business need and keep track of each user training compliance
2. Documenting in a “Center of Excellence” repository the best practices and lessons learned to which all users have restricted access based on their business needs
3. Hold each Department accountable for maintaining updated policies, procedures, user manuals and desktop procedures for all systems
4. Enforce ERP and non-ERP systems governance, especially when turnover takes place within the Departments

2.5 FIXED ASSET | ASSET MANAGEMENT | CAPITAL IMPROVEMENT PLANNING

The City has decentralized asset management responsibilities involving multiple divisions and departments. Community Services, Public Works, Utilities, and Administrative Services are key service providers with responsibilities to ensure the City's infrastructure assets provide reliable, predictable levels of service at the lowest cost possible. The City recently completed an Enterprise Asset Management Needs Assessment, Selection, and Implementation Plan to improve and manage on the asset management practices. The assessment revealed the City had been maintaining its fixed asset inventory to compliance with GASB 34 standards using SAP's Fixed Asset module. New capital projects and capital rehabilitation projects that extend asset life are captured from invoices and timecards and posted into SAP's project module. The project module is reconciled with the construction in process account and project costs are capitalized annually during the year a given project is closed.

The City maintains a rolling, five year capital improvement planning window which categories projects into programs and into funds to facilitate the reporting process. Budgets for projects are developed by phase, by program, and by project which assists in the management activity tracking process. The City is further required to track its infrastructure investments by IBRC category which introduces a more granular reporting and tracking requirement beginning with this year's asset management requirements.

STRENGTHS

1. **Project Accounting:** The City's ability to account for labor and contracted costs by project through the City's time and attendance system in SAP so these costs can be accounted for and capitalized, as appropriate, is a model best practice (as evidenced in non-internal service funds or those involving Account 471).
2. **Budget Development:** Additionally, the City's recent investment in Questica this year will completely transform the budget development process for FY 2015 by establishing a structured workflow for all departmental budget item submissions. It will reduce administrative overhead in managing numerous complicated Excel spreadsheets and will integrate directly with SAP which will be expected to remain as the system of record for all budget to actual reporting within the City. Questica will provide the ability for departments to submit budget changes for projects, close out projects, reallocate funds between projects, open new projects, and tag new sources of revenue. Daily updates will be provided from SAP into Questica to enable departments to more readily retrieve current state budget to actual information by project, program, or fund.
3. **Grant Accounting:** The City is currently managing its \$2.5 million in grants successfully through SAP where each department is responsible for administering their own grant obligations including advances (e.g. VTA), CDBG, FAA (new airport operations), county (transportation reimbursement), and utilities (Santa Clara County Water District). The grant reporting and tracking needs have been sufficient for those responsible in tracking this information.

WEAKNESSES

1. **Use of SAP Modules:** The City's asset management activities outside of the Utilities Department are not using any of SAP's Plant Management (PM) module capabilities. As a result, there is very limited asset management accounting for activities involving regular and capital maintenance due to several factors including:
 - The use of disparate systems and databases that are not integrated with SAP or its interfaced systems preventing the City from portraying a uniform view of its asset infrastructure.
 - The inability to portray accumulated maintenance deficits contributing to accelerated asset life deterioration
 - The absence of any work order or service request management tools to track regular and preventive maintenance leads to increased asset liability.

2. **Capital Improvement Planning (Budget to Actual Reporting):** The City does not currently have a means to generate reports allowing departments to determine the status of a multi-year projects. This is caused by the need to carryover previous year(s) funding from earlier budgets when a project spans more than one fiscal year. When this happens, the ability to freeze a project prior to the carryover at a specific point in time to reflect current to actual details is not possible.
3. **Tracking Internal Labor Against Projects:** The means to provide an instant status report that a project manager can design and initiate exports from remains elusive and not possible to generate without advanced SAP system knowledge. This restriction appears to be limited to internal service fund activity tracking at this time as CIP projects do not appear to have this restriction.
4. **Absence of a Comprehensive Asset Infrastructure Inventory:** Capital assets are typically tracked by aggregated quantities which is adequate for meeting GASB 34 accounting guidelines but are insufficient for operational asset management activities. Non-capitalized assets also involve significant maintenance responsibility for the City and are not inventoried in any system, including SAP at this time. Without a comprehensive inventory, there is no way for the City to manage its overall maintenance obligations to know where maintenance has been deferred or needs to be performed.
5. **Absence of Multi-Year Asset Maintenance/Management Forecasting:** The City does not have a program in place that forecasts asset maintenance needs beyond the five-year rolling CIP planning horizon. The City currently recognizes fixed asset lifespans for infrastructure at 40+ years but there is no current planning mechanism in place to represent these longer term commitments.

OPPORTUNITIES

The City's recently completed Enterprise Asset Management System (EAMS) Needs Assessment, Selection, and Implementation Strategy report identified the following opportunities that could be realized through the use of an Enterprise Asset Management System. Integrations with the ERP environment are necessary to execute a number of the following items:

1. **Maintain Current Asset Inventories for Current Asset State Evaluations:** The EAMS must allow City staff to establish a comprehensive, uniform, current-state inventory asset types across operational divisions in Public Works, Community Services, and Administrative Services by current asset operating status (e.g. current/active, scheduled, retired). This inventory needs to identify capitalized and non-capitalized fixed assets so they can be associated with the identification numbers currently in SAP for fixed asset value tracking (e.g. government-wide financial reports, statement of net assets).
2. **Provide a Basis for Budgeting and Capital Asset Planning:** The means to track budget to actual cost at the asset detail level in addition to the project and program levels through the City's ERP presents new opportunities to weigh asset management alternatives at both the near and long term. At present, the City's operational divisions are identifying priorities based upon an annual budget cycle and a five year capital investment timeframe. The lifespan of most infrastructure far exceeds this planning window (often greater than 20 or more years). The ability to identify past, present, and future resource asset resource commitments will ultimately determine if infrastructure is being managed as cost-effectively as possible or if corrective measures are necessary to prevent reduced asset life.
3. **Balance New Infrastructure Investment Planning with Operations & Maintenance:** Operations and maintenance (O&M) budgets need to be re-evaluated to determine the impact to service levels as operations and maintenance budgets are expected to support a larger asset pool. In most cases, the size of asset pool increases at a rate faster than the amount of funds allocated to O&M activities. This obviously diminishes the organization's ability to realize the given assets expected lifespan.

4. **Integrate City's EAMS with ERP Human Resources, GL, and Budgeting Modules:**
 - The ability to access personnel rates through the HR module and assign these rates to work activities within the City's EAMS will ensure direct labor costs associated with projects are accurately represented and available. Budgeting integration will allow for capital maintenance or construction activities to be captured according to existing project/program accounts. It will also facilitate the collection of this information at the operations detail level. This allows for improved fixed asset reporting and accounting at the end of each fiscal year when this inventory is updated. Integration with the GL will allow for specific labor, materials, and equipment to be expensed to the assigned account numbers which will expedite budget-to-actual reporting and improve the City's capability to calculate actual service level cost.

2.6 PROJECT ACCOUNTING

The City is currently using the SAP-PS (Project System) for its project cost accounting activities in addition to Microsoft Project and Microsoft Excel. Project accounting is conducted by phase, by program, and by individual project and typically involves larger capital projects involving public works, utilities, and facilities related projects. Projects are typically created through the budgeting process on a rolling five-year cycle. The City is able to use the SAP-PA to track project phasing but is not currently using project task tracking capabilities at this time. Project management activities involving scheduling, task assignments, activity dependencies, and milestone completion percentages are performed outside of SAP using Microsoft Project or Excel.

STRENGTHS

1. **Labor Cost Tracking:** Project accounting is very effective at capturing labor costs through SAP's time and attendance entry system which can be coded directly to specific projects. This provides a very efficient and effective means of providing labor cost allocations to projects and also produces reports with accuracy. The City maintains tracking relationship information for budgeted CIP projects against current and scheduled projects. Because of these strengths the City has been able to:
2. **Reporting Compliance:** SAP allows the city to comply with all external reporting requirements (e.g. Federal, State).
3. **Disaster Reimbursement:** In emergency or disaster declaration situations, the City has the ability to track emergency related project costs through SAP's project accounting toolset allowing for reimbursement reporting. This is a critical function necessary to support public safety and public works professionals responsible for ensuring the delivery of essential services.

WEAKNESSES

1. **Project Budget Tracking:** One of the greatest obstacles to SAP's project accounting system is the capability of tracking real-time project budget or contract balances. Presently, project managers are responsible for tracking their own project costs, tasks, and retainage in Excel spreadsheets. This creates reporting challenges as information pertaining to the completion status of project tasks, retainage release approvals, and vendor performance is not being captured within SAP. Which results in a lost ability to generate standardized project status reports. It is possible for departments to overspend their project budgets without exceeding budget controls on a multi-year type project involving multiple funds. Therefore, budgetary controls are not effective in these types of situations. Project managers are also constrained by the fact that they cannot represent prior year budget to actual reporting because funds can be carried over from the previous fiscal year. This precludes the ability to represent project variances at previous points in time when conducting project status comparisons on similar types of projects. It also prevents project managers from determining the amount remaining to fund their projects.

2. **Project close-out:** since project open/close dates are not consistently defined in SAP, the ability to run a report on project closeout status leaves many projects open beyond their actual lifespan. It also requires project managers to manually notify their financial analysis and/or accounting when projects are completed to effectively closeout a project (e.g. releasing payment/performance bonds, liquidating escrow accounts, accurately tracking the valid dates for warranty coverage, etc.).
3. **Contract Compliance:** Contract administration is also complicated by the fact that there is no way to track a contract back to multiple projects or from multiple contracts back to a single contract. The absence of this knowledge prevents the organization from identifying the quality and performance of prior vendors in addition to knowing whether vendors are authorized to continue working for the City in accordance with performance requirements (e.g. liability insurance is current, performance guarantees in place, business licenses are up to date, W-9's are still valid, etc.). At present, there is no relationship between the project management module and SAP's MM (Materials Management) where contract information resides.
4. **Reporting Limitations:** User/custom reporting queries are currently limited to those personnel who are granted access to the SAP system and/or are afforded sufficient user rights. SAP allows for users to have the ability to query on any data fields, project information, or account codes however, many project managers are reported to not have sufficient access system to generate their own reports. It should be noted, this information may not always be consistently entered into SAP and therefore a process improvement opportunity could resolve this challenge.

OPPORTUNITIES

In order to improve efficiencies in the area of project accounting, the City should consider the following opportunities:

1. SAP's Project System provides the opportunity to track projects encompassing multiple funds and/or departments but this functionality is currently not being utilized. This creates situations where shadow systems must be relied upon for accurately tracking this information to ensure expenses are fairly allocated to the appropriate fund(s) involved.
2. The ability to reference contract terms involving the scope, services, materials, and milestones through the Project System would be very beneficial. This would also avoid the time consuming process involved in generating reports from purchase requisitions in order to locate contract documents for specific projects and programs.
3. The City should identify options to institute project workflows that will enforce standardization across all projects and departments involving approvals, expenditures, and receipts based upon the City's internal reporting policies and procedures. The ability to closeout projects on a timely manner, represent project costs accurately for future performance comparison and institute standardized reporting will provide a means to establish reliable performance metrics in the future. This will also enable the City to benchmark its performance against other peer municipalities as the City seeks to evaluate similar project types.

In late 2011, an Infrastructure Blue Ribbon Commission issued a report recommending the City invest in an infrastructure management system. The system would track the condition and use of City infrastructure at the project level with the intention of providing the basis for asset-detail budgeting and longer-range asset maintenance projections. A new Enterprise Asset Management System (EAMS) which will be capable of tracking work activities at the asset, project, program, and fund levels. The system's future (anticipated) integration with the City's ERP will provide a means of capturing project specific labor, equipment, materials, contract specifications, and other cost details. The opportunity to provide project specific details involving work performed, GL line items charged, and dates of performance will significantly advance the City's project administration and reporting capabilities.

2.7 PROCUREMENT

The City has conducted extensive evaluations of its Purchasing Division policies, procedures, and requirements under the City's Municipal Code and Charter over the past four years. In 2011, the Leadership ICMA team evaluated the City's procurement operations and City's Purchasing Manual. In

2014, the City commissioned NIGP Consulting to prepare recommendations (Periscope Report) to improve the administrative efficiency of the purchasing process in addition to focusing the department's efforts to become more strategic in focus. Reoccurring observations from the following observations that were taken into account during the ERP evaluation process by Plante Moran:

- Continued staff turnover in the Purchasing Division has led to inconsistency in administering the purchasing manual and guiding staff through the purchasing process including contract administration, bid solicitation, and the submittal of purchase requisitions
- Formal and informal staff training is necessary for both purchasing and non-purchasing staff to ensure purchasing processes are understood and enforced uniformly throughout the City's operations
- Decentralization of the purchasing process has been identified as a strategic objective for the City. The ability to allow departments greater flexibility to manage their own solicitation process while maintaining necessary oversight controls administered by the City's Purchasing Division was repeatedly identified
- A need to streamline the administrative process involving informal and formal solicitation requirements was recognized by weighing the administrative costs to administer each form of competitive bidding process against the overall risk to the City
- The City currently issues about 2,220 purchase orders annually representing a total spend of nearly \$190 million
- The City now requires a purchase order for any purchase over \$5,000 at present and is encouraging the use of P-Cards (avoiding the need to issue a PO) as a way to facilitate the purchasing process and reduce the amount of time necessary to complete a purchase
- Informal purchases (three quotes obtained by department) require about 3-6 weeks for processing and formal procurements (public advertisement) require between 6-12 weeks to process from start to finish
- Limited oversight and flexibility relating to purchasing processes in SAP have lead the Division to seek Requests for Proposal for the procurement of an e-procurement system (including vendor self-registration) to replace the use of SAP as the Division's main purchasing system.
- The Division has also investigated the potential investment in a document management system to associate documents to purchasing and contract transactions in the new e-procurement system.

STRENGTHS

The City has successfully initiated a P-Card system that has integrated with the SAP system for single unit purchases under a \$5,000 threshold. The City is currently able to pre-encumber funds when purchase requisitions are made and encumber funds when a purchase order is issued. City staff are able to see both types of encumbrances on their budgets in real time when reviewing their budget status by fund (including specific line items).

WEAKNESSES

1. **Contract Management:** SAP's Supplier Relationship Management Module (SRM) processing is not being used to maintain contracts in SAP which limits capabilities for accessing contract data and requires that the City maintain contracts with the creation of a purchase order. Decentralization in the purchasing process along with missing controls in the SAP system require that both the Purchasing Division and City departments manually monitor open purchase orders. The system does not currently maintain contract expiration data and automatically carries open purchase orders are carried over to subsequent fiscal years.
2. **Lack of electronic workflow:** SAP's configuration is also noticeably weak in supporting workflow processes. For example, W9 processing can be an issue for purchases made below the PO threshold if the vendors W9 is not on file. The system allows purchases to be made without confirming that the vendor has a W9 on file.
3. **Commodity Codes:** The City does not currently use NIGP codes but realizes the future benefit in utilizing commodity codes.

4. **Limited Process Control:** There is a weak relationship between the Municipal Code and City's Purchasing Manual. Inconsistencies provide for risks and create possible areas of failure.

OPPORTUNITIES

The City's selection of a new e-procurement system gives the organization flexibility to evaluate its current purchasing processes and determine where these processes can be improved. When evaluating a new "Best of Breed" purchasing system the division should consider:

1. Associating commodity codes to account codes to enable the organization to classify purchasing data by products and services. The use of commodity codes facilitates the grouping, categorization and analysis of spend data supporting the development of term contracts.
2. Investigating/continuing to investigate the potential investment in a document management system to associate documents to purchasing and contract transactions in the new e-procurement system. A document management system is also necessary to take advantage of vendor self-registration capabilities.
3. Establishing workflow controls for purchases that do not require a PO. A control to verify that the vendors W9 is on file before automatically purchasing from a vendor would eliminate the risk that purchases have been made from a vendor without a W9 on file.
4. Tracking vendor performance. Currently the City can't track failure to perform situations. Maintaining this additional vendor data can help the City make financial investments that have the highest ROI.

Outside of Purchasing's technology initiatives, the Division should evaluate, review and revise terms in the Purchasing Manual to be consistent with the Municode. In accordance with the Periscope report, the Code is law and is the highest level of procurement policy. The Manual should include the requirements of the Municode.

2.8 ACCOUNTS PAYABLE

The City is entering into a contract with Commerce Bank to outsource its payment functions. This process is set to start planning the project January 1st, 2015 with a go-live on or before June 30th. The bank will scan invoices and pay vendors via credit card, check or ACH payment. These outsourced activities will provide badly needed accountability over vendor invoices, increase efficiency of and provide accountability over the invoice approval process, provide an electronic storage and retrieval system for vendor invoices, and eventually may reduce overhead expenses related to processing payments and cutting checks. Activities performed by the bank will be reported via an electronic reconciliation file from Commerce Bank to the City. In addition to these services staff at the City are also using Advanced Micro Solutions (AMS) 1099-ETC software and JP Morgan Chase Smart Data.

STRENGTHS

The City is currently issuing check runs on a weekly basis and this frequency is generally higher than many communities Plante Moran evaluates. This practice prevents the City from incurring additional liability for late fees when invoices are remitted by the departments on a timely basis.

WEAKNESSES

1. **Limited Process Control:** Decentralization in the process along with the absence of a vendor self-service function has created situations where departments hold onto invoices creating unknown liabilities, year-end accrual issues, unhappy vendor's, late fees etc. Outsourcing the City's payment functions will eventually eliminate this issue to some degree assuming departments promptly approve their invoices for payment.
2. **Employee reimbursements:** There are many California Public Records Act requests on employee reimbursement transactions. It is vital to the organization that supporting documentation is available and accessible. The absence of an integrated document management system creates the need for shadow systems/shadow processes, especially

where associated documentation is vital to maintain. The employee expense reimbursement process exists mostly outside of the financial system. Supporting documentation is maintained at the department level outside of SAP and is attached and forwarded to AP via excel spreadsheet. This process is expected to move from AP to payroll.

OPPORTUNITIES

An integrated content management system would support the City's response to public requests for information as well as help support the organizations transparency. The outsourcing of the payables function will reduce staff overhead for the City and will introduce the benefits of a third-part document management system.

2.9 REVENUE COLLECTION/MISCELLANEOUS BILLING/ACCOUNTS RECEIVABLE

Payments arrive at the City via a variety of methods and departments. The Cashier's Office and several departments accept cash payments, with some departments taking deposits directly to the City's bank. The City also uses a lockbox for utility payments. Procedures across the City for recording and processing receipts vary (including both manual and automated methods for sending receipt information to Accounting Department). Revenue Collections department and 12 other departments across the City collect revenue and fees. Revenue Collections department has 4 cashiers. CORE system (the cash receipting system) and SAP (SCM and AR) are the primary cash receipting, billing and posting systems at the City.

The City outsourced to third party vendor the collection of paramedic receivables.

STRENGTHS

The strengths of the current Miscellaneous Billing/Accounts Receivable environment include:

1. **Multiple Receiving Methods:** The current set of systems effectively accommodates the organization's receiving methods (i.e., Cash, Lock Box, Credit Card, Check, ACH, Credit Memos, etc.)
2. **Debit Card Transactions Processing:** Transitioning to iPay (web version of Core system) will allow processing of debit card transactions
3. **Query Capability:** Ability to query information in Core system
4. **Revenue Collections Controls:** Good controls have been put in place, like locked offices with restricted access to cash registers, unique log-on in Core and locked cash drawers, password protected the safe, no posting to accounts with no revenue allowed in SAP.

WEAKNESSES

The weaknesses of the current Miscellaneous Billing/ Accounts Receivable environment include:

1. **ACH Payment Processing:** ACH Payment processing is not automated. They are posted via manual adjusting entries by the Accounting department, after research is performed to determine whose department they pertain to.
2. **Account validation:** Core does not validate account numbers before posting transactions. As a result, cashiers can post transactions to incorrect or invalid accounts. These errors are not identified until they are interfaced with SAP. The process could be streamlined if cashiers were notified of the errors, via a pop-up error message or other notification, before the transaction was posted.

3. **Duplicate Records:** SAP has many customer duplicates that need to be cleaned out. Thus, the reporting of owed and paid amounts from SAP is hard to track by customer. This is a process issue unrelated to the core functionality of SAP.
4. **Reconciling Items:** SAP GL does not match CORE system cash receipts balances. Departments are not reconciling their cash receipts to their paid receivables. Some departments rarely resolve reconciling items between SAP GL and their subledgers, leaving them on the list of reconciling items for ever. This is a process issue unrelated to the core functionality of SAP.
5. **Delinquent Accounts and Interest Calculation:** The SAP interest calculations are currently incorrect due to wrong AR aging terms in SAP (SAP has 60-90-120 AR collection terms and they need 30-60-90). As such, staff have to manually calculate interest on each of those accounts and the automatic delinquent letters generated by SAP, are replaced with the corrected manual ones by Revenue Collections department.
6. **Police Department Issues:** Police Department doesn't have an automated POS system to collect cash, even though it handles thousands of dollars/month and is in real need of a system.
7. **SAP Reporting:** SAP AR Aging Reports have too many inaccuracies (cancellations, partial payments, etc.), since SAP GL and Core are not reconciled. This is a process related issue and not related to SAP's core functionality.
8. **SAP Training:** Departments expressed the need of further training relating to SAP cash receipts and receivables. They don't feel like tracking and reporting of receivables and cash receipts information in SAP is flexible or friendly enough (i.e. they can't make a distinction between write off and a cancelation of a receivable, document number type is the same for an invoice, a cancellation and a write off type transaction on the reports, they can't view breakdown of payments that are received by payment type, etc.).

OPPORTUNITIES

In order to increase revenue realization, the City should consider the following opportunities:

1. Accounting should reconcile and resolve on time the cash receipts reconciling items between SAP GL and Core system
2. Implement account validations in Core to validate account numbers before posting transactions via a pop-up error message or other notification.
3. Clean up SAP customer duplicate records
4. Adjust AR aging terms in SAP from 60-90-120 to 30-60-90 to avoid recalculation of interest and retyping of delinquent notices
5. Roll out the use of Core system to all other cash collecting departs (i.e Police department)
6. Train cash receipting departments how to use SAP tracking and reporting functionalities

2.10 PAYROLL/TIME ENTRY

The City's Payroll process supports between 1100 – 1400 employees (depending on those employees that are seasonal) and 11 different compensation/memorandum of understanding (MOU) plans. Because of the many differences across the plans the fields in SAP need to be very specific.

Managers are responsible for approving timecards for salary staff and entering time for hourly staff. Payroll processing is bi-weekly and all staff are paid on the same pay cycle regardless of classification. The majority of employees take advantage of direct deposit and employees receive their pay advices through email and through employee self-service.

STRENGTHS

The SAP system is currently capable of handling most pay scenarios for standard classifications. A simulated payroll is run on Monday and data elements associated with each payroll run including the dates, number of work days, holidays, and accruals can be verified. FLSA reporting is fully supported and overtime calculations impacting FLSA can also be handled. Strong capabilities also include:

1. **Interfaces:** Files are created by the SAP support team for CalPERS, ICMA, Mass Mutual, and SSA so these organizations can receive notice of payroll disbursements. Other forms of interfaces exist for situations involving:
 - a. COBRA Billings
 - b. Deferred Compensation
 - c. Annual Tax Withholdings to IRS
 - d. Garnishments
 - e. Work Orders (time entry against work orders)
 - f. Check Reconciliation
 - g. Budgeting (merit date and associated pay increases)
 - h. Deferred Compensation
 - i. Flex Spending
2. **Employee Self Service:** Allows employees to see accruals, benefit enrollment, and access their pay advices on demand. Employees can edit their time cards within a six week period. More capabilities could be realized but the current SAP version of ECC 6.0 does not allow for an optimal configuration to support with the present City resources.
3. **Absence/Leave Management:** SAP enforces all PTO accruals and enforcement including FMLA, donations of sick time to other employees, attendance policy management, and other forms of general tracking are fully supported.

WEAKNESSES

1. **Lack of electronic workflow:** The absence of workflows, change notifications and the lack-off ability to access data detail impacts managers' ability to efficiently manage time card approvals. The payroll process is dependent on each manager's approval of their staff's time cards during the period. Some of the road blocks preventing timely submission of timecard approvals include:
2. **Data Validation:** Approval of timecards that reference incorrect pay codes. Pay code detail can only be viewed during time entry, not during approvals. Because of this, managers must be familiar with all of the different compensation codes applicable to the staff they manage.
3. **Workflow Notifications:** Timecard edits after approval don't trigger a re-approval workflow. Managers do not receive a notification for timecard edits made after a timecard has been approved. Managers are dependent on employees to notify them of these changes or the change may go unapproved.
4. **Shadow Systems:** Hourly staff time detail is tracked outside of the system. Depending on the department, hourly staff supporting data exists outside of SAP in the form of a paper sign in sheet with time in/out or in an excel spreadsheet. Supervisors are responsible for entering time for hourly employees and supporting documentation must be maintained.
5. **Set-Up Challenges:** Union detail is tied to pay code instead of job title/role. In addition the system restricts employees to enter time based on the schedule configured for their role. This prevents some employees from entering the actual time worked (e.g., employees can't enter less/more than scheduled hours, night or weekend time unless they have a flex schedule).
6. **Lack of Scheduling Functionality:** Scheduling functionality is not available in the current time and attendance system. Managers maintain shadow scheduling tools such as shared outlook, Google, or paper calendars to manage employee time off throughout their department.
7. **Limited Training/Knowledge Transfer:** It was also apparent during these sessions that knowledge transfer across departments is limited because of the City's decentralized structure. As departments experience turnover and become dependent on shadow systems to

conduct processes knowledge of current/available functionality may be lost. The group participating in the cross-functional time entry/payroll session expressed frustration over managing leave requests without a leave request submission portal. Discussion led to the discovery that leave request submissions and approval capabilities exist in employee self-service.

OPPORTUNITIES

In a decentralized environment it is even more essential that organizations focus on communicating knowledge consistently and frequently. Documented processes that are continuously updated or having quarterly management discussion sessions, for issue resolution discovery (mentioned in the example above) are good communication practices.

Overall, the weaknesses that exist in the time entry/payroll processes exist because of the current systems configuration or lack of functionality. In a new payroll environment union details could be tied to job title/role instead of using different pay codes to differentiate between union employees. Workflow and scheduling functionality should also be investigated during the selection of a new system.

2.11 PEOPLE STRATEGY AND OPERATIONS (PSO)

People Strategy and operations (PSO) owns the employee lifecycle data for approximately 1,091 regular and up to 400 temporary/seasonal employees. The City has a complex collective bargaining environment, with nine separate employee groups, some with different contract provisions. The processes that PSO “owns” range from recruitment to new hire, benefits and compensation, promotions, leaves of absence, changes in schedules and salary to retirement or end of employment. Additional processes include that PSO manages include labor negotiations, discipline and grievances, customer service inquiries, risk management, workers compensation, compensation, job descriptions, salary schedules, employee development and training, succession planning, performance assessment, and exit interviews.

PSO utilizes SAP for the majority of employee transactions from onboarding through employee termination. In addition, NeoGov is utilized by the City for recruiting, applicant tracking and hiring purposes. To summarize, human resources is another area in which it has been necessary to purchase or develop a number of standalone systems in order to perform necessary business functions. The lack of integration between these many systems results in a lot of manual reconciliation and duplicate data entry.

STRENGTHS

The strengths of the current SAP and NeoGov environment include:

1. **Basic Human Resources Management:** Overall, the system facilitates many basic human resources functions in an effective manner.
2. **Security:** The system has the ability to restrict user access to employee records.
3. **Online applications:** The City accepts online applications via NeoGov. Candidates are able to enter their own information and have the flexibility to apply for a position from anywhere at any time.
4. **Job Descriptions:** Job descriptions are retained in SAP and thus could be accessible to staff and candidates via employee self-service and online recruiting.
5. **Limited Self-Service:** Employees can view read only payroll and benefit information online.

WEAKNESSES

The key weaknesses of the current environment include:

1. **Employee File:** SAP maintains one master employee file, however departments must keep paper files outside the system to be able to capture the level of employee information they require.
2. **Position Control:** The position control ability within SAP is limited, with a particular problem being an inability to tie positions to the budget.
3. **Volunteer/Intern Management:** Volunteer Management is a decentralized process, with limited central PSO control.
4. **Lack of Electronic Workflow:** All Personnel Actions are paper driven processes which are very tedious/labor intensive.
5. **Lack of electronic document management:** The employee record is kept in paper as the current system does not accommodate scanned images/attach to the employee file.
6. **Licenses and Certifications:** The City uses multiple systems across departments to track required licenses and certifications.
7. **Compliance Reporting Limitations:** The current system does not track federal compliance related items such as EEO job categories. This makes reporting very tedious/labor intensive.
8. **Employee Performance Management:** Employee goal plans and performance evaluations are a paper based process. While grading/comments are captured in SAP, the annual evaluations are facilitated outside of the system.
9. **Discipline Tracking:** SAP is not being utilized to track disciplinary actions or employee grievances. All associated grievance or disciplinary documentation is housed in the City's SharePoint system.
10. **Limited Employee Self-Service:** The City does not have more robust employee self-service functionality such as electronic benefit self-enrollment functionality.
11. **Limited Manager Self-Service:** SAP does not enable managers to manage their teams and for employees to manage their transactions and information.
12. **Reporting Limitations:** The reports in some cases may lack the detail needed and this can drive the need for separate spreadsheets to track personnel data. There are mandated reports that need to be filed that SAP simply does not track. EEO reports are difficult to configure, partly because the system was not set up for governmental reporting. Again, this leads to redundancies and process inefficiencies.

OPPORTUNITIES

If fully deployed, a public sector focused ERP system will provide functionality that can resolve many of the items listed above. Some of these automated functionalities include:

- Automated performance evaluation/review
- Tracking for investigations, disciplinary action, FMLA, grievances, reasonable accommodations, etc.
- Workflows for policy distribution, employee changes and improved data integration for auto-populating information
- Employee Self Service
- Benefit Self Service

Overall, with new software integration and workflow many of the issues listed above will be resolved and a savings of resources should be realized.

2.12 UTILITY SERVICES MANAGEMENT / REFUSE

The City of Palo Alto Utilities (CPAU) started using SAP for their Utility Billing software needs in 2009. Refuse billing was added to SAP ISU-BM at a later date. CPAU is currently serving about 30,000 customers and manages seven different types of services.

STRENGTHS

1. **SAP Customization:** The current SAP software can be configured to the City of Palo Alto Utilities' needs. An example would be the many unique validations that have been created in the Utilities Billing to alert the end user when there is a billing exception. Users like the fact that many views can be customized, the Utilities Billing layouts are flexible and FICA screens can be modified to users' desire
2. **Data Availability:** Level of detail that is available in Utilities Billing view in IC Web is impressive. The amount of data available and the display of Business Partner & Premise in IC Web are important to the Utilities users.
3. **Data Export:** Departments can easily export data from SAP to Excel
4. **System Speed:** In general SAP is very reliable and fast
5. **Reporting Flexibility:** The device management and FICA module of the SAP Utilities has a lot of flexibility when it comes to reporting

WEAKNESSES

1. **SAP ISU Maintenance:** Because SAP is complex, is hard to maintain it with only internal resources, thus specialized consultants are required. CPAU is only able to maintain the software with its current resource. The City's SAP knowledgeable staff has been reduced so that the remaining staff only have time to maintain the database. All enhancements have to be contracted out to a third party and it has been difficult and expensive to find quality consultants to make the necessary enhancements.
2. **SAP ISU Customization and Upgrades:** It is time consuming and costly to maintain and customize SAP ISU modules
3. **SAP ISU Standard Reporting:** Very few standard reports have been defined in SAP so the CPAU relies on the SAP BI software for most of their reporting needs. However, BI is very complex and requires a specific skill set to master. Thus the data is typically downloaded and manipulated in MS Excel. All statistical reporting comes from Green Waste so the City is very dependent on their third party hauler for data. Currently Green Waste maintains all the data on who has the trash containers/bins. If this information was included in the file that is sent to the City, the City would no longer be dependent on Green Waste for their reporting needs. Service Orders Dashboard with employee defined areas is needed to visualize all SO information on one page.
4. **Legislative Requirements:** SAP ISU modules have not been upgraded in a while, thus the software configuration does not incorporate the latest legal requirements which has forced the City to use manual workarounds in order to fulfill legal requirements. This is becoming an issue with net metering and peak/off-peak billing. As the utility industry becomes more environmental friendly, more legislation will likely occur that will affect how the bills are processed. If the software does not have updates to automate these mandated processes, manual workarounds will have to continue.
5. **SAP Training:** A user needs to be trained well to maneuver through the program. Most people only know what they use frequently and really don't know what else might be available to assist them with their job. Some also don't understand how their actions in the software affect others.
6. **Utilities Business Practices:** Most users feel that standard functionality is missing in the SAP ISU software; therefore they have to find less efficient methods to perform tasks to do their jobs, which adds more stress and frustration. The identification of best practices and possible best of breed utilities software to satisfy them should be taken into account.
7. **Pressure to Improve Services:** Due to the location of Palo Alto the majority of the City customers are more tech savvy than average, therefore their expectations for sophisticated tools are higher than normal, which leads to pressure for improvement. The current customer

utilities portal is lacking presentation and requires core functionality that is absent in the current release.

8. **Utilities Billing:** Corrections/fixes/enhancements to the utilities invoice are challenging, lengthy, costly, time consuming and difficult for the customer to understand. If an adjustment needs to be made on a bill from a few months back, each bill after that adjustment will also have to be manually adjusted. The current utility invoice/bill is not customer friendly. Some of the miscellaneous refuse charges are billed through SD because there is no account in CRM, but it is billed on a utility invoice with no description and it causes many customers to call in for assistance on what they are being billed for. Budget billing is very complicated for the customer and time consuming for staff when a payment is missed. This is due to penalty amount not being printed on the budget bill. For payment arrangements, the staff has to create two payment arrangements per customer to ensure that the unpaid amount goes back into delinquency.
9. **Utilities Rates Calculations:** The rate design is challenging and limited in SAP. The City is running out of rate codes so they are limited in adding more services. To set up rate assistance, currently the user has to mark a flag twice on each service.
10. **Refuse Billing:** The design/configuration for refuse billing had to be manipulated to work with the configuration set up for utilities, since the City did not purchase the SAP Waste & Recycle module. Also there are issues with transferring of data between the third party (GreenWaste) hauler's software and SAP, which has caused incorrect billings.
11. **System Validations:** Many validation rules have been set which is causing thousands of exceptions/plausible to be reported which is taking many labor hours to research and fix. Many classification of errors once analyzed, no longer need to be reviewed at each step in the billing process but they still reoccur.
12. **Meter Reading Technology:** It is very outdated. Reads are being hand keyed into the majority of the hand held devices. Only 11% are drive by radio type meters. The downloading the meter information to the hand holds is very complicated and restrictive. The SAP system only allows for one meter read action per day.
13. **Meter Inventory and Inspections:** Meter inventory is difficult to enter. Meter testing/inspection results cannot be tracked in SAP so Excel is being used instead.
14. **Utilities AR Collections:** Currently SAP ISU FICA does not have an aging report that shows customers and how delinquent they are. Therefore, many delinquent accounts get unnoticed until 6 months later. Accounts that have a delinquency less than \$150, do not go through the delinquent process and are maintained on a separate spreadsheet. Comparison of SAP ISU AR balances to SAP SD AR balances is not performed currently.
15. **Service Order Management:** Customers cannot enter their own service order. The electrical engineers create the service order estimate using AUD software and then the estimates are loaded in SAP to compare to actuals. When looking at charges on a service order, the cost line items do not sum up to the same line that has the planned cost, so the plan/Actual comparison % is never accurate. City has no way of dispatching service order tasks directly from SAP to employee calendars.
16. **SAP ISU Integrations:** There is no direct integration of Geodesy with SAP ISU modules (i.e. DM). Every installed meter has information that has to be inputted into the GIS software.
17. **IC Web Issues:** CSR Dashboard is seriously lacking regarding ready data. Retrieval of data requires multiple selections. Back buttons in IC Web do not consistently go back one level. Lack of refresh button.

OPPORTUNITIES

If the City of Palo Alto Utilities would fully implement a best of breed utility billing software solution it would resolve many of the weaknesses listed above. Some of the advantages of implementing a best of breed solution are:

1. A fully featured, functional and configurable solution, one that is constantly evolving to meet CPAU's business needs without significant customizations or need for external spreadsheets to complete core business process functions.
2. Integration with industry-leading applications due to formed partnerships and extensive experience interfacing and integrating with many other third party applications.

3. Successful implementations because the vendor's staff only works with utility operations.
4. Hundreds of standard reports come with the standard software.
5. Majority of the best of breed solutions also come with an Ad-Hoc reporting tool that is very user friendly.
6. A robust web portal which allows the CPAU's administrator to make changes to the portal when necessary.
7. The use of mobile devices in the field.
8. Standard software product releases and updates which include State and/or Federal mandated changes. The cost of these updates is usually included with the software maintenance agreement.
9. Regional user group meetings focused only on utilities.

2.13 CURRENT TECHNOLOGY PROFILE

OVERVIEW

The City's IT staff with the sporadic help from outside consultants, support over 200 applications and charge back the rest of the city departments. The current IT environment at the City includes:

1. The City network is spread across 30 sites interconnected in a star topology and uses dark fiber optic connections, running at 1GB for the majority of the sites. The City has a dedicated Gigabit fiber infrastructure connecting all remote sites, so all sites can be actually treated as part of an extended LAN topology.
2. The City uses HP network equipment and is configured to have firewall redundancy, IPS redundancy and core aggregation switch redundancy.
3. Remote access to the network is provided via PPTP VPN with AD/RADIUS authentication and remote desktop service. The other network security features are rogue AP detection, wireless spectrum, redundant controllers, and access control.
4. The City does not have a "bring your own device" or a mobile data management policy, but is currently evaluating potential strategies and solutions which will allow access to the City's data. SolarWinds is used to administer, monitor and detect network issues.
5. For majority of the servers, the CPU utilization is normally greater than 50%, but the City does not formally track the network traffic volume associated with the servers. For the server maintenance, the City has vendor hardware and software maintenance contract.
6. Windows 2003 is the operating system used on the majority of the servers in the data center. There are instances of Unix/Linux servers at the City as well. System access audits are performed on a regular basis and access is adjusted accordingly.
7. The organization has standardized on the use of HP-UX 11.31 servers. The City has no cloud services and is looking into various options (SaaS, IaaS and PaaS). A centralized storage system is available for use and has expansion capabilities, but not without affecting the backup windows currently being utilized.
8. Key services and applications on the servers are monitored using Solution Manager and early watch reports. Backups are currently performed periodically to disk and then to tape and disk-to-disk-to-tape using HP Data Protector 6.x software. The results of the backups are monitored.
9. Oracle database platform is used as database management systems which serve various applications.
10. Outlook is used for office productivity such as e-mail and calendaring, and there are approximately 1200 e-mail mailboxes in use at the City.
11. The SAP ECC 6.0, BI, CRM, and ISU are installed on premise, on non-virtualized servers

STRENGTHS

Selected strengths of the current IT environment include:

1. **Network:** The availability of the network is very high while its reliability is stable with minor issues
2. **Data Center Security:** All systems in the data center are protected by UPS systems and also by a power generator. Access to the data center is protected by a door access control system.
3. **Antivirus and Anti-spyware:** The operating system is running on the latest service pack and antivirus and anti-spyware are run multiple times a day.
4. **Audits:** Security and license audits are conducted yearly
5. **System and Data Backups:** Nightly there is a file system back up, weekly database backups, data is tested quarterly and an official test policy has been put in place
6. **Data Retention:** The city is following the 7 year data retention policy by keeping back-up tapes, which are Weekly/monthly sent to off storage location
7. **Centralized Management:** The City is using Solution Manager to reduce and centralize the management all its systems and end-to-end business processes

WEAKNESSES

The key weaknesses of the current environment include:

1. **Encryptions:** The backups are not encrypted, but are stored at an off-site secure data center
2. **Server Redundancy:** The City doesn't have server redundancy
3. **Workflow/Notifications:** The City has not implemented in the SAP modules and portals the workflows and notifications
4. **Cloud services:** The City doesn't currently use any type of cloud services (SaaS, IaaS, PaaS)
5. **Document Management System:** The City didn't purchase or implement any major document management systems, due to storage space concerns
6. **Data Archiving Strategy:** The City doesn't have in place a data archiving strategy for the SAP ECC 6.0 data.
7. **Disaster Recovery Plan:** The City currently doesn't have a documented disaster recovery plan in place
8. **Service Packs/Updates:** SAP upgrades have not been performed in long time
9. **IT Policies:** The City had not written and implemented some of its IT policies, like the "Patch Policy"
10. **SAP Training:** SAP is complex, but reliable and most issues come down to IT training
11. **SAP Consulting Support:** Third party SAP support consultants available in the market don't have deep knowledge of the areas the City needs help with. The ones that are available are very expensive and need to be booked ahead of time and they work on East Coast timeframe

OPPORTUNITIES

Overall, specific opportunities for improvement in regard to the current technology environment include:

1. The IT department should finish the full implementation of Solution Manager.
2. The City should consider encrypting at least of its backups stored at the off-site data center.
3. IT processes should be documented and followed to ensure policies and best practices are followed.
4. The City should implement and document its disaster recovery plan as soon as possible
5. Regardless of its ERP system in operation, the City should not allow more than 1 year to pass, before it performs the latest upgrade. Otherwise it runs the risk of not being able to operate properly and not have the ERP system supported by the vendor. Thus, the IT department should install the latest SAP upgrades as soon as possible, if the City will decide to keep SAP as its ERP of record.

6. The City should consider implementing and turn on as many Workflows and Notifications as possible in order to improve segregation of duties issues and help users complete appropriately and on time all they tasks
7. The City should consider its storage issues and find a solution to implement a City wide document management system and policy, to help user handle all support documentation electronically relating to various transactions to meet statutory requirements
8. Budget permitted, the City should consider implementing a data archiving strategy, but only after it stabilized its processes and finished implementing its main software systems
9. The IT department should document and maintain written SAP support procedures, to ensure consistent and proper maintenance of the system
10. Since ERP systems are complex, all IT staff should be trained through rotation every year in the latest changes of the ERP system in order to maintain it properly

3 ERP Marketplace Assessment

3.1 INTEGRATED ERP ENVIRONMENT

The purpose of the Marketplace Assessment is to provide the City with an overview of the current financial system and ERP software vendor marketplace. Information provided in this marketplace assessment was gathered from prior Plante Moran project and consulting experience, feedback from City staff during interviews, and external research.

Generally, enterprise financial system solutions evolved out of a desire to provide the functionality of two or more systems, such as Financials and Human Resources, in an integrated software solution. Enterprise software solutions experienced its first major growth in private sector businesses in their manufacturing and supply chain operations. Many of these “Tier 1” ERP solution providers offer broad solutions designed specifically for the private sector. Over the past several years, these solutions were enhanced, configured and tested in public sector organizations. With these enhancements, these solutions originally developed for private sector organizations could now be deployed in a public sector setting.

There are also a number of “Tier 2” ERP software providers that originated and offer specific vertical solutions designed for the public sector including fund accounting encumbrance accounting, sophisticated budgeting, grants management, etc. and capabilities which are pervasive in this segment. These solutions are typically characterized as “Tier 2” solutions and are normally deployed in medium sized public organizations. Over time, there has been increased focus from these Tier 2 vendors towards developing niche solutions designed to compete with the Tier 1 providers. A third tier of software providers also exists that are implemented in small organizations and will not be discussed in this report due to the lack of relevance to the City. Medium size government agencies, such as the City, often select financial management solutions identified as either Tier 1 or Tier 2 solutions.

The most basic differentiation between Tier 1 and Tier 2 providers lie within the depth of functionality, breadth and complexity of the software.

Tier 1 providers have a broader offering that often include modules for Customer Relationship Management (CRM), Enterprise Asset Management (EAM), Learning Management, Analytics and Reporting, Data Warehousing, and Project Management modules. While Tier 1 providers offer robust core financial modules, as well as HR and Payroll, typically they rely on third party vendors for functionality specific to government activities in other functional areas. Most, but not all, Tier 1 providers have a large network of implementers available to implement their solution, many of which have dedicated public sector practices. The most significant challenge with Tier 1 solutions is that government agencies often find that they are not able to dedicate enough technical resources to leverage expansive capabilities of the system to meet their needs. Due to their flexibility (thus complexity) Tier 1 implementations are most successful at organizations with structured IT software governance and/or ERP process governance, not typically demonstrated in organizations which have implemented a fragmented software approach. In addition to the necessary governance, strong IT project management is also critical for Tier 1 deployment. In several instances, Plante Moran has worked with public sector clients who have implemented Tier 1 ERP systems and the following situations have prevented them from realizing the full benefit of these systems; thus diminishing their return on investment:

- The governmental body did not budget the necessary capital to implement the solution and optimize current business processes due to cost factors related to capital budget and resource constraints.
- The operating costs to maintain Tier 1 solutions relative to software maintenance and support consumed operating budgets thus creating a situation where hiring the necessary internal resources to maintain and enhance these systems (e.g., data mining, workflow, custom reporting, etc.) was not feasible.

Users of Tier 2 solutions often find that these solutions are more prescriptive; i.e., governmental best practices are designed within the application. This is intuitive since Tier 2 solutions were designed for use within the government sector. They may offer less flexibility and configurability than Tier 1 system but, as a result, are typically less cumbersome to implement within their organization, because of their native public sector design and more prescriptive implementation approach. Tier 2 vendors tend to have their origin based in the government sector and have been improving and updating their software products to offer a greater range of modules and functionality. As such, the Tier 2 vendors are touting themselves as viable alternative solutions to Tier 1 providers. However, beyond enhanced functionality, the scalability of the services being offered by Tier 2 solution providers is a strong consideration when determining the best overall solution. Unlike Tier 1 solution providers, nearly all Tier 2 solution providers implement their own software and do not rely on third party implementers.

The software marketplace has seen the emergence of solutions being touted as Tier 1.5's, or "one and a half." Originally positioned as Tier 1 or Tier 2 solutions, these vendors have now positioned themselves between the two tiers and often offer enhanced functionality in areas such as HR and Payroll. They are also offering modules that are able to scale up to a larger client's complexity and transaction volume but at a lower cost and time to implement as compared to a Tier 1 provider.

Many of the solution providers will propose modules in the first two areas noted above as components of their overall solution set that are characterized as "best-of-breed" solutions. For HR/Payroll specifically, there are a number of niche solutions that have frequently been implemented by public sector organizations to complement their existing financial system investment to obtain a "best-of-breed" approach.

3.2 BEST-OF-BREED

A modification to Integrated ERP for delivering enterprise information solutions is the "best of breed" approach. This solution architecture is based upon selecting the best individual product solution for each functional requirement within the organization. The City's current environment represents a "Best of Breed" approach, utilizing a combination of systems, for example: SAP (Financials), Questica (Budget) and custom/shadow systems that are not state-of-the-art. Because a business enterprise operates in an integrated, rather than "stovepipe" fashion, creating an enterprise information solution using a "best of breed" strategy involves designing, implementing, and supporting the required technology integration. This, in fact, has represented a significant challenge for the City. Hence, the City should seriously consider the various potential benefits and challenges inherent in a "best of breed" approach.

In some cases, there isn't a choice, and the organization must integrate "best of breed" products to address requirements. This is the case when the functionality is specialized enough so that it does not exist in extended ERP systems, e.g., GIS, DCS/SCADA, and LIMS. This is one of the reasons why ERP vendors and 3rd Party software companies have developed Enterprise Application Integration software, as well as why consulting firms offer network integration programming assistance.

Benefits of "Best of Breed." The "Best of Breed" solution strategy enables the organization to select the optimal solution for a particular problem or function within the enterprise. Hence, on a requirement-by-requirement basis, there is less compromise required. This can also have some benefits related to sizing the solution. The customer can avoid "overkill," or "gold plating" solutions on the one hand or, on the other hand, have an insufficient technology fit relative to requirements, that may later result in the development of supplementary, or shadow systems to make up for product limitations. Because of the more exact "fitting" of the solution to the discrete problem, the initial license and implementation costs may be more appealing. A critical element is the importance of identifying and understanding the organization's functional requirements.

Challenges of "Best of Breed." The countervailing perspective, as previously described in this chapter's description of ERP systems, is that the whole of the enterprise solution is greater than the sum of its parts. Hence, optimal individual product selections may not result in the best enterprise-wide

information solution. This can be reflected in both the technical challenges required for creating and maintaining an integrated solution, the likely limitations of even an integrated “best of breed” solution, and the total cost of ownership.

“Best of Breed” solutions, being created and implemented by different firms lack the single integrated enterprise database common to ERP solutions. With ERP solutions, integration is designed into the product and data is shared in real-time between the application modules. With “best of breed” solutions, the customer must design and manage application integration. Current technology makes this somewhat easier with industry programming and database standards, and well as Enterprise Application Integration software. However, design, customization and maintenance of integrated systems is far from trivial. Without integration, a “best of breed” approach can’t be considered an enterprise information system.

Integration of systems can exist at a variety of different levels. One should be careful not to allow vendor claims of product “integration” to be taken at face value. The devil is in the details. The following are examples of some of the problems and implications relative to the integration challenge:

- End user ability to drill-down into the underlying data may be more limited if data resides on multiple platforms and databases.
- Report development and crosscutting analysis of data across the organization is more complex and will most likely require the development of an enterprise data warehouse.
- Workflow technology may be more limited across platforms. Microsoft Office email products can be used as a common “pipeline” backbone for workflow notifications. However not all vendors have workflow capabilities that are integrated with off-the-shelf Office products.

A more global issue is that when a customer adopts a “best of breed” strategy, they assume primary responsibility for identifying, creating, enhancing, and maintaining product integration. One of the inherent benefits of the ERP approach being sold by vendors, and demanded by the market, is in providing and supporting an integrated enterprise solution. As a result, the market applies additional pressure to drive creative responses to integration challenges. To some degree both ERP and “best of breed” vendors have created discrete integration solutions. This is usually in response to individual client requests, and if there is sufficient demand, vendors may productize and provide varying degrees of support for these solutions. However, as previously noted, the nature of these interfaces needs to be carefully evaluated.

An additional consideration is accurately estimating the total cost of ownership. The cost of the solution is typically identified as including initial licenses, training and implementation costs, as well as, ongoing costs for maintenance support. In addition, a significant cost may be related to developing and maintaining interfaces between systems. IT staff or consultants must create and document point-to-point interfaces between applications or implement and maintain Enterprise Application Integration software. Developing integration capabilities is a type of customization and, as a result, must be tested when relevant software application product upgrades are implemented. Hence, the total cost of creating an integrated, “best of breed” solution should include these total lifecycle costs, including the opportunity cost of applying IT staff and resources to create and maintain these interfaces.

3.3 ALTERNATIVE SOFTWARE DELIVERY OPTIONS: HOSTING (“CLOUD”)

In the past ten years alternative software delivery models have made their way into the ERP marketplace, the most popular of which are hosted solutions. While the popularity of hosted enterprise solutions did not materialize in the early part of this decade as many had predicted, organizations are slowly embracing hosted solutions in order to relieve some of the burden of an overworked business and technical staff. There are a variety of hosting models available to the public sector today, many of which have been used interchangeably by vendors providing enterprise software to the public sector and all identified as ‘the cloud.’

In general, the market for full scale ERP delivered via ‘the cloud’ is still immature in the public sector. However, SaaS has proven successful for more specialized applications such as document management, CRM, and selected human resources applications. Private Cloud Computing is among the highest interest areas across all cloud computing according to Gartner, with 75% of respondents in Gartner polls pursuing a strategy in this area. One of the major goals is the evaluation of virtualization-driven value and benefits. In addition, Software as a Service is rapidly gaining adoption; leading Gartner to forecast more than 50% of respondents will have some form of SaaS based application strategy by 2015. Factors driving this adoption are the high priority organizations are putting on customer relationships, gaining greater insights through analytics, overcoming IT- and capital budget-based limitations, and aligning IT more efficiently to strategic goals.

Overall, hosted solutions are gradually becoming a popular way to acquire modern software while containing costs, especially amongst small-mid market public sector organizations.

3.4 ERP VENDOR CONSOLIDATION

Consolidation among public sector software vendors has left a fewer number of vendors providing customized services to the Public Sector than in prior years. Organizations such as Harris, Oracle, SunGard Public Sector, and Tyler Technologies have acquired competing software offerings over time and, to varying extents, marketed, licensed, implemented and supported each of them. As such, the remaining vendors have a larger installed base per vendor. It is anticipated that, over time, these vendors will reduce, not increase, the number of ERP solutions that they will maintain and support for the public sector. This consolidation of solution offerings is typical in the software industry as a result of their desire to create a sustainable business model. Thus, it is important during the due diligence and contract negotiation process, to consider any the future product plans available from software providers, with the purpose of maximizing solution longevity and avoiding expensive capital outlays for upgrades and for replacements.

3.5 SUMMARY COMPARISONS

Summary Comparison: Tier 1 versus Tier 2

The following table identifies some of the key differences between Tier 1 and Tier 2 software providers on issues such as support requirements, cost of implementation services, cost of major version upgrades, software support channel, and other factors:

Characteristic	Tier 1 Vendors	Tier 2 Vendors
Sample Representative Vendors:	- Oracle (PeopleSoft and Oracle e-Business Suite) - Workday - SAP - Oracle (JDE 1.5) - Lawson – (1.5) - CGI – (1.5) - Others	- SunGard Public Sector (e.g. OneSolution) - Tyler Technologies MUNIS and Eden - New World Systems - Harris (e.g. Innoprise, etc.) - Others
Design Considerations	- Developed product for private sector and later adapted for public sector - Many modules specific to public sector - Larger organizations with greater R&D budgets, offer more robust technology	- Primarily designed for public sector - More prescriptive functionality and less conducive to customization without altering source code - Often leverage common municipal

Characteristic	Tier 1 Vendors	Tier 2 Vendors
	- Robust development tools - Scalable to leverage most robust development and database environments	- technology standards (e.g. MS SQL database). Some support Oracle - Environments leverage 3rd party tools (database, report writer, etc.)
Ongoing Technology Support Resource Requirements	- Most require multiple technology FTE to support - Also impacted by level of integration with other organizational systems	- Requires fewer technology FTE to support - Also impacted by level of integration with other organizational systems
Software Functionality	- Core modules have robust functionality - May lack public sector specific features (e.g. encumbrance rollover, GASB 34 reporting, etc.) - License costs per user typically more expensive than Tier 2	- Incrementally less robust functionality for core components - HR/Payroll solutions are frequently less robust as compared to Tier 1 offerings - Many vendors offer additional public sector modules, such as fleet management, request for service, etc. - License costs per user typically less expensive than Tier 1
Implementation Services for New Installation	- Requirement for multiple full time staff to implement - Requires significantly greater implementation vendor resources than Tier 2 to implement including key staff that are full-time to the project - Software implementers are typically integrators / channel partners - Implementation services cost ratio comparison to license fees often many times software cost (frequently 3:1 or higher)	- Vendor “Homework” approach has organization responsible for many implementation tasks - Frequently implemented with organization resources not dedicated to the project - Rarely requires full-time vendor staff to implement - Software vendors also implement their own solutions - Implementation services ratio typically closer to 1:1. 2:1 would be more robust services approach
Staff required for Implementation ¹	15-30 FTE	3-7 FTE
Ongoing support staff required	6-14 FTE	1-3 FTE

¹ Based on Plante Moran’s experience working with other clients on ERP selection and implementation initiatives.

Characteristic	Tier 1 Vendors	Tier 2 Vendors
Cost Model for Major Version Upgrades	• Most major upgrades include significant license fee costs • Most major upgrades require significant levels of vendor services to assist	• License fees for version upgrades often included with maintenance fees • Most major upgrades require moderate levels of vendor services
Software Support Channel	• Mixed, some direct, some through implementer / value added reseller channel	• Primarily direct vendor support
Hosting Options	• Generally hosted internally, some offering ASP. Workday is one of the only multi-tenant web-based options.	• Generally hosted internally, some offering ASP. Few multi-tenant web-based options.

Summary Comparison: On-Site vs. Hosted

Characteristic	Advantages	Disadvantages
On Premises / Internally Hosted Financial Applications Environment	• City has design control of application architecture to focus on reliability, availability and scalability • Optimal solution for “heavy-weight” applications (not necessarily designed for thin-client deployment), typical of Tier 2 solutions. • Application are generally more customizable and more easily able to be integrated to County best of breed business applications • Direct data access for custom reporting • Ongoing maintenance costs are less substantial that with hosted solutions • Application upgrades can be performed and coordinated on the City schedule incrementally more so that with a vendor hosted solution • Leverages existing technology, people, and contracts	• System reliability, security, maintenance, and management will remain the responsibility of the City • Higher capital costs – particularly for hardware and related operating and database software • The time required to implement a new City hosted environment is typically longer than with the vendor hosted model • Workstation replacement cycles must be maintained to more reasonable levels
Vendor Hosted Environment	• Shared services model will allow the City the benefit of additional technology and tools to enhance the security and administration of the environment, which otherwise may be unaffordable	• If the City’s network or Internet service is down, then its employees lose access to the application. • Uptime and disaster recovery become more critical

Characteristic	Advantages	Disadvantages
	- Decreased technical administration workload for City IT staff. Cost savings associated with reduced demands on IT personnel - Typically, there are fewer workstation software installation requirements potentially lengthening workstation replacement cycles. - The ASP vendor is responsible for installing the system and its subsequent support. Any type of technical issue can often be immediately isolated to the software client or host application providing the software. - The City is able to predict and control costs more accurately, depending on the negotiated subscription contract & fees.	- Changes to meet the City's unique requirements may not be possible. The City may have to adapt certain system administration processes to be consistent with vendor processes. - Database or information security risks increase with the ASP model. Distributed responsibilities for security practices make for a more complex environment. - Integration to City hosted best of breed business applications becomes more complex - While reducing City technical support effort, will require City IT managers to increase effort with maintaining the vendor relationship. The City would need to manage a Service Level Agreement on an ongoing basis and specifically during periods of contract discussions or consulting during customization. - Volatility of future costs: ASP is a subscription service and fees are paid over a period of time. The City can negotiate an initial purchase price and annual fees, but has less control over subsequent subscription fees and is subject to rate hikes after the predetermined contract period ends.

4 Options Analysis

Consistent with project objectives and based on the evaluation of the current functional and the technology environment, the City has three primary options in regard to the strategic direction of a future applications environment, with variations/alternatives within multiple options. These are defined at high level in the table below and analyzed in additional detail throughout this section of the report. Key assumptions were necessary in preparing these estimates and these are represented in the Detailed Cost of Ownership Details and Assumptions Section located in Appendix D.

Option	Summary of Options/Alternatives
Option 1: Status Quo with Investment	Do Not Change the Current Application Environment. Remain on the current version of SAP and retain existing best of breed systems.
	Upgrade SAP and pursue one of the alternatives below:
Option 2: Upgrade SAP	- Upgrade all existing modules and retain existing best of breed systems. - Upgrade only SAP Core Financials/HR/Payroll modules, retain existing Best-of-Breed systems and procure a new 'Best of Breed' Utility Billing Solution to replace SAP Utility Billing.
	Replace Current Systems with an Integrated Public Sector Focused ERP System and pursue one of the alternatives below:
Option 3: New ERP Environment	- Replace SAP and current best of breed solutions with a fully integrated public sector focused ERP solution and procure a separate utility billing best-of-breed solution - Replace remaining SAP functionality with a fully integrated financials/hr solution, retain the current best of breed systems and procure a utility billing best of breed.

Further details are described within each option analysis including their advantages and disadvantages and other key factors for the City's consideration.

4.1 OPTION 1: STATUS QUO WITH INVESTMENT

OVERVIEW

The City always has the option to remain with the 'status quo' environment and remain on its current version of SAP and additional best-of-breed systems. This option represents the City's current investment position with the resources currently in place supporting the SAP environment on premise today. It also represents the existing mix of best of breed or third party applications interfaced with SAP supporting the budgeting, fixed asset / asset management, human resources, purchasing, revenue collection, treasury, and utilities management. The City is paying a premium for the addition of best of breed solutions when core SAP functionality exists but cannot be fully realized.

ADVANTAGES

Included below is a list of the most significant advantages to continuing with the status quo at the City:

1. **Focus on existing enhancement requests:** The City could focus on completing the existing SAP enhancement requests in the queue
2. **Limited Operational Impact:** This option would not impact the financial and human resources functions which have a broader internal user base.

DISADVANTAGES

Included below is a listing of the most significant disadvantages to continuing with the status quo at the City:

1. **Product ‘Sunset’:** The City is currently reaching the end of SAP’s ECC 6.0 support in December 2015 and will be charged a premium for support beginning in 2016.
2. **Staffing Challenges:** The City’s SAP support team is not adequately staffed in number or sufficient expertise to keep pace with the level of service demanded by the City’s business units. The delays in supporting the core system environment are driving staff to pursue best of breed solutions replicating the capabilities within the SAP core and extended modules.
3. **High Costs:** The City’s investment in supporting its ERP environment is significantly higher than the vast majority of peer communities Plante Moran evaluates as it conducts its needs assessments in terms of employees, operational complexity, and ERP requirements represented by the City and inventoried in this evaluation.
4. **Interface Complexity:** The number of interfaces the City requires demands a system architecture that facilitates data exchange and the present, legacy environment is not optimized in this manner.

OPPORTUNITIES

1. **Training and Support:** Identify staff training requirements and reporting needs within all business units to support the systems administration for the next three years. Seek to provide tactical training options to the City’s team especially in the areas of reporting and analysis.

OPTION 1: COST ESTIMATES AND SUMMARY

Based on Plante Moran’s experience with projects of similar scope, we have estimated internal and external cost projections for the City to remain in its existing environment/status quo as represented below. Key assumptions were necessary in preparing these estimates and these are represented in the Detailed Cost of Ownership Details and Assumptions Section located in Appendix D.

Cost Category	Option 1	
	ON PREMISE Status Quo with Investment	
EXTERNAL COSTS		
One-Time Cost Summary		
Software License Fees	\$	-
Additional Hardware Costs	N/A	
Consulting Implementation / Data Conversion / Interface Development	\$	-
Training	N/A	
System Selection & Implementation Planning Fees	N/A	
Total External One-Time Costs	\$	-
Reoccurring Cost Summary		
Annual Software Licensing & Solution Support	\$	667,910
Consulting Support Services	\$	250,000
Cloud (includes Licensing, Support, Interfaces & Consulting Services)	\$	-
Training	\$	112,500
Total External Recurring Costs	\$	1,030,410
INTERNAL COSTS		
Reoccurring Cost Summary		
Current Support FTE	\$	2,073,000
Additional Support FTE'S	\$	-
Total Internal Recurring Costs	\$	2,073,000
Year #1 Grand Total Cost	\$	4,133,820
FIVE YEAR ESTIMATES		
Five-Year Estimate *	\$	17,138,248.00
* Estimate includes one-time and reoccurring costs during year one, annual software licensing and solution support for planned application purchases in year one are assumed to incurred in years 2-5 only, and the future value of investments has been adjusted for years 2-5 to account for a 3% annual rate for inflation.		

For several reasons, Palo Alto does not appear to have the luxury of maintaining the status quo and continuing to use the existing SAP system 'as-is' for several more years. As noted in the Gap Assessment section of this report, a number of functions work poorly at best. The support for the SAP Utility Billing is challenged and this area is especially strategic for the City because of its importance as a revenue source. Lastly, the SAP release the City is currently running is nearing the end of its lifecycle, and the City will have increased difficulty in obtaining support for this software if it does not upgrade.

4.2 OPTION 2: UPGRADE SAP

OVERVIEW

The City could decide to increase its current SAP investment and pursue a number of upgrade options. This choice represents the City upgrading its current SAP investment and pursuing one of the alternatives below:

1. Option 2, Alternative A: Upgrade all existing SAP modules and retain existing best of breed systems.
2. Option 2, Alternative B: Upgrade only SAP Core Financials/HR/Payroll modules, retain existing Best-of-Breed systems and procure a new Best of Breed Utility Billing Solution to replace SAP Utility Billing Functionality.

4.3 OPTION 2, ALTERNATIVE A

Upgrade SAP and Retain Existing Best-of-Breeds.

This option represents the City's migration to a Hybrid Cloud where the City would take advantage of the HANA Enterprise Cloud to take advantage of hosted and managed services from SAP. The City would assume maintenance responsibility for the non-SAP applications that would reside in this environment and will retain ownership of these licenses.

ADVANTAGES

Included below is a listing of the most significant advantages to upgrading the current SAP environment and retaining the existing best-of-breed portfolio:

1. **Quicker Implementation:** The City could accept the existing SAP proposal and move quickly to begin work on the project. Even if the City would decide to bid the project with alternative consulting vendors, as discussed below, the project would still move more quickly than one requiring selection of a new ERP system.
2. **Builds on Existing SAP Expertise:** This alternative takes advantages of existing SAP expertise among the general City staff and also the IT staff.
3. **Builds on Existing SAP Relationship:** This alternative also allows the City to build on an existing relationship with SAP, rather than begin a new relationship with a new vendor. The City retains ownership of its SAP licensing and has flexibility as to the environment it chooses to manage its applications. The City will continue to pay an annual licensing fee that will include software maintenance, migration services for SAP's core finances, a new HR solution, and a new utilities billing solution.
4. **Utilization of Modern Cloud Technology:** The City would be able to leverage the HANA Enterprise Cloud architecture for both its business intelligence and application interface needs.
5. **Improved Functionality:** The SAP SRM module, enterprise asset management solution, e-procurement solution, and an HR module are incorporated in this option.
6. **Staff Optimization:** Internal staff support would be reduced by 4.4 FTE's in this new environment for a total of 8 dedicated FTE's. This includes seven (7) staff dedicated to supporting SAP and one staff member dedicated to managing of the City's Enterprise Asset Management System.

DISADVANTAGES

Included below is a listing of the most significant disadvantages to upgrading the current SAP environment and retaining the existing best-of-breed portfolio:

1. **Mismatch of Technology to City's Business Requirements:** The City's ERP requirements do not appear to cross the threshold of being unique enough to require a Tier 1 ERP system and the capabilities of Tier 1.5 and Tier 2 systems are believed to fulfill the City's strategic needs.
2. **Proliferation of Best-of-Breed Systems:** The City continues to invest in best of breed solutions that duplicate capabilities available by the core SAP functionality available (e.g.

e-receivables, asset management, human resources). The addition of specialized best of breed applications increases the City's overhead to test, manage, and coordinate the version control for each system interface.

3. **Complexity of Interface development and Support:** The specialization necessary to manage each additional best of breed application requires ongoing training that must be coordinated between the business unit (core application stakeholders) and information technology so institutional knowledge is retained.
4. **High Cost of Ownership:** Excess cost burden over five years exceeds \$25 million in external and internal funding is extreme.
5. **Utility Billing Challenges:** The SAP utilities billing solution proposed may require further evaluation and has not been determined to adequately meet the requirements expected by the Utilities Department.

4.4 OPTION 2, ALTERNATIVE B:

Upgrade SAP Core Financials/HR/Payroll Modules Only Keep Existing Best-of-Breed Systems Obtain Best of Breed Utility Billing Solution.

This option is essentially identical to as Option 2 'a' above with the exception of the addition of a utilities best of breed system. The overlap between the core SAP and best of breed solutions remains in this option and it does not appear to offer a viable strategic alternative.

ADVANTAGES

Included below is a listing of the most significant advantages to upgrading the current SAP financials/HR/payroll environment only, but also selecting a new non-SAP utility billing solution:

1. **Appropriate Functionality:** The Utilities Department has a solution that is designed to fulfill the robust requirements servicing its water, sewer, gas, electric, and fiber billing requirements that is compatible with its field resource application needs.
2. **Utilization of Modern Cloud Technology:** The City would be able to leverage the HANA Enterprise Cloud architecture for both its business intelligence and application interface needs.
3. **Builds on Existing SAP Expertise:** This alternative takes advantages of existing SAP expertise among the general City staff and also the IT staff.
4. **Builds on Existing SAP Relationship:** This alternative also allows the City to build on an existing relationship with SAP, rather than begin a new relationship with a new vendor. The City retains ownership of its SAP licensing and has flexibility as to the environment it chooses to manage its applications. The City will continue to pay an annual licensing fee that will include software maintenance, migration services for SAP's core finances, a new HR solution.
5. **Improved Functionality:** The SAP SRM module, enterprise asset management solution, e-procurement solution, and an HR module are incorporated in this option.
6. **Staff Optimization:** Internal staff support would be reduced by 4.4 FTE's in this new environment for a total of 8 dedicated FTE's. This includes four (4) staff dedicated to supporting SAP and one staff member dedicated to managing of the City's Enterprise Asset Management System. Three (3) staff business analysts would continue to support the best of breed utilities system.

DISADVANTAGES

Included below is a listing of the most significant disadvantages to upgrading the current SAP financials/HR/payroll environment only, but also selecting a new non-SAP utility billing solution:

1. **Mismatch of Technology to City's Business Requirements:** The City's ERP requirements do not appear to cross the threshold of being unique enough to require a Tier 1 ERP system and the capabilities of Tier 1.5 and Tier 2 systems are believed to fulfill the City's strategic needs.
2. **Proliferation of Best-of-Breed Systems:** The City continues to invest in best of breed solutions that duplicate capabilities available by the core SAP functionality available (e.g. e-receivables, asset management, human resources). The addition of specialized best of breed

applications increases the City's overhead to test, manage, and coordinate the version control for each system interface.

3. **Complexity of Interface development and Support:** The specialization necessary to manage each additional best of breed application requires ongoing training that must be coordinated between the business unit (core application stakeholders) and information technology so institutional knowledge is retained.
4. **High Cost of Ownership:** Excess cost burden over five years exceeds \$25 million in external and internal funding is extreme.

4.5 OPTION 2: COST ESTIMATES AND SUMMARY

Based on Plante Moran's experience with projects of similar scope coupled with existing SAP upgrade pricing information already provided to the City, we have estimated internal and external cost projections for the City to upgrade its current SAP investment. Key assumptions were necessary in preparing these estimates and these are represented in the Detailed Cost of Ownership Details and Assumptions Section located in Appendix D.

Cost Category	Option 2a		Option 2b	
	ALL IN CLOUD Upgrade SAP and Retain Existing Best of Breed Systems		MIXED ENVIRONMENTS Upgrade SAP Core Financials/HR/Payroll Modules Only Keep Existing Best of Breed Systems Obtain Best of Breed Utility Billing System	
EXTERNAL COSTS				
One-Time Cost Summary				
Software License Fees	\$	3,628,151	\$	3,391,151
Additional Hardware Costs	N/A		N/A	
Consulting Implementation / Data Conversion / Interface Development	\$	589,350	\$	1,009,757
Training	\$	566,850	\$	686,850
System Selection & Implementation Planning Fees	N/A		\$	80,000
Total External One-Time Costs	\$	4,784,351	\$	5,167,758
Reoccurring Cost Summary				
Annual Software Licensing & Solution Support	\$	-	\$	64,138
Consulting Support Services	\$	-	\$	-
Cloud (includes Licensing, Support, Interfaces & Consulting Services)	\$	3,421,439	\$	2,921,439
Training	\$	150,000	\$	165,000
Total External Recurring Costs	\$	3,571,439	\$	3,150,577
INTERNAL COSTS				
Reoccurring Cost Summary				
Current Support FTE	\$	510,000	\$	510,000
Additional Support FTE'S	\$	530,000	\$	530,000
Total Internal Recurring Costs	\$	1,040,000	\$	1,040,000
Year #1 Grand Total Cost	\$	6,267,261	\$	6,650,668
FIVE YEAR ESTIMATES				
Five-Year Estimate *		\$25,559,803		\$24,182,480
* Estimate includes one-time and reoccurring costs during year one, annual software licensing and solution support for planned application purchases in year one are assumed to incurred in years 2-5 only, and the future value of investments has been adjusted for years 2-5 to account for a 3% annual rate for inflation.				

Although upgrading SAP to the newest version and redeveloping the related processes as part of the project seems viable, using this project to also upgrade Utility Billing with SAP would be difficult. If the City decides to pursue and SAP upgrade path, we would instead suggest focusing on upgrading to SAP while implementing a separate best-of-breed utility billing system. Based on our discussion with City end users and knowledge of the public sector software marketplace, the City would seemingly receive better utility billing functionality and support from either a separate best-of-breed utility system or the utility billing abilities in a Tier II ERP system.

4.6 OPTION 3: NEW ERP ENVIRONMENT

OVERVIEW

Through a competitive RFP process, the City could procure and implement a fully integrated Tier 2 or a Tier 1.5 ERP solution that includes both Core ERP and Extended ERP Modules, plus some variety of integrations with best-of-breed solutions (e.g., Sympro). Most Tier 2 solutions are designed specifically for the public sector so that they offer a wide variety of integrated modules versus Tier 1 solutions that are utilized by a wide variety of industries, including multi-national corporations with very unique requirements. Tier 2 solutions typically have fewer configuration options and are tailored to public sector organizations but require a significantly lower implementation effort and on-going internal support. Tier 1 solutions (like SAP) typically require a much greater level of implementation, maintenance and support resources but can provide the City with more robust functionality and greater flexibility in order to handle very unique operational situations and business processes that are tailored to the City's. Given this assessment, it is likely that the a Tier 1.5 or Tier 2 solution would replace the current SAP and best-of-breed applications and as well as the many additional spreadsheets and other "shadow systems"

By changing systems, the City would maintain and support the current environment through the future system selection and implementation effort. The system selection would be a competitive procurement with stakeholder input to define requirements and measure vendor compliance in fulfilling them. It would require a capital investment and necessitate ongoing sustained investment through software maintenance and continued internal technical support.

Overall, in Option 3, the City would replace current systems with an Integrated Public Sector Focused ERP System and pursue one of the alternatives below:

1. Option 3, Alternative A: Go to market for a fully integrated public sector focused ERP solution and procure a separate utility billing best-of-breed solution.
2. Option 3, Alternative B: Go to market for a fully integrated core financials / human capital management solution, retain the current best of breed systems and procure a utility billing best of breed.

4.7 OPTION 3, ALTERNATIVE A:

Go to market for a fully integrated public sector focused ERP solution and procure a separate utility billing best-of-breed solution.

This option assumes the City reinvests in a new, fully integrated ERP solution that would take advantage of the capabilities of a Tier 1.5 or Tier 2 solution. This alternative is to select and implement a government-oriented ERP system, which would be used for all functions, including those supported by current best-of-breed solutions such as budget support. This alternative would also pursue the procurement of a best of breed utility billing module for utility support. Overall, the City would prepare an RFP for a solution that incorporates all current/required functionality in addition to integrating with a new utilities best of breed system.

ADVANTAGES

Included below is a listing of the most significant advantages to replacing the existing applications environment with an integrated ERP at the City:

1. **Streamline the City's Technology Investment and Improve Functionality:** The City selects an integrated ERP solution that fulfills the needs currently serviced by SAP in addition to divesting itself from a majority of the best of breed systems the City owns and is obligated to pay licensing maintenance, invest in internal/external staff support, and train staff to effectively utilize.
2. **Least Cost:** The value proposition achieved from the savings estimated over five years for this option exceeds a range between \$7 - \$15 million over the comparable alternatives.

3. **Staff Optimization:** Internal staff support would be reduced by 4.4 FTE's in this new environment for a total of 8 dedicated FTE's. This includes four (4) staff dedicated to supporting the new ERP and one staff member dedicated to managing of the City's Enterprise Asset Management System. Is also retains three (3) staff dedicated to supporting the utility best of breed system.
4. **Less Reliance on Outside Consultants:** The City builds internal capacity to administer and optimally configure its ERP environment without relying upon external contract services for on-call support services. It can also more effectively recruit and retain staff members that do not require the specialization or highly competitive salary expectations SAP systems demand in the heart of Silicon Valley.
5. **On Going Support Sustainability:** The City's operations have demanded increased staffing efficiency following the reductions in force drastically impacting the organization's ability to manage its SAP systems. The levels of expertise and staffing continues to increase as service level expectations increase while support personnel remain unchanged. Furthermore, the absence of succession planning has significantly impacted the institutional memory of the organization. A Tier 1.5 or 2 system can be maintained with fewer staff while providing more options for staff to assume a greater role in learning to manage less complex systems.
6. **Most Government-Oriented:** The Tier 1.5 or Tier 2 ERP system focused on a government market would be more responsive to structuring solutions to meet the needs of the municipal industry best practices.
7. **Less Complex ERP:** A Tier 1.5 or Tier 2 ERP system would be less complex to learn, configure.
8. **Fresh Start:** With the move to a new product, the excitement of a "fresh start" makes the implementation somewhat more likely to be successful. And in this case, staff involved in utility billing would have the additional motivation of being able to implement a public sector focused utility billing system.

DISADVANTAGES

Included below is a listing of the most significant disadvantages to replacing the existing applications environment with an integrated ERP at the City:

1. **Change Management Challenges:** This option will cause the greatest disruption to staff within the organization as processes, procedures, and training needs would likely require the greatest amount of re-engineering.
2. **Existing Investment Lost:** The investment made to interface the present SAP systems would be lost and the third party systems would have to be re-interfaced.
3. **Extended Duration of Implementation Project:** Establishing a transition of this magnitude will require staff augmentation that will increase staff support requirements in order to complete a complete migration which will require several years to perform.

4.8 OPTION 3, ALTERNATIVE B:

Go to market for a fully integrated core financials / human capital management solution, retain the current best of breed systems and procure a utility billing best of breed.

This option assumes the City reinvests in a limited government-oriented ERP environment where the existing and planned best of breeds would be retained in addition acquiring a new best of breed utilities management system.

ADVANTAGES

Included below is a listing of the most significant advantages to replacing the current SAP financials/HR/payroll environment only, retaining the existing best-of-breed project portfolio and selecting a new non-SAP best-of-breed utility billing solution:

1. **Low Cost:** The value proposition achieved from the savings estimated over five years for this option exceeds a range between \$3 - \$11 million over the comparable alternatives.

2. **Staff Optimization:** Internal staff support would be reduced by 4.4 FTE's in this new environment for a total of 8 dedicated FTE's. This includes four (4) staff dedicated to supporting the new ERP and one staff member dedicated to managing of the City's Enterprise Asset Management System. Is also retains three (3) staff dedicated to supporting the utility best of breed system.
3. **Less Reliance on Outside Consultants:** The City builds internal capacity to administer and optimally configure its ERP environment without relying upon external contract services for on-call support services. It can also more effectively recruit and retain staff members that do not require the specialization or highly competitive salary expectations SAP systems demand in the heart of Silicon Valley.
4. **On Going Support Sustainability:** The City's operations have demanded increased staffing efficiency following the reductions in force drastically impacting the organization's ability to manage its SAP systems. The levels of expertise and staffing continues to increase as service level expectations increase while support personnel remain unchanged. Furthermore, the absence of succession planning has significantly impacted the institutional memory of the organization. A Tier 1.5 or 2 system can be maintained with fewer staff while providing more options for staff to assume a greater role in learning to manage less complex systems.

DISADVANTAGES

Included below is a listing of the most significant disadvantages to replacing the current SAP financials/HR/payroll environment only, retaining the existing best-of-breed project portfolio and selecting a new non-SAP best-of-breed utility billing solution:

1. **Complexity of Interface development and Support:** The complexity of managing the myriad of best of breed interfaces would present a significant implementation risk to success in addition to an obvious premium increase with respect to cost as licensing and maintenance for each system would need to be carried forward. The cost savings benefit is considerably diminished in this alternative in contrast to a completely integrated alternative.
2. **Change Management Challenges:** This option will cause significant disruption to staff within the organization as processes, procedures, and training needs would likely require the greatest amount of re-engineering.
3. **Existing Investment Lost:** The investment made to interface the present SAP systems would be lost and the third party systems would have to be re-interfaced.
4. **Extended Duration of Implementation Project:** Establishing a transition of this magnitude will require staff augmentation that will increase staff support requirements in order to complete a complete migration which will require several years to perform.

4.9 OPTION 3: COST ESTIMATES AND SUMMARY

Based on Plante Moran's experience with projects of similar scope coupled with past actual pricing taken from selected Tier 1.5 and Tier 2 vendor proposals to similar sized entities as the City, we have estimated internal and external cost projections. Key assumptions were necessary in preparing these estimates and these are represented in the Detailed Cost of Ownership Details and Assumptions Section located in Appendix D.

Cost Category	Option 3a	Option 3b
	Go to Market for a Fully Integrated Public Sector Focused ERP Solution and Procure a Separate Utility Billing Best of Breed Solution	Go to Market for a Fully Integrated Core Financials/Human Capital Management Solution, Retain the Current Best of Breed Systems and Procure a Utility Billing Best of Breed
EXTERNAL COSTS		
One-Time Cost Summary		
Software License Fees	\$ 1,069,984	\$ 1,670,133
Additional Hardware Costs	N/A	N/A
Consulting Implementation / Data Conversion / Interface Development	\$ 2,142,027	\$ 2,338,275
Training	\$ 120,000	\$ 250,850
System Selection & Implementation Planning Fees	\$ 200,000	\$ 200,000
Total External One-Time Costs	\$ 3,532,012	\$ 4,459,258
Reoccurring Cost Summary		
Annual Software Licensing & Solution Support	\$ 241,675	\$ 205,874
Consulting Support Services	\$ 80,698	\$ 64,425
Cloud (includes Licensing, Support, Interfaces & Consulting Services)	\$ -	\$ 646,080
Training	\$ 75,000	\$ 115,000
Total External Recurring Costs	\$ 397,373	\$ 1,031,379
INTERNAL COSTS		
Reoccurring Cost Summary		
Current Support FTE	\$ 510,000	\$ 510,000
Additional Support FTE'S	\$ 400,000	\$ 530,000
Total Internal Recurring Costs	\$ 910,000	\$ 1,040,000
Year #1 Grand Total Cost	\$ 4,442,012	\$ 5,942,168
FIVE YEAR ESTIMATES		
Five-Year Estimate *	\$9,911,572	\$14,608,045
* Estimate includes one-time and reoccurring costs during year one, annual software licensing and solution support for planned application purchases in year one are assumed to be incurred in years 2-5 only, and the future value of investments has been adjusted for years 2-5 to account for a 3% annual rate for inflation.		

Overall, the City may decide to continue with SAP, but in view of the total cost of ownership differential as well as the problems that it has had in maintaining and optimizing SAP in the past, Option 3 will allow the City to pursue a fresh start, lowering the total cost of ownership and improving functionality for City end users.

4.10 PLANTE MORAN RECOMMENDATION

While many incremental improvements could be made or added to the current applications which would mitigate the investment required by changing systems, the primary challenge with maintaining the status quo would be the inefficiencies and lack of centralized information due to multiple systems and shadow systems.

Should the City conclude to remain with the current financial, procurement and personnel software applications environment via an SAP Upgrade, it would delay the complexities of the decision process. However, it may be likely that the City would conclude to change financial and personnel application suites in the future, and the timing of the change may be less advantageous.

Overall, remaining with the current environment does not appear feasible in the long term and inappropriate as a future strategic direction in context of the City's strategic goals and concerns of the current financial, procurement and personnel applications environment.

As such, the City should direct its analysis efforts towards the consideration of evaluating the advantages and disadvantages of changing the current environment to either further deploying and integrating current systems or replacing them with a suite of integrated ERP modules from an ERP provider.

While current inefficiencies were difficult for City staff to quantify, there is a common belief amongst staff that information tracking tools and processes are inefficient, and there is a universal acknowledgement that current information silos and the complexity of the current environment are root causes of the issue. Given the functional and technical risks associated with interfacing the City's multiple standalone core financial, procurement and personnel systems, as well as the related need to fundamentally re-implement the existing system, the City may be best served to evaluate the full range of ERP options via a competitive bid process.

Assuming that the results of the ERP System Evaluation are considered and the recommendations for system selection and implementation presented in the sections below are followed, ***we recommend that the City pursue Option 3, Alternative A: Go to market for a fully integrated public sector focused ERP solution and procure a separate utility billing best-of-breed solution.***

5 Recommended Next Steps

5.1 ERP SYSTEM EVALUATION APPROACH

To implement the recommendations presented herein, the following approach is recommended:

1. **Review and obtain a complete understanding of the ERP System Evaluation Report.** The report and accompanying options and alternatives should be reviewed in their entirety to gain an understanding of what is being presented and to prompt discussion and feedback on elements of the report.
2. **Garner support for the recommendations.** Within the report, there are numerous recommendations that will direct the use of staff time and other resources at the City. Support for the recommendations will be essential in its success. This support must come from the City leadership including City Council, Executive Steering Committee and Department Directors.
3. **Establish capital budgets and obtain funding.** As part of the initial implementation of the Plan and on an on-going basis, funding will need to be obtained to implement the initiatives in the Plan.
4. **Execute.** Once approval for the project has been obtained and initial capital funding requests initiated, the implementation of recommendations can occur. Plante Moran has recommended teams of resources by process area to execute specific initiatives. The City will need to assign specific resources to fulfill the roles recommended.
5. **Continue with system procurement.** Best practice system selection approaches and implementation approaches should be considered in the selection of a new system to replace current SAP and related systems.

5.2 PROJECT STRUCTURE AND GOVERNANCE

Execution of the recommendations and implementation of a new system will require a well-coordinated and well-organized governance structure in which to operate and manage the project. For the new system being considered by the City, many staff at the City will be impacted. Complex system implementations are most successful at organizations with structured project governance.

The process and technology changes will be significant and will impact all departments. There will also likely be policy changes that will need to be considered and implemented to receive the full benefits.

Strong project management is also critical for deployment, and becomes increasingly important with the new system investment. As a result, it will be critical to form a project structure that incorporates the following:

1. Considers the needs of a variety of stakeholders
2. Provides the ability to make decisions in the most efficient and effective manner
3. Ensures that project communication is flowing to the right individuals at the right time including those that are part of the project team and those external to the project team
4. The project team structure is empowered by management to enforce policies

Recommended Strategies:

1. Confirm a formal governance structure to coordinate the selection of the new system using the current ERP evaluation teams as a basis, with the intent that structure can be leveraged and specific roles can be re-defined for future design, implementation and maintenance phases of the system lifecycle.
2. As part of the RFP process, request information from vendors as to the optimal City staffing structure and time commitment required for a successful system implementation including on-going support and maintenance of the system.
3. Prior to launching the implementation phase of the project, establish expectations with the City staff as to the time commitment that will be required for a successful implementation.
4. With the assistance and advice from the selected vendor(s), institute an implementation governance structure that is well-staffed and supported by executive management within the City.
5. Establish policies to sunset legacy solutions, supplemental applications and shadow systems, in conjunction with the new system implementation so that they do not perpetuate an environment of dual information tracking.
6. Establish data retention requirements to guide and manage the scope of required data conversion.

5.3 REQUEST FOR PROPOSAL (RFP) TACTICS

The Request for Proposal (RFP) for a new system will encompass a number of sections including a list of the scope of software modules to procure and a list of detailed software specifications supplemented by other tables including interface requirements and migration paths for existing systems. We recommend the organization of potential modules as they relate to the continued assessment for inclusion in various phases of the project to be organized as follows:

1. **Core Modules:** These modules are ones whose existing legacy software resides in SAP that are intended to be replaced as part of the project through the RFP process although their replacement will likely occur in various stages of software implementation.
2. **Expanded Modules:** These modules are ones that are being considered for further evaluation during the RFP process and may or may not be replaced as part of the project depending on a number of factors.
3. **System Interfaces Required:** These modules are ones that are not within the scope of the project but may have interfaces to the implemented new solution. At some point in the future, the City may consider replacement of these modules or a marketplace assessment to determine the current vendor solution set that exists for these areas.

Recommended Strategies:

The following strategies should be considered by the City as it continues through the RFP and due diligence activities leading up to the selection of a future ERP solution:

1. **Vendor clarity in RFP.** Ensure that software vendors are clear as to the strategy of the organization as it relates to the procurement of replacement software.
2. **Open procurement process.** Preliminary project cost estimates for Tier 1.5 vs. Tier 2 vendors vary significantly. The City should define both functional and technical requirements as part of the RFP process and allow both tier vendors propose their respective solutions. Then the City will be able to evaluate the solutions based on the selection criteria and conclude on the most appropriate level of investment. The ERP Marketplace Assessment section further details the differences between the tiers.

3. **Identify other vendor capabilities and solution scope.** Within the RFP, include additional questions pertaining to the capabilities of vendors in other areas not considered as part of the initial scope of the project (i.e., system interface required modules) but which may be available from the vendors.
4. **Balance a strategic vendor decision with a preliminary investment.** Include all modules which the City may consider as part of a new system procurement and structure the RFP to provide “a la carte” pricing. This will allow the City to evaluate the full scope of the vendor solution to aid in the strategic decision of the vendor platform, however make a subsequent conclusion on phasing the investment.
5. **Progressive elaboration.** As the City learns more about the work of the project, planning can progress, becoming more elaborate, over time. Using consultant templates and expert judgment can assist with leveraging lessons learned from other similar local public sector organizations; however specific implementation planning requirements will be increasingly defined throughout the project phases.
6. **Evaluate financing options.** As part of the RFP process, the City may wish to consider financing options that are available from the vendor or other third party to provide a more palatable payment stream to fund the capital cost of the project.
7. **Leverage a prime vendor approach towards implementation.** Regardless of the solution set that is selected, to the extent possible the City should work to maximize contracting with a single, prime vendor who has prime responsibility for the implementation of the entire solution set that is purchased by the organization. It is reasonable to expect that a substantial portion of the current manual processes and shadow systems could be incorporated within a new system. With the prime vendor approach, the City would have the opportunity to choose separate personnel system, financial and purchasing functions should be combined and it is envisioned that the software marketplace offers solutions that would provide the City the opportunity to integrate all these major functions if desired.
8. **Software and services solutions.** Ensure that information is gleaned from providers of new system solutions in areas of both product and service as part of the RFP and due diligence activities. Specifically, this would include the following:
 - a. Review their product offerings as requested in the RFP.
 - b. Identify and contact relevant references of a comparable size to the City.
 - c. Develop vendor demonstration agendas that are geared towards identifying how the vendors will achieve specific the City outcomes.

For multi-product solutions, assess the degree in which these various products have operated with each other at other clients.

5.2 PHASING

Due to the integration and data access that they can provide, many systems, particularly ERP systems, are complex and require organizational commitment to successfully implement them. It is not uncommon for organizations the size of the City to take between 12 to 24 months to implement such systems. The implementation of a new system presents a number of options as to when certain modules are deployed frequently based on when the various business cycles are executed within the City such as:

- Fiscal year-end
- Calendar year-end
- CAFR development
- Budget development
- Open enrollment

Recommended Strategies:

Although there is no perfect answer as to when certain modules should be deployed, the following best practices should be considered related to the implementation phasing set of activities:

1. **Implement complimentary modules together.** There is a natural implementation phasing of like modules as part of the deployment of a new system. For example, core financial modules should be implemented together. Likewise, HR/Payroll modules, to the extent incorporated, should be implemented together as well. This is another example of factors to be considered when determining an overall implementation approach.
2. **Avoid “Big Bang Approach”.** The deployment of a new system is a very significant project requiring a large amount of staff and vendor time to implement as it will impact people, process, policy and technology. Careful phasing of implemented modules should be performed versus a “big-bang” approach of implementing all software at the same time to minimize overall project risk and to ensure optimal utilization of resources. The City may wish to consider separating core financial modules, payroll and personnel, and procurement functions into separate phases. Integrations to other the City systems should follow, as the system modules are implemented over time.
3. **Evaluate opportunities for “Quick-Win” implementations.** There are a number of opportunities to obtain quick-win implementations of a new system that provide visible evidence of project success and minimize the risk of bringing all modules up simultaneously. Frequently, modules such as Debt Service Management and Investment Management are isolated to a limited number of individuals, are relatively simple to deploy and do not have significant interaction with the core financial system. Opportunities for these quick-wins should be explored during the vendor selection phase of the project and more closely during system implementation. Certain “quick-wins” may need to be initially implemented in stand-alone mode with or without temporary bridges in place and then later integrated when the core system is live.
4. **Implement considering natural business cycles.** A natural tendency is to implement the financial components of a new system such that go-live is on a fiscal year-end to have all transactions for a year on one system. In general, there are many cases where this is not the ideal situation as the post go-live challenges with implementing a new system impede significant activities that are required for year-end close. HR/Payroll solutions tend to go-live on a quarterly basis and the City may wish to consider going live at a calendar year break due to the processing of W-2 statements for employees. Regardless, natural business cycles should be considered as part of the phasing of new system modules.

5.3 STAFF BACKFILL

Frequently, staff who are the most desirable to lead a new system a replacement project are also the ones who also have the most knowledge of the legacy environment and are viewed as key in maintaining the integrity of the existing environment. This is true at the City in certain areas such as Finance.

Recommended Strategies:

1. **Factor backfill costs in project budget.** The City should consider the feasibility of additionally factoring backfill costs into the overall project budget that is presented to the City Council as part of the entire project budget.
2. **Consider recent retirees to provide backfill.** To the extent feasible, evaluate the opportunity of using any recently retired staff to provide backfill support for the project or to provide assistance in critical areas deemed important for the project due to their institutional

knowledge. This may include areas such as data cleansing, where institutional knowledge is relevant, or for addressing day to day operational responsibilities, while current the City subject matter experts focus their attention on the new system implementation effort.

3. **Consider workload sharing.** Based on normal business cycles, certain City staff may become especially busy addressing operational requirements. During these times, to the extent that other City staff can re-focus their efforts to assist them in their operational duties, it can mitigate the bottlenecks which can result and increase staff availability to participate on the project. Additionally this can help with staff cross-training, and collectively “upgrade” staff skills in each work area. To the extent that the City can proactively initiate such approaches in advance of the new system implementation project, it can provide benefits to allow subject matter experts to more easily transition to their project roles.

5.4 DATA CLEANSING / CONVERSION

Legacy systems frequently have data stored in a variety of formats either electronically within the system or in hard-copy format that is deemed as critical, and has data retention requirements. Vendors will generally provide two approaches towards the conversion of client data. In one method, vendors will provide a template format to the City and request that all data to be converted is provided in the requested format regardless of the number of data sources that currently house this information. In the second method, vendors will manage both the extraction and conversion of information into the template format. In both cases, the data conversion process will be iterative in terms of extracting, converting, reporting and reviewing.

Likewise, cleansing of the data prior to the data conversion activity during implementation, though time consuming, will generally make this process occur more smoothly. Regardless of the methods taken, data conversion is considered a critical part of system implementation and one that can be a critical risk to the project if not managed correctly. A certain amount of data cleansing can occur after data is extracted using programming.

Recommended Strategies:

1. **Data conversion requirements.** Define general data conversion requirements in the RFP and work with the tentative finalist vendor during the last stages of the selection to finalize the scope of conversion within the Statement of Work (SOW) with the vendor.
2. **Historical information.** Avoid converting all historical information to the new environment. Establish and use data retention guidelines to drive the scope of conversion. Instead, consider the conversion of summary information as a first course of action unless detail is needed.
3. **Historical data access.** Consider alternative options of accessing historical information other than electronically. This may include printing of reports to electronic files or the creation of a data warehouse.
4. **Design conversion specifications.** Develop a cross-walk between legacy and new system data as part of the conversion process. For example, this may include development of an interface that allows users to enter in an old account that then displays the same account in the new structure. Likewise, an old vendor number could populate a field in the new system to act as a cross-reference.
5. **Data cleansing.** Begin data cleansing activities as early as possible. For example, the City may wish to start reviewing its existing vendor file and eliminating duplicates or vendors who no longer exist. During the implementation phase of the project, most vendors will provide specific instructions related to data cleansing activities.
6. **Use of data warehouse.** As a separate internal project, consider the use of a data warehouse for housing of legacy data for historical reporting purposes. If this route is chosen,

clear responsibilities for separately acquiring and implementing the data warehouse will be required to consider both vendor and the City staff involvement.

5.5 INTERFACE DEVELOPMENT

Interfaces related to the deployment of a new system can exist in various forms as follows:

1. Standard imports or exports provided by the vendor's solution with entities and systems outside of the City (e.g., benefit providers, other governmental entities, etc.).
2. Interfaces between the vendor's solution and applications that are not being considered for replacement as part of the project.
3. Interfaces between the vendor's solution and applications that are being considered for replacement as part of the project that may or may not be provided by the prime vendor.

Decisions as to who will develop and provide on-going support for system interfaces are another important factor to consider. Certain vendors will provide toolsets that assist in the development and management of system interfaces.

Recommended Strategies:

1. **Identify interface requirements early.** Define potentially needed interfaces between the new system and external entities in the RFP. This would include existing as well as desired new interfaces that would be populated in the Application Interface Table of the RFP.
2. **Define full scope of interfaces.** Define potentially needed interfaces between the new system and other City systems not being replaced in the RFP. This would include existing as well as desired new interfaces that would be populated in the Application Interface Table of the RFP. Identify other candidate interfaces in the RFP with systems that may or may not be replaced.
3. **Prime vendor and interfaces.** Ensure that the prime vendor is responsible for the delivery of all system interfaces during implementation.
4. **Shadow support staff.** City staff should shadow vendor staff during system implementation to develop an understanding of their conversion tools such that the City can maintain those interfaces designated for the City support going forward.
5. **Leverage existing interfaces.** Consider allowing the software vendors to maintain interfaces that exist between their product and entities outside of the City (e.g. benefit providers, IRS, etc.) and, as an option, other systems not being considered for replacement by the City.
6. **Process redesign consideration of interfaces.** In conjunction and as a result of the implementation's business process redesign activities, perform the necessary work to further inventory the system interface requirements, develop an system interface plan, design and develop the system interfaces, test and accept the interfaces and implement them in conjunction with the "out of the box" system implementation.

5.6 REPORT DEVELOPMENT

Although the selected vendor will likely provide a significant number of reports and queries through their base system there will be a need for the City to have existing reports customized and to have additional reports developed that are not available as part of the core set of reports. The skill sets required for report development include not only the report development tools but also an understanding of the database and/or views which the reporting tools access. Likewise, if the City pursues the use of a separate data mart / data warehouse in order to perform more complex analysis, additional skill sets will be needed.

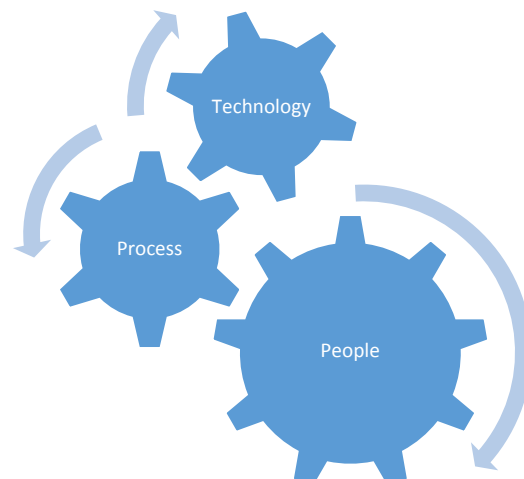
When software vendors demonstrate their solutions, the expectation of users being able to perform ad-hoc reporting themselves is heightened as the vendors will present the process as simply involving the point and click of a few buttons to generate the desired results. In reality, the process of using the tool and developing an understanding of the database/view takes a period of time.

Recommended Strategies:

1. **Establish expectations around reporting.** Reset staff expectations that traditional reporting should not necessarily be the first or most appropriate method towards obtaining the financial, procurement or HR information that they seek. Instead, as part of the overall training approach, ensure that staff understand the self service, inquiry and portal functions available in the system, and when to use them. Reset staff expectations that not all reports will be available at the go-live transition and that all users will be able to generate ad-hoc reports.
2. **Ad-hoc reporting tools team.** Identify a joint team of process owners and technical support staff to be trained on the ad-hoc reporting tools during the implementation. These staff will likely be generating custom-developed reports for some time after the go-live period.
3. **Assess ad-hoc reporting tools.** Obtain a clear understanding during the selection process as to the reporting options available with each vendor solution and, for each reporting option, who typically is using the tool.
4. **Custom reports.** Work with the software vendor during the implementation phase of the project to develop a select set of custom reports, with their assistance, to improve knowledge transfer as to both the product and database structure.

5.7 CHANGE MANAGEMENT

Project success comes from having a very clear idea of how management would like to run the City, and then using redesigned processes and a new system to facilitate the way the City has envisioned it. When process and software implementations do not meet expectations it is often due to people issues, and not necessarily the technology. Research indicates a correlation between the success of a change initiative and how well the people side is managed throughout the change. That is why applying a change management methodology is critical to the success of such an initiative. A rigorous change management methodology is critical to supporting the successful launch of new processes and systems. The purchase and implementation of a new system and related technology is done to assist in meeting organizational objectives and improving performance. Organizational performance is also impacted by the people of an organization and the processes used to complete work. Throughout the project, the goal is to balance these components, as illustrated:



5.8 COMMUNICATION PLANNING

As part of the first steps of change management planning, the City should develop communications plans intended to guide project communications from process redesign through post-implementation. By its nature, the project will affect many staff across the City.

Acknowledging the diverse City audiences that will be involved and impacted by this project, a Communication Plan should be developed to create awareness and make the project relevant by effectively communicating the impacts to both internal and external stakeholders. Sample objectives for a Communication Plan may include:

1. Accurately distribute information in a timely manner concerning important project benchmarks and progress to employees.
2. Use various media to provide multiple sources from which information concerning the project can be accessible.
3. Ensure all information available is updated and accurate.
4. Reduce confusion among employees by providing a sole directive and source from which all project information originates.
5. Provide clear channels of communication within which City project staff can operate to lead to an expedited solution to issues that arise during the selection and implementation and after its completion.
6. Encourage feedback from employees across the City

Recommended Strategies:

1. **Assign a communication coordinator.** The City should assign a communications coordinator to the project management office to maintain and execute the communications plan.
2. **Identify and empower change agents.** A Communications and Change Management Team should recommend the appointment of key “change agents” within each Department to nurture ‘buy in’ and get Department staff committed to taking relevant actions. Such team members will be involved in educating Department staff about the impacts and benefits of the project and be “inspiration agents” by helping Department staff find ways to discover their potential, overcome barriers, and celebrate successes. These staff should monitor “what is working”, “what isn’t working” and “what do we need to change” – and provide regular feedback on progress to Department staff.

5.9 PROCESS RE-DESIGN

The ERP System evaluation activities that were conducted surfaced several opportunities for improvements in the management and execution of existing processes. Through the course of conducting process owner process user review sessions, process-specific as well as the City-wide issues and opportunities were surfaced. The City should re-engineer appropriate business processes in conjunction with the implementation of the new ERP, as part of a successful change management approach.

The mapping of “to be” business processes and certain high level process redesign can be performed in advance of the implementation, either prior to or during the time that the City is facilitating a RFP process. Along with process redesign, the City should select key performance indicators (KPIs) that will be used to measure the City’s performance along with targets that are based on best practices. Ideally, the City will measure performance according to selected KPIs prior to implementation, six months after implementation, one year after implementation and quarterly thereafter (some

organizations evolve to monthly, especially once business intelligence and dashboard solutions are implemented).

The City should keep in mind the following:

1. The earlier process redesign is performed in the selection process, the more information the City will have about the “to be” process which can serve as a basis for selection, along with other factors such as cost, functionality, technology, implementation timeframe, etc.
2. If performed early in the process (e.g., prior to selection), management at the City will likely face trade-offs in terms of cost versus ability to support “to be” processes.
3. The City will need to remain flexible in terms of which parts of the “to be” process are actually implementable, given the new system capabilities. In fact, the vendor solution may provide features resulting in a better, more efficient “to be” process.

During the implementation phase of the project, there may be significant levels of review conducted by the selected vendor(s) to understand existing City processes and how their software can be used to improve the efficiency and effectiveness of these processes. While vendors may offer additional optional services to provide enhanced levels of implementation support to their customers, it is generally considered the responsibility of the client to develop the actual procedural documentation that defines exactly how these processes will operate with the selected system for use by process owning and process end-user staff.

5.10 5ERP SYSTEM TRAINING

The City should develop appropriate training plans in conjunction with the implementation of the new system. The City does not currently have a formalized enterprise wide training program for existing financial, procurement and human resources systems.

The process of providing training to on the new system should occur in in conjunction with the implementation of the new system. Training should be both functional and technical. Functional training should be for both process owners and process end users. It will also be critical to provide the necessary technical training to the City IT and departmental “power user” staff.

Recommended Strategies:

1. **Establish training expectations.** During the RFP development and due diligence activities associated with reviewing vendor responses, ensure that any specific training expectations are articulated to the vendors. As part of the due diligence phase with the finalist ERP vendors obtain a clear understanding as to the level of training activities they will conduct during the implementation phase of the project and the specific training materials.
2. **Training team.** During the implementation of the new system, formulate a Training Team which will focus both on the implementation training requirements on the development of an ongoing internal training program for continued exploitation of the capabilities of the new system over time. Consider the use of a “train the trainer” approach, whereby the City would save on vendor implementation expense, as well as encourage process owners to become knowledgeable about the key aspects of the system.
3. **Budget for future training.** In future budget cycles, consider including an ongoing training budget specific to the system, to assist in maximizing the ongoing leveraging of the City’s investment.

6 Appendices

6.1 APPENDIX A: PROJECT CHARTER

Enterprise Resource Planning Evaluation

Project Charter (Amended)

Project Number #46

Project Manager: Michael Tsao

Date: September 23, 2013

Version: 2

A.1 Version History

ID	Changes	Date Created	Author
	Initial	09/25/2013	Mtsao
	Modify contends	10/24/2013	mtsao
	Add Appendix A	11/12/2013	Mtsao
	SAP team diagram	06/18/2014	Mtsao

A.2 Background

The City's history with SAP began in 2002 when the City selected SAP as its preferred vendor for an Enterprise Resource Planning system with the purpose of integrating various business processes within the City and to pave the path for the City to moving toward the direction of electronic Government. In fiscal year 2003, the implementation of the SAP Enterprise Central Component (ECC 6.0), SAP core modules were completed and the SAP system has been running in the City since 2003, supporting Accounting, Finance, Purchasing, Project Management, Plant Maintenance, Budgeting, Payroll, Human Resource Management, and Service Order management. In 2009, the City completed a major upgrade to the SAP ERP system and , which also replaced the former utility billing system (Banner) with the implementation of the SAP IS-U module, Customer Relationship Management (CRM), Utilities Customer Electronic Services (also known as My Utilities Account customer portal) and Business Intelligence systems (BI). Both business and technology needs have changed dramatically since the current ERP solution was selected and implemented. Therefore, City desires to conduct a comprehensive evaluation to determine a solution to reduce IT application and infrastructure support costs, improve flexibility, increase user friendliness and intuitiveness of system, facilitate further automation of business processes, improve quality and reliability of information for decision making.

A.3 Project Description

ERP consultant to perform an analysis of City's current SAP environment, business processes and our strategy; evaluate the ERP market place; and help the City determine a refreshed vision for our ERP needs. Utilities billing and a Human Resources Information System is included in scope of this project.

Project Objectives

By the end of FY14, an ERP consultant will present a comprehensive evaluation report to the City with the following information:

- Gap analysis of current application capability against business and technology needs and best practices.
 - Identify present and future needs
 - Identify wins and successes (strengths)
 - Identify pain-points and challenges (weaknesses)
 - What are the risks and opportunities
- Identify areas where the current application is capable of meeting needs.
 - Identify the pros and cons of using the current application to fulfill these needs
 - Estimate the time and costs to implement and support
 - Compare these costs to alternatives
- Conduct an overall evaluation to determine if the City should solicit proposals from other ERP solution providers.
 - Benchmark support and maintenance costs (i.e. to similar sized cities and municipalities.)
 - Determine if the current application allows the ability to respond quickly and cost-effectively to changing business and technical needs

A.4 Project Scope & Deliverables

In Scope

- Selecting an ERP evaluation consulting firm.
- Perform an analysis of our current SAP environment.
- Perform gap analysis of current application.
- Deliver a comprehensive evaluation report.

Out of Scope

- Selecting a new ERP solution for the City.

A.5 Flexibility Matrix

	Most Flexible	Moderately Flexible	Least Flexible
Scope			X
Schedule			X
Cost		X	

A.6 Milestones

Milestone Description
Charter (this document)
Kickoff Meeting
RFP
Contract with Vendor
Business Impact Assessment (BIA)
Project Management Plan
Assessment Report and Recommendation

A.7 Deliverables

Deliverable Description
• Gap analysis of current application capability against business and technology needs and best practices. ○ Identify present and future needs ○ Identify wins and successes (strengths) ○ Identify pain-points and challenges (weaknesses) ○ What are the risks and opportunities • Identify areas where the current application is capable of meeting needs. ○ Identify the pros and cons of using the current application to fulfill these needs ○ Estimate the time and costs to implement and support ○ Compare these costs to alternatives • Conduct an overall evaluation to determine if the City should solicit proposals from other ERP solution providers. ○ Benchmark support and maintenance costs (i.e. to similar sized cities and municipalities.) ○ Determine if the current application allows the ability to respond quickly and cost-effectively to changing business and technical needs

A.8 Success Criteria

- Completion of the ERP evaluation before June 2014.
 - The ability for City leaders to determine the ERP strategy going forward.
- Initial Assumptions and Constraints

ID	Type ²	Description
1	A	Consultant can provide clear path to the appropriate solution
2	A	Identified consultant is within budget
3	C	CoPA personnel are available when needed
4	A	Consultant performs analysis as expected and within allowed time

A.9 Initial Risks and Issues

ID	Type ³	Description	Owner	Importance ⁴
1	R	Consultant is unable to identify current application gap against business and technology needs	Michael	4
2	R	Consultant knowledge not at expected level	Michael	4
3	R	Overall project costs are higher than budgeted	Michael	2
4	I	Consultant is unable to deliver the final evaluation report on time	Michael	3

A.10 Sponsor Communication

A.11 Initial Communication Plan

Communication	Description	Frequency	Format	Recipients
Technology & The Connected City Committee	High Level Project Overview	Once	Regular Scheduled Meeting	Committee members
GRB Committee	High Level Project Overview	Once	Regular Scheduled Meeting	Committee members
Information Security Steering Committee	High Level Project Overview	Once	Regular Scheduled Meeting	Committee members
GIS Steering Committee	High Level Project Overview	Once	Regular Scheduled Meeting	Committee members
Utility Technology Committee	High Level Project Overview	Once	Regular Scheduled Meeting	Committee members

A.12 Team and Communication

Initial Communication Plan

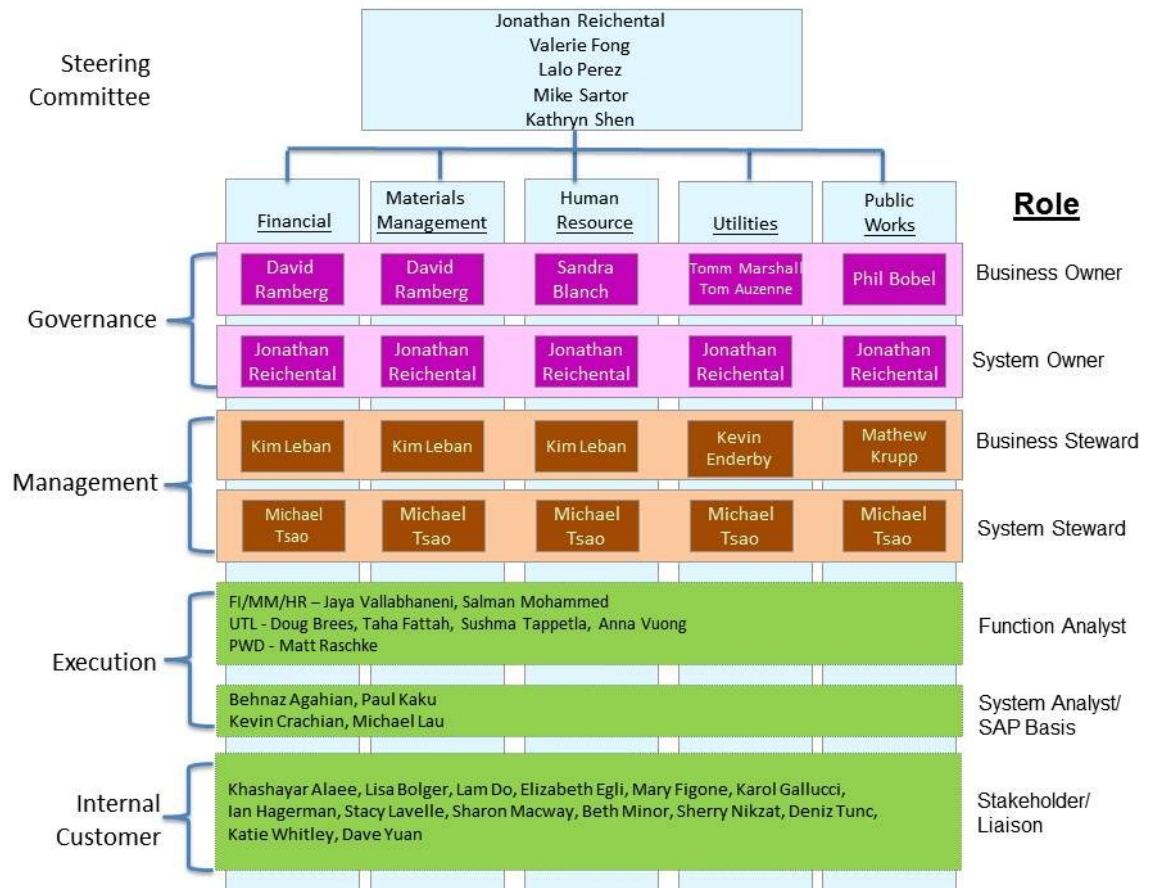
Communication	Description	Frequency	Format	Recipients
Kick-off Meeting	Initial project meeting	Once	Meeting	- PM - Sponsor - SAP Core team - SAP Steering Committee - SAP PMO Team - Stakeholder/Liaisons
Status Updates	Project Status, Risk Status, Milestone, Issue Review, etc.	Weekly	Email	- PM - Sponsor - SAP PMO Team

² A: assumption; C: constraint

³ R: risk; I: issue

⁴ 4: critical; 3: high; 2: medium; 1: low

Consultant Meeting	Regular meeting for status and review	Weekly	Meeting	- PM - SAP PMO Team - Consultant
Project Team Meeting	Regular meeting for status and review	Monthly	Meeting	- PM - Sponsor - SAP PMO Team - Consultant



SAP End Users: See Appendix A

A.13 Project Authority

Title	Resources Needed (Names)
Sponsor:	Jonathan Reichental
Project manager:	Michael Tsao
PMO Governance:	PM, Sponsor, SAP Steering Committee
Business Process Owner:	Finance: Laura Kuryk, Walter Rossmann, Greg Pustelnik, Scott O'Neill; Revenue Collection: Josie Stokes; HR: Grace Castor; Utilities CS: Anthony Enerio, Raveen Maan, Dave Yuan; PW Refuse: Matt Krupp, Matt Raschke; Project System: Sharon Macway, Anna Vuong; Sales and Distribution and Plant Maintenance : Anna

	Vuong;
Steering committee	PM, Sponsor, SAP Steering Committee
Core Team	PM, TBD
Extended Team	Plante & Moran, PLLC.

A.14 Purchase Request Information

Budget (First Year)	\$ 150,000		
CIP or Cost Center:		G/L number:	30050002-31290
Multi-year yes/no	NO		
Procurement Method:	RFP		

SAP End Users by Department

Administrative Services

Accounting

- Laura Kuryk

Budget

- Christine Paras

Purchasing

- Greg Pustelnik

Store

- Scott O'Neill

Revenue Collection

- Nichol Banks
- Rick Claeys

City Attorney

Stacy Lavelle

City Auditor

Deniz Tunc

City Clerk

Beth Minor

City Manager

- Katie Whitley
- Danille Rice

Community Services

Budget/Position

- Rob De Geus
- Rhyena Halpern
- Daren Anderson

Procurement

- Sally Camozzi

- Marieke Gaboury
- Catherine Bourquin

Time Entry

- Erin Perez
- Amy Johnson

Fire

Jeany Clattenburg

Information Technology

Sherri Wong

Library

Karol Gallucci

People Strategy & Operations

Elizabeth Egli

Planning & Community Environment

Budget/CIP

- Alicia Spotwood
- Robin Ellner

Procurement

- Lisa Green
- Rosemary Morse

Time Entry

- Zariah Betten
- Aline Eskandari

Police

- Dana Lamberson
- Barb Teixeira

Public Works

- Karen Mitchell
- Tatiana Pham

Utilities

Billing Management

- Lissa Rendon – Customer Service Specialist - Lead
- Eric Keniston – Resource Planner

Customer Service and Customer Relationship Management

- Renee Ruiz – Customer Service Representative
- Device Management
- Barclay Rush - Customer Service Specialist - Lead

Financial Contract Accounts

- Leon Timmons- Utilities Credit and Collections Specialists
- Lissa Rendon - Customer Service Specialist - Lead

Utilities Customer Electronic Services

- Preet Maan - Customer Service Specialist

Work Management

- Kelly Haruta – Coordinator Utilities Project
- Melissa Smart – Coordinator Utilities Project

Business Intelligence

- Lissa Rendon - Customer Service Specialist – Lead

6.2 APPENDIX B: APPLICATION INVENTORY

As part of the Enterprise application analysis, an inventory of all key current software systems has been developed to support the areas in scope for the project, as defined in the project charter. For each current system, the analysis categorizes the level of availability of that software from other ERP vendors which sell their products to similar size governments. Additionally the analysis identifies a recommended preliminary migration plan for the current application based on all factors. .

*Application Availability in the ERP Market

Legend Code	Description
G	Generally Available The module is generally available from most / many providers of ERP solutions to similar size entities
B	Best of Breed The module is not generally available from most / many providers of ERP solutions to similar size entities and is typically selected and implemented as a separate best of breed system, then later integrated to ERP, as feasible, based on available funding and skills.
E	Expanded ERP The module is available from certain, select providers of ERP solutions to similar size entities and if not selected and implemented as part of the integrated ERP system, would need to be obtained by the City from a separate best of breed system, then later integrated to ERP, as feasible, based on available funding and skills.

#	Current ERP Application	Application Notes-Description	Functional Area(s) Supported	ERP Availability in Marketplace	Expected ERP Module
1	SAP – BI	Business Intelligence for reporting	Utilities Management	G	Ad-Hoc Reporting Tool
2	SAP FI-AA	Asset Accounting (FI-AA)	Asset Management	G	Fixed/Capital Assets
3	SAP –PS	Project Systems (PS)	Project Management	G	Project Accounting Contract Accounting

#	Current ERP Application	Application Notes-Description	Functional Area(s) Supported	ERP Availability in Marketplace	Expected ERP Module
4	SAP PSM-FM	Funds Management Integration (PSM-FM) Integration of Project/Contract Accounting with Funds Management (Budgeting) and General Ledger to match actuals vs. costs and keep track of budgets and spending	Project Accounting General Ledger Budgeting	G	General Ledger Budgeting Project Accounting
5	SAP-FI	Financial Accounting (FI) General Ledger (FI-GL) Accounts Receivable (FI-AR) Accounts Payable (FI-AP) Bank Accounting (FI-BL) Special Ledger (FI-SL) Cost Controlling (CO)	General Ledger Cost Accounting Financial Reporting	G	General Ledger Miscellaneous Billing and Accounts Receivable Account Payable Project Accounting
6	SAP-FIN	Financial Supply Chain Mgmt (FIN-FSCM)	Treasury	G	Purchasing Contracts Management
7	SAP-HR	Human Resource Management (HR) Active Directory (HR-AD) Organizational Management (HR-OM) Benefits (HR-BEN) Time Management (HR-TM) Payroll (HR-PY) Talent Management (HR-COM)	PSO and Payroll	G	Human Resources Payroll Time and Attendance

#	Current ERP Application	Application Notes-Description	Functional Area(s) Supported	ERP Availability in Marketplace	Expected ERP Module
8	SAP-IS-U/CCS	Utility Billing (CCS-BM) Device Management (CCS-DM) Customer Service (CCS-CS) Financial Contracts Accounting (CCS-FICA) Customer E-Services (SAP-UCES) Customer Relationship Mgmt (CRM-CS) Web Portal Interface (IC Web) Utilities Customers E-Services (UCES) My Utilities Account (MUA)	Utilities Management	B	Utilities Management
9	SAP-MM	Logistics Materials Management	Inventory Management	G	Inventory Management
10	SAP-PM	Plant Maintenance	Maintenance & Inspections Management	G & B	
11	SAP-SD	Sales and Distribution Price/Rates Calculation; Prod or Service Availability Check; Customer Credit Management; Material Determination; Tax Determination; etc.	Sales and Distribution	B	Utility Billing
12	Accela	Permits and inspection data	Permits and Inspections	B	N/A
13	Advanced Micro Solutions (AMS)	1099-ETC software for generating 1099's	Accounts Payable	G	Accounts Payable
14	Autodesk Utility Design (AUD)	Estimating software used by Electric Engineering.	Utilities Management	B	N/A

#	Current ERP Application	Application Notes-Description	Functional Area(s) Supported	ERP Availability in Marketplace	Expected ERP Module
15	BMI	Document management vendor for planning and purchasing (contract management)	Purchasing	B	Document Management
16	Checkfree	Online Payments for Utilities	Utilities Management	B	N/A
17	Civica	IT Web Development Toolset	IT	B	Purchasing
18	CLASS	Parks and Rec system	Parks and Rec	B	N/A
19	Commerce bank	e-Payables	Accounts Payable	G	N/A
20	CORE (Ipay)	Web based parking citation payment and collection.	Revenue Collections	B	Cash Receipting
22	Doc1/e2Vault	Bill print extract module	Utilities Management	B	Utility Billing
23	Docusign	Used to approve activities	Purchasing	B	Purchasing
24	GIS Geodesy	GIS mapping	Utilities Management	B	N/A
25	GoldMine	CRM & Contact Management Reporting	Utilities Management	G	CRM
26	InTime/ISELINK	Police Scheduling Software	Payroll/Time Entry	G & B	Human Resources Payroll Time & Attendance

#	Current ERP Application	Application Notes-Description	Functional Area(s) Supported	ERP Availability in Marketplace	Expected ERP Module
27	I-Tron / MVRS	Collects move-in, move-out and check reads for meters installed on designated AMR meter reading routes that fall under the fixed network. Interface between SAP and meter reading hand held device to record meter reads.	Utilities Management	B	N/A
28	JP Morgan Chase Smart Data	P-card system	Accounts Payable	G	N/A
29	Maintenance Connection	Enterprise Asset Management	Fixed Assets	B	Asset Management
30	MS Access	Imports SAP data into Access for reporting and analysis purposes	Utilities Management	G	Utility Billing
31	MS Excel	Bid List - Vendor listing for notification of competitive solicitations	Purchasing	G	Purchasing
32	MS Excel	IT Vendor File (shadow system)	Purchasing	G	Purchasing
33	MS Excel	IT and Fire Department Contract Tracking/Management (shadow system)	Contract Management	G	Contract Management
34	MS Excel	LOA absence tracking Payment Calculations for leave Workers compensation Claims Budget Changes Tracking incoming PAF's	PSO	G	Human Resources Payroll Time & Attendance
35	MS Excel	Calculate holdback percentages Sales tax capture spreadsheet	Accounts Payable	G	Accounts Payable

#	Current ERP Application	Application Notes-Description	Functional Area(s) Supported	ERP Availability in Marketplace	Expected ERP Module
36	MS Excel - Meter Reading Calendar	Provides the work plan for the meter reading group and shows which meter reading routes will be read and when.	Utilities Management	B	Utility Billing
37	MS Excel - Meter Testing Results	Meter testing/proofing results	Utilities Management	B	Utility Billing
38	MS Excel - Rate Modeling	Used for refuse rate modeling	Utilities Management	B	Utility Billing
39	MS Excel - Refuse Notes	All customer account notes for refuse billing	Utilities Management	B	Utility Billing
40	MS Project	Project Management/Task Tracking	Project Accounting	B	N/A
41	NeoGov	Recruitment and hire	PSO	B	N/A
42	OpenGov	Transparency/Dashboard Tool	Financial Reporting	B	N/A
43	Outage Management	Tracks power outages	Utilities Management	B	N/A
44	PatternStream	Budget Publications	Budgeting	G	Budgeting
45	Pitney Bowes	Prints and archives bills (utilities)	Utilities Management	B	Utility Billing
46	Questica	Budget system	Budgeting	B	
47	Quick Serve	Will be used to process payments once the City gets the application to work.	Revenue Collections		Cash Receipting

#	Current ERP Application	Application Notes-Description	Functional Area(s) Supported	ERP Availability in Marketplace	Expected ERP Module
47	Sales tax shadow system	Calculates sales tax for P-Card purchases	Accounts Payable	G	Accounts Payable
48	Segal Waters Compensation Database	Salary and benefit survey information (rollout in August 2014)	PSO	B	N/A
49	SharePoint	Logs of customer service, grievances, discipline, project documents, purchasing approval documents	Various	B	N/A
50	Skillsoft	eLearning system (rollout in July 2014)	PSO	B	N/A
51	Spinifex	Payroll and HR reporting tool for the state controllers report from SAP data	PSO	G	Human Resources
52	SymPro	Used to manage investments	Treasury	B	N/A
53	Topobase	GIS and mapping software used by Engineering	Utilities Management	B	N/A
54	Training database	Home-grown, used to sign up for classes	PSO	G	Human Resources Payroll Time & Attendance

6.3 APPENDIX C: RESPONSE SUMMARY FROM CITY-WIDE USER SURVEY

Key Report Findings and End-User Survey Results

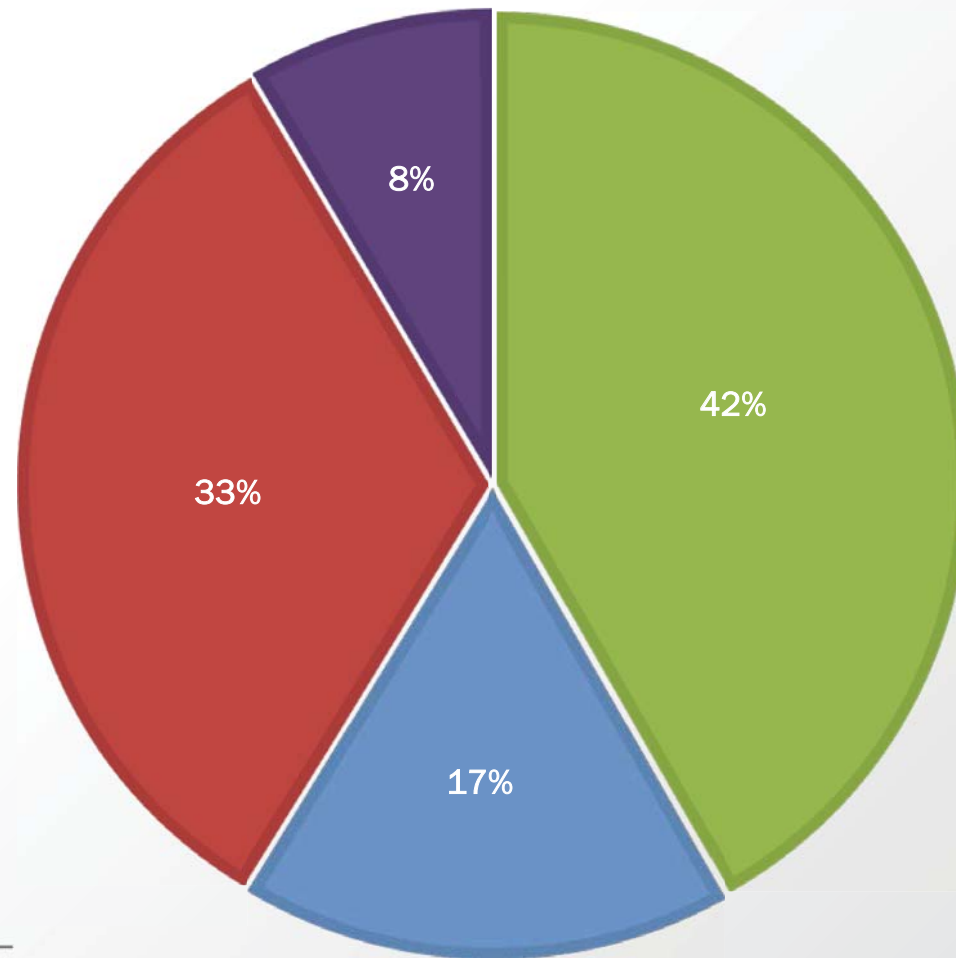
Key Findings

- Inefficiencies Exist Due to Redundant Data Entry, Manual Processes and Unused Functionality
- Workflow within SAP is Not Fully Utilized
- Unrealized Benefits from Current City SAP Investments
- Substantial Risk / Overhead/Effort Involved to Support an Increasing Number of Interfaces

Survey Results

HOW WOULD YOU CLASSIFY YOUR USE OF SAP?

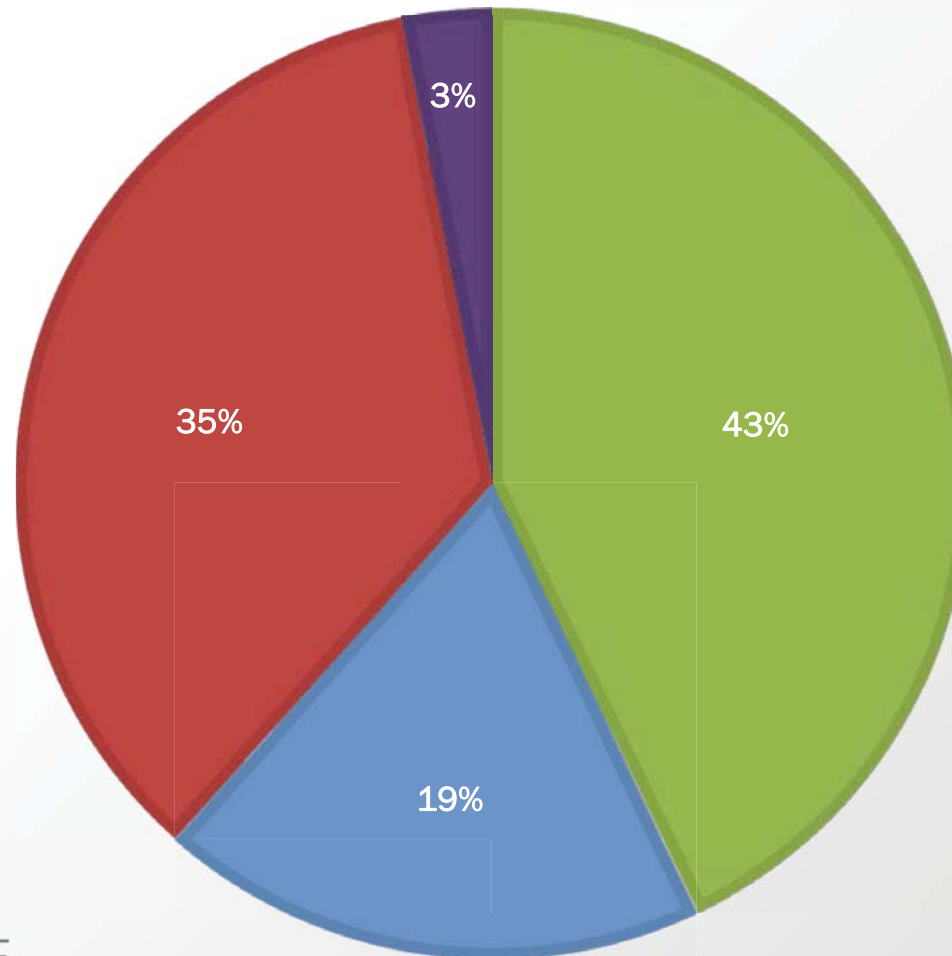
■ Standard End-User ■ Approver ■ Super User ■ Functional/Technical Owner



Survey Results

EXISTING FUNCTIONALITY MEETS MY NEEDS EFFECTIVELY TO COMPLETE MY DAILY TASKS

■ Agree ■ Neither Agree nor Disagree ■ Disagree ■ Unknown/Not Applicable



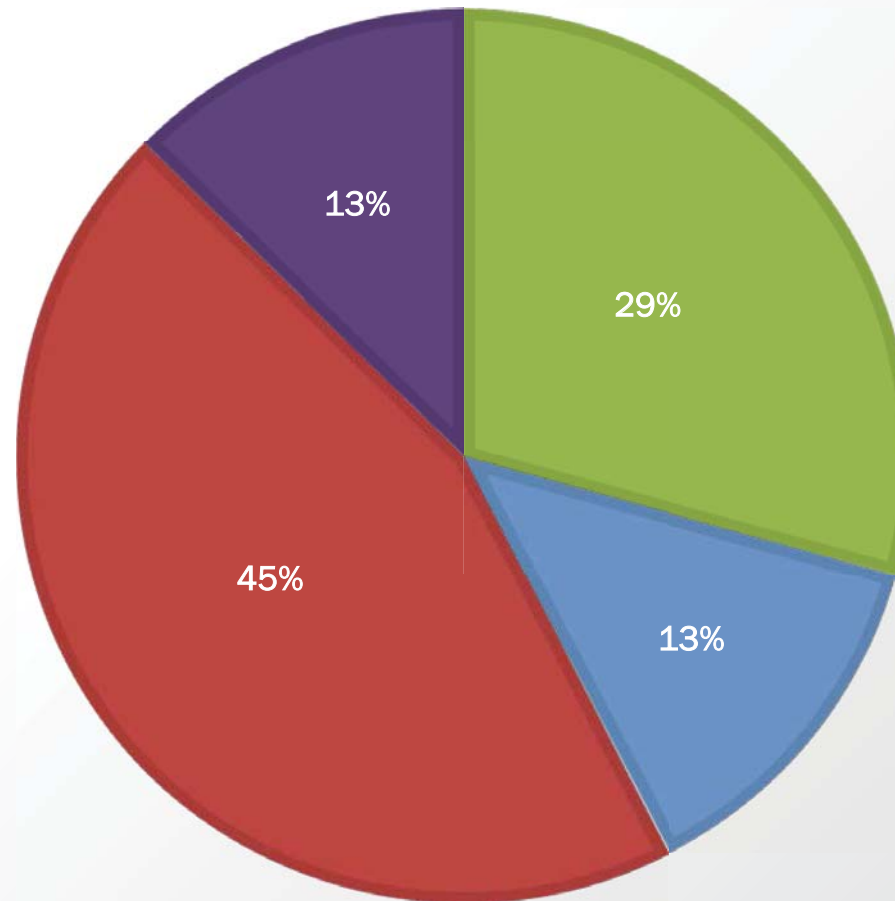
Key Findings

- Heavy Reliance on IT and Outside Consultants for SAP Enhancement Requests
- Limited Reporting Capabilities
- Lack of an intuitive user interface
- Limited use of some 'best practices' as per technology limitations/loss of institutional knowledge
- Limited ongoing training available

Survey Results

REPORTING CAPABILITIES SUFFICIENTLY ALLOW ME TO PERFORM MY JOB

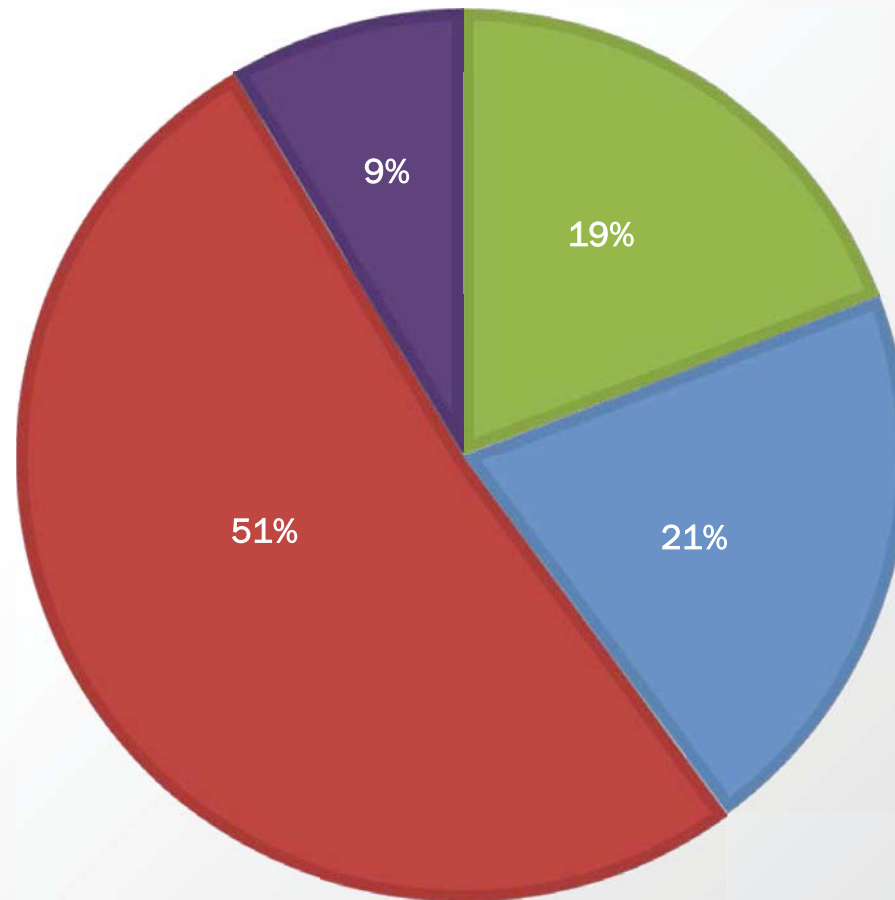
■ Agree ■ Neither Agree nor Disagree ■ Disagree ■ Unknown/Not Applicable



Survey Results

SAP TRAINING IS SUFFICIENTLY AVAILABLE WITHIN MY DEPARTMENT

■ Agree ■ Neither Agree nor Disagree ■ Disagree ■ Unknown/Not Applicable



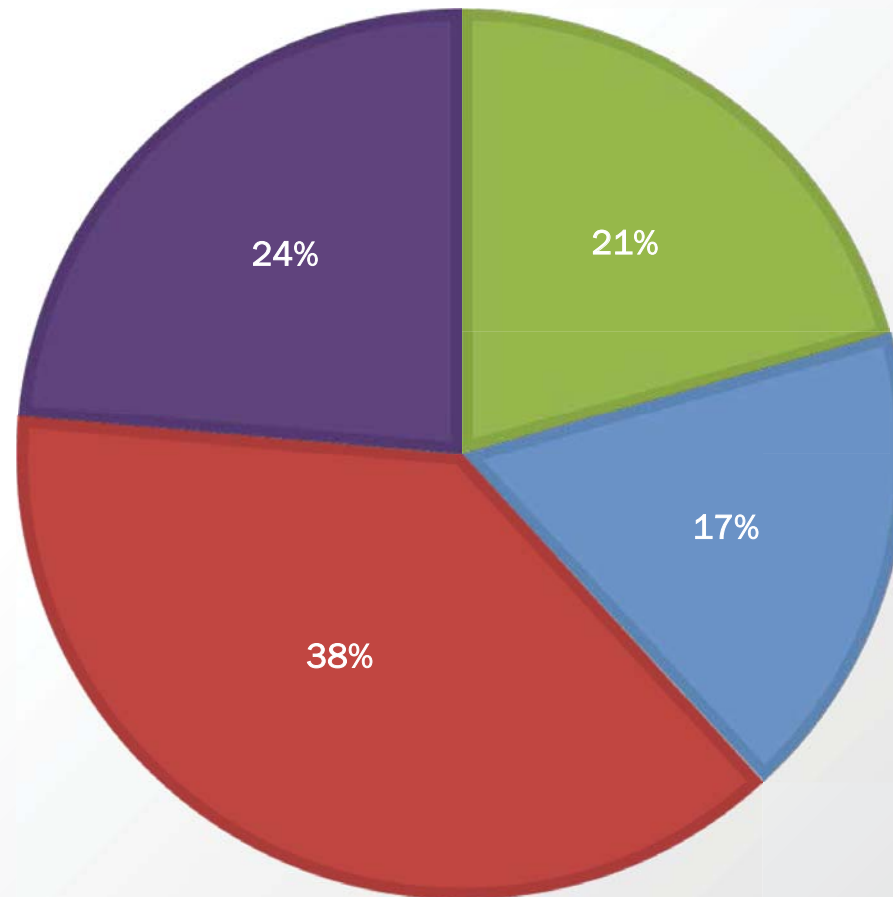
Key Findings

- SAP complexities frustrate users and discourage use of current systems to satisfy business needs
- Lack of Self Service Functionality
- Loss of SAP institutional knowledge
- HIGH cost of ownership

Survey Results

SAP SUFFICIENTLY HANDLES THE CITY'S CURRENT BUSINESS NEEDS

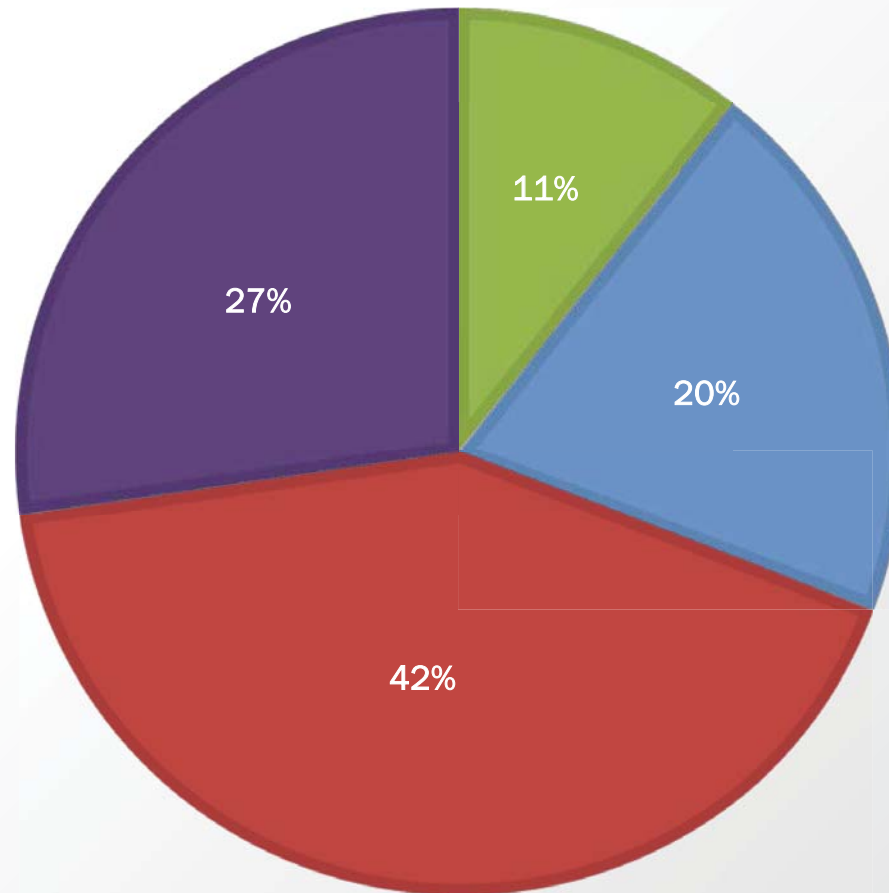
■ Agree ■ Neither Agree nor Disagree ■ Disagree ■ Unknown/Not Applicable



Survey Results

SAP SUFFICIENTLY HANDLES THE CITY'S FUTURE BUSINESS NEEDS

■ Agree ■ Neither Agree nor Disagree ■ Disagree ■ Unknown/Not Applicable



The ERP Assessment Survey tabulated by Vovici EFM includes further statistical analysis from respondents completing the survey during the period 9/09/2014 – 9/16/2014. If you are interested in obtaining a complete copy of the survey results and analysis report please contact the City of Palo Alto Information Technology Department.

6.4 APPENDIX D: TOTAL COST OF OWNERSHIP DETAILS AND ASSUMPTIONS

		Option 1	Option 2a	Option 2b	Option 3a	Option 3b
		ON PREMISE Status Quo with Investment	ALL IN CLOUD Upgrade SAP and Retain Existing Best of Breed Systems	MIXED ENVIRONMENTS Upgrade SAP Core Financials/HR/Payroll Modules Only Keep Existing Best of Breed Systems Obtain Best of Breed Utility Billing System	NEW ERP Go to Market for a Fully Integrated Public Sector Focused ERP Solution and Procure a Separate Utility Billing Best of Breed Solution	NEW ERP Go to Market for a Fully Integrated Core Financials/Human Capital Management Solution, Retain the Current Best of Breed Systems and Procure a Utility Billing Best of Breed
Cost Category	Assumptions					
EXTERNAL COSTS						
One-Time Cost Summary (External)						
Software License Fees						
All SAP Modules	8, 23	\$ -	\$ 2,750,000	\$ 2,250,000	N/A	N/A
Other Existing Software Licenses and Support		\$ -	\$ -	\$ -	N/A	\$ -
Planned Software Licenses and Support	3	N/A	\$ 878,151	\$ 878,151	N/A	\$ 762,880
Utility Best of Breed	24	N/A	N/A	\$ 263,000	\$ 263,000	\$ 263,000
All ERP Modules	30	N/A	N/A	N/A	\$ 806,984	N/A
Core Modules	35	N/A	N/A	N/A	N/A	\$ 644,253
Additional Hardware Costs	1	N/A	N/A	N/A	N/A	N/A
Consulting Implementation (Configuration / Data Conversion / Interface Development)						
All SAP Modules	8	N/A	\$ -	\$ -	N/A	N/A
Other Existing Software	9	N/A	\$ 160,000.00	\$ 160,000	N/A	N/A
Planned Software	10, 44	N/A	\$ 429,350	\$ 429,350	N/A	\$ 398,478
Utility Best of Breed	25	N/A	N/A	\$ 420,407	\$ 420,407	\$ 420,407
All ERP Modules	31	N/A	N/A	N/A	\$ 1,721,620	N/A
Core Modules	36	N/A	N/A	N/A	N/A	\$ 1,519,390
New System Implementation Training	11, 26, 46, 45	N/A	\$ 566,850.00	\$ 686,850	\$ 120,000	\$ 250,850
System Selection & Implementation Planning Fees	20	N/A	N/A	\$ 80,000	\$ 200,000	\$ 200,000
Subtotal for External One-Time Costs		\$ -	\$ 4,784,351	\$ 5,167,758	\$ 3,532,012	\$ 4,459,258
Recurring Cost Summary (External)						
Annual Software License and Solution Support (if On-Premise)						
All SAP Modules	2	\$ 250,000	N/A	N/A	N/A	N/A
Other Existing Software Support	13	\$ 417,910	N/A	N/A	N/A	N/A
Other Planned Software Support		N/A	N/A	N/A	N/A	N/A
Utility Best of Breed	28	N/A	N/A	\$ 64,138	\$ 64,138	\$ 64,138
All ERP Modules	32	N/A	N/A	N/A	\$ 177,537	N/A
Core Modules	37	N/A	N/A	N/A	N/A	\$ 141,736
Consulting (if On-Premise) Support Services						
All SAP Modules	27	\$ 250,000	N/A	N/A	N/A	N/A
Other Existing Software Support	3	\$ -	N/A	N/A	N/A	\$ -
Other Planned Software Support	38	N/A	N/A	N/A	N/A	\$ -
Utility Best of Breed	29	N/A	N/A	\$ -	\$ -	\$ -
All ERP Modules	33	N/A	N/A	N/A	\$ 80,698	N/A
Core Modules	40	N/A	N/A	N/A	N/A	\$ 64,425
Training						
Utility Best of Breed	21	N/A	N/A	\$ 15,000	\$ 25,000	\$ 25,000
All ERP Modules	34	N/A	N/A	N/A	\$ 50,000	N/A
Core Modules	41	N/A	N/A	N/A	N/A	\$ 40,000
Includes Licensing, Support & Consulting Services (if Cloud)						
All SAP Modules	8, 23	N/A	\$ 2,750,000	\$ 2,250,000	N/A	N/A
Other Existing Software Support	13	N/A	\$ 417,910	\$ 417,910	N/A	\$ 417,910
Other Planned Software Support	14	N/A	\$ 253,529	\$ 253,529	N/A	\$ 228,170
Utility Best of Breed		N/A	N/A	Cost not available	Cost not available	Cost not available
All ERP Modules		N/A	N/A	N/A	Cost not available	N/A
Core Modules		N/A	N/A	N/A	N/A	Cost not available
Training						
All SAP Modules	4, 15	\$ 100,000	\$ 100,000	\$ 100,000	N/A	N/A
Existing Software Support	5, 16	\$ 12,500	\$ 25,000	\$ 25,000	N/A	\$ 25,000
Planned Software Support	5, 17	N/A	\$ 25,000	\$ 25,000	N/A	\$ 25,000
Subtotal for External Recurring Costs		\$ 1,030,410	\$ 3,571,439	\$ 3,071,439	\$ 322,373	\$ 966,379
INTERNAL COSTS						
Recurring Cost Summary (Internal)						
Current (If On-Premise) Support FTE's	6, 42, 43	\$ 2,073,000	N/A	N/A	\$ 510,000	\$ 510,000
Additional (If On-Premise) Support FTE's						
All SAP Modules		N/A	N/A	N/A	N/A	N/A
Existing Software Support		N/A	N/A	N/A	N/A	N/A
Planned Software Support		N/A	N/A	N/A	N/A	N/A
Utility Best of Breed	22	N/A	\$ 400,000	\$ 400,000	\$ 400,000	\$ 400,000
All ERP Modules		N/A	N/A	N/A	N/A	N/A
Core Modules		N/A	N/A	N/A	N/A	N/A
Current (if Cloud) ERP and Existing Software Support	12	N/A	\$ 510,000	\$ 510,000	\$ -	\$ -
Additional (if Cloud) Support FTEs						
All SAP Modules		N/A	N/A	N/A	N/A	N/A
Existing Software Support		N/A	N/A	N/A	N/A	N/A
Planned Software Support	18	N/A	\$ 130,000	\$ 130,000	N/A	\$ 130,000
Utility Best of Breed		N/A	N/A	N/A	N/A	N/A
All ERP Modules		N/A	N/A	N/A	N/A	N/A
Core Modules		N/A	N/A	N/A	N/A	N/A
Internal Costs		\$ 2,073,000	\$ 1,040,000	\$ 1,040,000	\$ 910,000	\$ 1,040,000

Assumptions Option 1	
1	Additional Hardware Costs* - Materially insignificant for this analysis - Based upon our environmental assessment the City has plenty of capacity.
2	SAP Enterprise Support Contract - As provided by the City of Palo Alto, CA July 22, 2002 and updated for the calendar years 2013-2015
3	Assumed to be supported by a combination of external services (for hosted applications) and City's IT staff only for on-premise applications
4	Assumed 50 users/year for 20h at \$ 2,000 / user trained by rotation for ERP modules
5	Assumed 25 users/year for 10h at \$ 1000 / user trained by rotation for other existing applications
6	2014 Fully Loaded Salaries for 12.5 FTEs in the City's SAP Support team
7	Assumed the City will not move to the Cloud services in the Option 1
13	As per City provided annual maintenance cost for other existing applications
27	Sierra Infosis annual consulting fees, as per City provided contract

Assumptions Option 2a	
8	Per SAP presentation on April 2014 it is assumed that HANA Enterprise Cloud with hybrid hosting and management between SAP and the City will be the chosen solution
9	Integrations with the planned applications including the AUD, Maintenance Connect, Core, NeoGov, etc. are assumed to require 100 hrs each at \$400 per hour
10	Consulting Implementation with the planned applications including the E-Procurement Solution, Asset Management, SAP SRM; 50k for E procurement ; See
11	Users and admins training for SAP Upgrade and HANA Platform hybrid cloud plus Planned Software. Assumed 50 people for 40 hours at \$200/hr for HANA
12	Assumed to retain the following positions if maintaining a core ERP applications in a Tier #1 hosted environment with complete support services including: 2 SAP Technical at \$250, 000 / per year and 2 SAP Functional at \$260,000 / per year.
13	As per City provided annual maintenance cost for other existing applications
14	Estimated annual maintenance cost for other planned applications per third party vendor quotes
15	Assumed 50 users/year for 20h at \$ 2,000 / user trained by rotation for ERP modules
16	Assumed 25 users/year for 10h at \$ 1000 / user trained by rotation for other existing applications
17	Assumed 25 users/year for 10h at \$ 1000 / user trained by rotation for other planned applications
18	Per EAMS project recommendation to add 1 Asset Management Program Managers @ \$130,000/year
22	Assumed 3 Utilities Business Analysts at \$400,000/year for Best of Breed Utilities system
44	Estimated implementation costs for planned software (HR, E-Procurement, Maintenance Connection)

Assumptions Option 2b	
8	Per SAP presentation on April 2014 it is assumed that HANA Enterprise Cloud with hybrid hosting and management between SAP and the City will be the chosen solution
9	Integrations with the planned applications including the AUD, Maintenance Connect, Core, NeoGov, etc. are assumed to require 100 hrs each at \$400 per hour
10	Consulting Implementation with the planned applications including the E-Procurement Solution, Asset Management, SAP SRM; 50k for E-procurement ; See
12	Assumed to retain the following positions if maintaining a core ERP applications in a Tier #1 hosted environment with complete support services. 2 SAP
13	As per City provided annual maintenance cost for other existing applications
14	Estimated annual maintenance cost for other planned applications per third party vendor quotes
15	Assumed 50 users/year for 20h at \$ 2,000 / user trained by rotation for ERP modules
16	Assumed 25 users/year for 10h at \$ 1000 / user trained by rotation for other existing applications
17	Assumed 25 users/year for 10h at \$ 1000 / user trained by rotation for other planned applications
18	Per EAMS project recommendation to add 1 Asset Management Program Managers @ \$130,000/year
19	Users and admins training for Utilities Best of Breed at implementation time Assumed 15 people for 40 hours at \$200/hr
20	Plante Moran estimated fees for system selection projects for Utilities Best of Breed software
21	Assumed 15 users/year for 10h at \$ 1000 / user trained by rotation for Utilities Best of Breed application
22	Assumed 3 Utilities Business Analysts at \$400,000/year for Best of Breed Utilities system
23	SAP upgrade excluding Utilities Modules cost, which was assumed to be approximately \$500,000
24	Utilities Best of Breed average license costs between NorthStar, Cogsdale and Advanced Utility Systems (CO)
25	Utilities Best of Breed average consulting costs between NorthStar, Cogsdale and Advanced Utility Systems (CO)
26	Users and admins training for SAP Upgrade and HANA Platform hybrid cloud plus Planned Software. Assumed 50 people for 40 hours at \$200/hr. Plus Utilities
28	Average Best of Breed Utilities system recurring license and maintenance fees between NorthStar, Cogsdale and Advanced Utility Systems (CO)
29	Assumed NO Best of Breed Utilities system recurring consulting fees between NorthStar, Cogsdale and Advanced Utility Systems (CO)

Assumptions Option 3a	
20	Plante Moran estimated fees for system selection projects for Utilities Best of Breed software
21	Assumed 15 users/year for 10h at \$ 1000 / user trained by rotation for Utilities Best of Breed application
22	Assumed 3 Utilities Business Analysts at \$400,000/year for Best of Breed Utilities system
24	Utilities Best of Breed average license costs between NorthStar, Cogsdale and Advanced Utility Systems (CO)
25	Utilities Best of Breed average consulting costs between NorthStar, Cogsdale and Advanced Utility Systems (CO)
28	Average Best of Breed Utilities system recurring license and maintenance fees between NorthStar, Cogsdale and Advanced Utility Systems (CO)
29	Assumed NO Best of Breed Utilities system recurring consulting fees between NorthStar, Cogsdale and Advanced Utility Systems (CO)
30	Average Tier 1.5 (Infor) and Tier 2 (Tyler) ERP systems licenses and support
31	Average Tier 1.5 (Infor) and Tier 2 (Tyler) ERP systems implementation consulting costs
32	Average Tier 1.5 (Infor) and Tier 2 (Tyler) ERP systems recurring license and maintenance fees
33	Average Tier 1.5 (Infor) and Tier 2 (Tyler) ERP systems recurring consulting fees
34	Assumed average trained costs for Tier 1.5 (Infor) and Tier 2 (Tyler) ERP systems
42	Assumed to retain the following positions for Tier 1.5 or Tier 2 ERP applications: 2 SAP Technical at \$250,000 / per year and 2 SAP Functional at \$260,000 / per
46	Plus Utilities Best of Breed System training at \$120,000

Assumptions Option 3b	
3	Assumed to be supported by a combination of external services (for hosted applications) and City's IT staff only for on-premise applications
9	Integrations with the planned applications including the AUD, Maintenance Connect, Core, NeoGov, etc. are assumed to require 100 hrs each at \$400 per hour
10	Consulting Implementation with the planned applications including the E-Procurement Solution, Asset Management, SAP SRM; 50k for E procurement ; See Maintenance Connect and SRM tabs
13	As per City provided annual maintenance cost for other existing applications
14	Estimated annual maintenance cost for other planned applications per third party vendor quotes
16	Assumed 25 users/year for 10h at \$ 1000 / user trained by rotation for other existing applications
17	Assumed 25 users/year for 10h at \$ 1000 / user trained by rotation for other planned applications
18	Per EAMS project recommendation to add 1 Asset Management Program Managers @ \$130,000/year
20	Plante Moran estimated fees for system selection projects for Utilities Best of Breed software
21	Assumed 15 users/year for 10h at \$ 1000 / user trained by rotation for Utilities Best of Breed application
22	Assumed 3 Utilities Business Analysts at \$400,000/year for Best of Breed Utilities system
24	Utilities Best of Breed average license costs between NorthStar, Cogsdale and Advanced Utility Systems (CO)
25	Utilities Best of Breed average consulting costs between NorthStar, Cogsdale and Advanced Utility Systems (CO)
28	Average Best of Breed Utilities system recurring license and maintenance fees between NorthStar, Cogsdale and Advanced Utility Systems (CO)
29	Assumed NO Best of Breed Utilities system recurring consulting fees between NorthStar, Cogsdale and Advanced Utility Systems (CO)
35	Average Tier 1.5 (Infor) and Tier 2 (Tyler) ERP systems core financial licenses and support
36	Average Tier 1.5 (Infor) and Tier 2 (Tyler) ERP systems core financial consulting implementation fees
37	Average Tier 1.5 (Infor) and Tier 2 (Tyler) ERP systems core financial recurring license fees
38	Other Planned Software recurring consulting fees
40	Average Tier 1.5 (Infor) and Tier 2 (Tyler) ERP systems core financial recurring training fees
41	Average Tier 1.5 (Infor) and Tier 2 (Tyler) ERP systems core financial recurring consulting fees at 10% of license fees
43	Assumed to retain the following positions for Tier 1.5 or Tier 2 ERP core financial applications : 2 SAP Technical at \$250,000 / per year and 2 SAP Functional at \$260,000 / per year.
45	Plus Utilities Best of Breed System training at \$120,000 + Planned Applications Training (\$130,850)

{Thank You!}

plante
moran

audit • tax • consulting

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