



City of Tacoma

*Performance Audit Services
for SAP Functionality and
Departmental Operations*

Proposal No. IS05-0053F

February, 2006





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Section 1 Executive Summary

IBM appreciates the opportunity to provide the City of Tacoma (City) with Performance Audit Services for your SAP system. This past summer, our team of SAP trained consultants had extensive discussions with employees representing City of Tacoma departments and divisions at all levels. The goal of the audit was to evaluate the overall operational status of the City's SAP system and the performance of its SAP support organization, the Business Information Systems Department (BISD).

The audit provided the following outcomes, discussed in more detail in this report:

- A functional and technical analysis of the system in which we identified issues and opportunities for future improvement;
- Strategies for the City of Tacoma and BISD to address the findings of the analysis and the translation of those strategies into an executable plan; and
- Recommendations for BISD to be more effective in supporting the City's business units.

Listed below are the key messages delivered from this audit which are embedded in IBM's recommendations and findings.

- The City's SAP system has been live for two years and is executing its mission critical business processes.
- The SAP solution is operational, fundamentally sound, and stable.
- Tacoma's SAP implementation has the potential to drive significant improvements in operational efficiencies and enhance the City's ability to provide improved and more cost-effective services to its constituents.
- The City has knowledgeable people to maintain and enhance the system.
- A formalized governance structure is needed to define how the City will support SAP and conduct business to capitalize on its SAP investment.
- Even though some employees are frustrated because they have not fully participated in training on the new system and do not understand the changed business processes, a large percentage of City employees believe that the new system has great potential.
- An end user skills assessment should be conducted, along with the development of a formalized end user training strategy and the provision of additional SAP training for end users. There should also be additional training for BISD staff to more fully understand the potential of the current system and future upgrade. A formal city-wide communications strategy should also be developed and implemented.
- The City should mandate that appropriate end user training be an absolute prerequisite to enable access to certain areas of the SAP system.
- Plans should be made to upgrade to mySAP ERP no sooner than fiscal year 2007.
- The SAP core team should be reorganized into a tiered support structure and become SAP certified.
- The data center hardware operations and technical activities should be outsourced to a third party to relieve the City from daily tactical activities. A relationship



with an external SAP delivery center should be established to manage the SAP application and configuration on a daily basis.

It is IBM's goal to help provide the City with the information necessary to maximize the potential of its ERP system and, in doing so, be more responsive and ultimately provide better services to the community. The City's mission statement guided the development of the nine recommendations presented in this audit report in Section 2.4: Key Findings and Recommendations. The recommendations are also intended to position the City to achieve its longer-term objectives.

This audit document is organized as follows:

- Section 1 contains IBM's executive summary.
- Section 2 explains more specifically the audit approach. It also presents the high-level recommendations and implementation plans and the high-level findings that led to them.
- Section 3 contains more detailed discussion of the BISD organization and the organizational and change management recommendations.
- Section 4 contains more detailed discussion of the gaps identified in the SAP functional areas and the recommendations for addressing them.
- Section 5 contains references and support materials.

SAP implementations result in tremendous change both at "go-live" and on an ongoing basis. This is true in terms of the technology as well as the business processes. This level of change requires the organization to understand implications and to be prepared to make tough decisions. Making those types of decisions requires executive sponsorship and governance at all levels of the organization. Therefore several of IBM's recommendations introduce change management principles and processes that create organizational structure and accountability for resolving ongoing system issues. Because SAP is not new in the marketplace, the City can take advantage of best practices and lessons learned from other organizations using SAP.

IBM's recommendations present ways to incorporate best practices into the City's ongoing operations so as to keep up with industry changes and work toward continuous improvement. In addition, several of the recommendations provide methods for the City to fully leverage their investment in this technology through training employees on more of the system's capabilities and developing reports that facilitate decision-making. Taken together, all of IBM's nine recommendations can move the City towards more streamlined operations. The SAP system will not only support operations, but it will also act as an agent for improving operations.

IBM's estimated timeline for implementing the recommendations is found in Figure 4. Each of the nine recommendations is represented on a timeline that extends to the end of 2007. The City's next step is to determine its priorities and implementation considerations to set forth a strategy for the future.



Please feel free to contact me if you have any questions. Thank you again for the opportunity to work with you and I look forward to having the opportunity to work with you again in the future.

Sincerely,

Tom Augustine



Section 2 Audit Methodology, Key Findings and Recommendations

Section 2.1: Introduction

The City of Tacoma implemented the following components of SAP in 2003: mySAP (October 6), CCS (November 3) and BW-SEM (November 17). The primary objective of the implementation was to replace multiple legacy systems that had outdated technology. These systems included functionality in the areas of financials, utility billing, work management, and human resources.

The transition to SAP was a success in terms of maintaining a reasonable level of customer service, staying on schedule and keeping within budget. However, the implementation process did not adequately meet employees' needs for learning how to interact with the new system. It also did not meet users' expectations that they would receive additional functionality and more streamlined processes. Employees have admirably continued to perform the jobs for which they are responsible, even though they have not had the level of training and tools to become proficient with the new system. The City recognizes that this is not sustainable and aims to correct this problem in an effective, efficient way. Because reducing headcount was not an objective of the SAP implementation, the City's goal is to equip its personnel to provide services through more streamlined processes and optimization of the SAP technology. Users' expectations were not fully managed prior to the system implementation; the City now recognizes the need for change management to communicate to users about changes in processes and the addition of functionality.

The implementation also raised the City's awareness of another significant need: governance over the policies, processes and technology that are so tightly integrated in the City's operations and now also more integrated in the SAP system. Now that the system has been live for two years, the City has requested an evaluation of its current issues. The City contracted with IBM to perform an audit with the following objectives:

- To review the current functionality of the SAP system and to provide the City with a gap analysis;
- To develop a comprehensive work plan of system and business process issues and provide the City with a recommended approach for addressing these issues; and
- To assess the effectiveness, efficiency and organizational structure of the SAP support organization.

Section 2.2: Audit Approach

To achieve the audit objectives, IBM conducted executive visioning workshops as well as focused functional workshops with process owners and subject matter experts. We

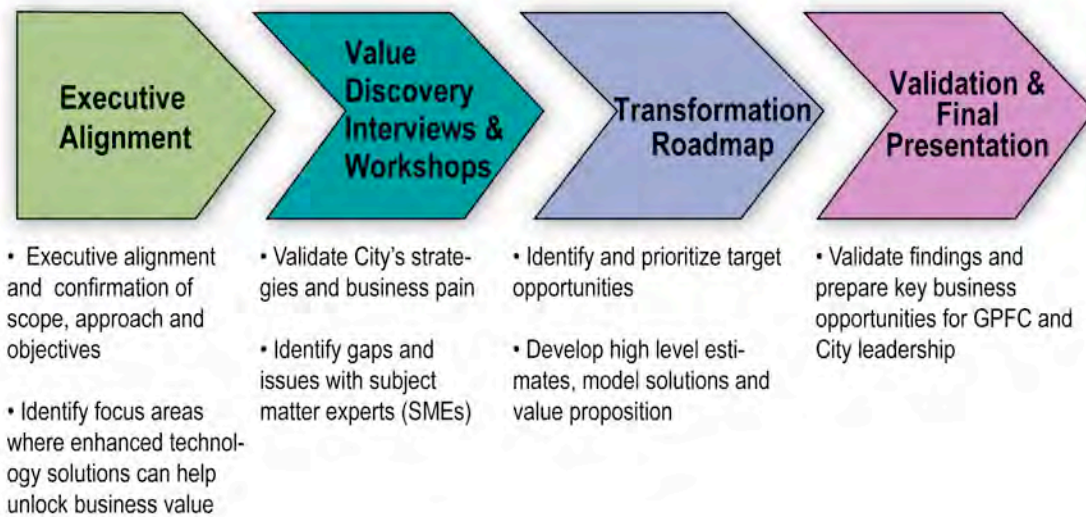


analyzed the current support structure and organization as well as the operational departments. We also used the following sources in our information gathering:

- Existing documentation such as the business blueprint, business process procedures, and user manuals;
- Previous consulting studies; and
- System configuration documentation, system design and master data, and transaction data.

IBM gathered information about the issues the City currently faces and developed recommendations to address these issues. Figure 1 shows our methodology for conducting the audit.

Figure 1. IBM’s Audit Methodology



The purpose of the executive visioning workshops on July 12-13, 2005, was to meet with key executives to validate an understanding of enterprise-wide strategic direction. We met with multiple City Council members as well as the Mayor and the City Manager. A list of attendees is available in Appendix A. IBM reviewed the City’s strategy documents and plans. We also validated the vision, mission, critical success factors, key performance indicators and compelling need for change. Before moving forward, IBM confirmed senior management’s commitment to and expectations for the audit. The mission statement guided the generation of recommendations so that any changes made would ultimately work towards the City fulfilling its mission of:

Providing high-quality, innovative and cost-effective municipal services that enhance the lives of our citizens and the vitality of our neighborhoods and businesses through teamwork, integrity and continuous improvement in partnership with our community.





This mission translates to the measurable performance goals for optimizing the SAP system listed in Table 1.

Table 1. Performance Goals Generated From the City’s Mission	
High-quality services	<ul style="list-style-type: none"> • Increase the quality of the data in the system (i.e., reduce duplication, have a consistent format, reduce potential for error while entering data) • Reduce the time and effort required for a user to locate and analyze information for decision-making • Increase customers’ level of satisfaction when working with the City • Increase users’ level of comfort with using the SAP system
Innovative services	<ul style="list-style-type: none"> • Increase, through the application of technology, the number of services the City provides • Increase the methods through which the City’s customers can access services
Cost-effective services	<ul style="list-style-type: none"> • Reduce the number of steps external users have to take to conduct business with the City (this includes reducing the time it takes and reducing the potential for error) • Reduce the number of steps internal users have to take to accomplish their tasks within the SAP system
Teamwork	<ul style="list-style-type: none"> • Increase employees’ knowledge of how others can support them (with information or by validating their work) • Increase employees’ knowledge of the City’s overall vision and mission so that they share those objectives • Maximize the use of electronic workflows with input from appropriate personnel involved in targeted processes
Integrity	<ul style="list-style-type: none"> • Increase employees’ ability to do their jobs correctly the first time
Continuous improvement	<ul style="list-style-type: none"> • Increase the extent to which best practices and lessons learned are shared • Optimize the use of SAP’s enhancements and new releases

The main themes identified in the executive visioning workshops were:

- Much difficulty has arisen from users’ lack of awareness of standard processes. As a result, they execute processes in different ways.
- Departments with champions in embracing technology adjust more quickly to the implementation of SAP than those departments that resist change.
- In Tacoma, technology is generally viewed as a cost, not an opportunity.
- Return on investment (ROI) was not part of the rationale for a new system except in hindsight. The driver for change was the need to replace legacy systems that were no longer sustainable.
- The City developed an expectation that the system would deliver functionality beyond what previously existed. In the near term since the implementation of the system, the City has had to work to maintain the previous level of functionality





within some business processes. In other areas, the extent of functionality met or exceeded previous levels.

IBM facilitated nineteen functional workshops during August 2005. The agenda of each workshop included identifying:

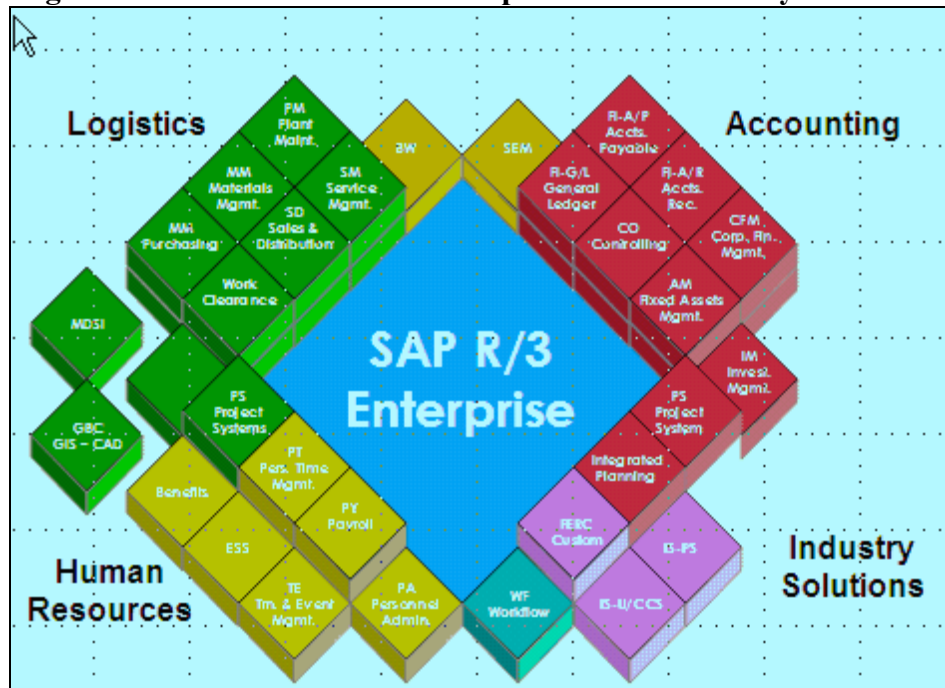
- The As-Is and To-Be process designs,
- Business requirements,
- Key performance measurements and metrics, and
- Risks associated with the solution in relation to people, process and technology.

The Departments represented in the functional workshops are listed in Appendix B – Functional Workshop Schedule and Attendees.

Section 2.3: Technical Environment

The City has implemented the functionality of both the Public Sector and the Utilities solution sets of SAP on the same infrastructure. This combination of solution sets is unique in the SAP world. As a result, the City has undergone complex integration efforts. Figure 2 depicts the various SAP Solutions and functional areas in use for which the BISD organization provides management and support. The Industry Solutions functionality includes that for both the Public Sector and Utilities.

Figure 2. The SAP Solution Sets Implemented at the City of Tacoma

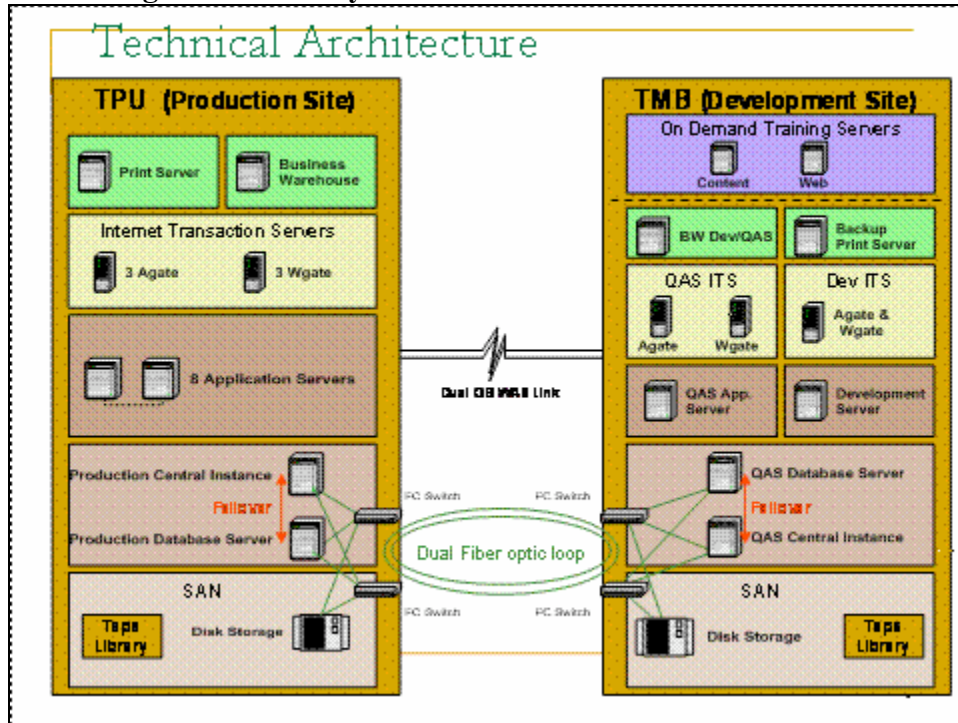


The four SAP Solution Sets are supported by a hardware and software configuration that has no serious performance issues and is adequate to support the City’s current workload.



Figure 3 is a graphical depiction of the high level Technical Architecture that supports the City of Tacoma.

Figure 3. The City of Tacoma’s Technical Architecture



Section 2.4: Key Findings and Recommendations

IBM has identified nine generalized recommendations we believe the City would benefit from implementing. Within this section, we define each recommendation and provide the broad findings and justification that led to these recommendations. We will reference the specific sub-sections of Sections 3 and 4 where more detailed information is provided from the gap analyses. By addressing the key findings with these recommendations, the City can expect to see improvements in its operational performance.

Table 2 illustrates how IBM’s recommendations are directed at meeting the City’s performance goals.



Table 2. How IBM’s Recommendations Meet the City’s Performance Goals						
Recommendations	High-quality services	Innovative services	Cost-effective services	Teamwork	Integrity	Continuous improvement
1. Revise the governance model for ongoing support of the SAP implementation.	X	X	X	X	X	X
2. Establish a Best Business Practice Committee that is responsible for issue resolution.	X	X	X	X	X	X
3. Restructure the SAP support organization.	X	X	X			
4. Assign resources to certain quick-hit changes.	X		X	X	X	X
5. Provide ongoing education and references for users.	X		X	X	X	X
6. Improve reporting capabilities to enable decision-making.	X		X	X	X	X
7. Apply best practices for upgrading to subsequent versions of SAP and/or adding functionality.		X	X			X
8. Provide for the accuracy and integrity of all master data by creating an ownership structure and rules.	X		X	X	X	
9. Implement more robust system controls.	X		X		X	

The remainder of this section explains each of the nine recommendations, the findings that support the recommendations, expected benefits, and implementation considerations. More details on each of the findings can be found in the appropriate referenced sections.

Recommendation 1. Revise the governance model for ongoing support of the SAP implementation.	
Description of Recommendation	The City would benefit from a clearer delineation of responsibilities for handling requests for (1) changes to existing processes and functionality and for (2) new processes and functionality.
Findings	<ul style="list-style-type: none"> Section 3.1: Organization and Governance (O&G) Finding #1: The Advisory Board and BISD have been responding to day-to-day needs to keep City operations going. Now that the SAP system has been live for some time, the Advisory Board needs a more strategic, forward-looking role. Section 3.1: Organization and Governance (O&G) Finding #2: The City has not clearly defined the strategy and process for users to gain approval for their requests for system changes.
Expected Benefits	Improved project management, improved leadership will allow the City to better leverage the benefits of the SAP system.





Recommendation 1. Revise the governance model for ongoing support of the SAP implementation.	
Implementation Considerations	<ul style="list-style-type: none"> • Timeline: 1-3 months • Dependencies: Requires agreement and approval of City Leadership • Relative Cost: Low

Recommendation 2. Establish a Best Business Practice Committee that is responsible for issue resolution.	
Description of Recommendation	The Best Business Practice Committee (BBPC) is designed to study users' requests for change. They will determine the feasibility of the request and present a business case including how, when, who and what to the approval body, the Advisory Board. Once the BBPC is in place, it would immediately have issues to address, as documented throughout Sections 3 and 4 in response to the findings listed below.
Findings	<ul style="list-style-type: none"> • Section 3.1: Organization and Governance (O&G) Finding #1: The Advisory Board and BISD have been responding to day-to-day needs to keep City operations going. Now that the SAP system has been live for some time, the Advisory Board needs a more strategic, forward-looking role. • Section 4.1: Industry Solutions Finding #2: The SAP system changed the way users perform the Move-In/Move-Out processes. This has raised some questions as to whether the system or the process needs to change to perform these functions correctly. • Section 4.1: Industry Solutions Finding #7: Customers' needs are not being met for two reasons: (1) policies do not exist to address specific requirements, and (2) reporting capabilities do not exist to allow users to support certain customers' requests. • Section 4.1: Industry Solutions Finding #8: Within the Device and Equipment areas are opportunities to make processes more effective and efficient using information in the SAP system. • Section 4.1: Industry Solutions Finding #9: Modifications to the notification process would enable agents to have more data for decision-making. • Section 4.1: Industry Solutions Finding #10: Invoice reversals and adjustments are required to correct errors in accounts. • Section 4.1: Industry Solutions Finding #11: The complexity of collective accounts presents a policy debate regarding how they should be corrected. • Section 4.1: Industry Solutions Finding #14: Users in the FERC area are frustrated due to the business requirement of biennial budgeting and SAP's lack of a standard budget configuration that meets biennial budgeting. • Section 4.1: Industry Solutions Finding #16: The City can use the Funds Management module to achieve more financial benefits. • Section 4.2: Logistics Finding #1: Staff in the Plant Maintenance area





Recommendation 2. Establish a Best Business Practice Committee that is responsible for issue resolution.

	<p>are not using the full functionality that WMS provides.</p> <ul style="list-style-type: none">• Section 4.2: Logistics Finding #5: Users prefer that the system be customized to their specific business needs.• Section 4.2: Logistics Finding #6: Permitting processes are not operating efficiently.• Section 4.2: Logistics Finding #7: The City can improve the efficiency of its work force by considering relevant best practices.• Section 4.2: Logistics Finding #8: The framework purchase orders are cumbersome to use.• Section 4.2: Logistics Finding #11: Measurement document data is not accurate and the process of capturing this data is not consistent across business units.• Section 4.2: Logistics Finding #12: The system does not provide time period Project Cost Reporting.• Section 4.2: Logistics Finding #14: The budget entry and maintenance process requires cost element detail, which is excessively time consuming for some departments and not used by others.• Section 4.2: Logistics Finding #18: Users need a cost center manager report for plan vs. actual labor hours charged to capital projects, through Work Orders that have a settlement rule split between Capital and O&M receivers.• Section 4.2: Logistics Finding #22: SAP's Material Requirements Planning functionality is not being used to its fullest potential.• Section 4.2: Logistics Finding #23: The Requisitions/Purchase Order processes are error-prone due to missing information and improper procedural timing.• Section 4.3: Accounting Finding #2: Users in the Controlling area are frustrated due to the business requirement of biennial budgeting and SAP's lack of a standard budget configuration that meets biennial budgeting.• Section 4.3: Accounting Finding #4: The customer payment application process does not enable users to efficiently support customers.• Section 4.3: Accounting Finding #5: Accounts Receivable processes do not efficiently make information available to users when they need it.• Section 4.3: Accounting Finding #6: The accounting system, particularly in the area of funds management and budget preparation, as designed was not optimally configured and was not using SAP recommended best practices.• Section 4.4: Integrated Modules Finding #2: SAP Business Workflow offers additional workflow solutions that may be of use to the City.• Section 4.5: Human Resources Finding #2: Training and Events users are unable to proficiently perform their business functions due primarily to unmet information needs.
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Recommendation 2. Establish a Best Business Practice Committee that is responsible for issue resolution.	
	<ul style="list-style-type: none"> Section 4.5: Human Resources Finding #3: Several HR policies are not supported by the SAP software which requires users to develop manual support processes. Section 4.5: Human Resources Finding #4: Retirement end users do not have the tools or the time to effectively handle all of their job requirements.
Expected Benefits	Better and more efficient use of BISD resources. Better communication between City Departments that would ensure that new business process are optimal and integrated across functional areas.
Implementation Considerations	<ul style="list-style-type: none"> Timeline: 3-6 months Dependencies: Approval by City Leadership, availability of staff Relative Cost: Low

Recommendation 3. Restructure the SAP support organization.	
Description of Recommendation	The City's SAP support organization can effectively transfer some of its technical responsibilities to a third-party organization. This would enable the support organization to focus on the business priorities of the Departments in a more timely manner.
Findings	Section 3.2: BISD Support Finding #1: End users have not found BISD to be responsive to and effective at meeting their needs.
Expected Benefits	A more effective and efficient SAP Competency Center that is able to better meet the need of its customers.
Implementation Considerations	<ul style="list-style-type: none"> Timeline: 3-9 months Dependencies: Approval by City Leadership, agreement on approach Relative Cost: Cost is highly dependent on scope and approach.

Recommendation 4. Assign resources to certain quick-hit changes.	
Description of Recommendation	Quick-hits are defined as efforts that have a significant positive impact but take little time and resources to implement. IBM is recommending quick-hits in the areas of: technology, process improvement tools, communications and training. A list of the quick-hits is in Section 2.5. Descriptions of each are found in Sections 3 and 4 with their associated findings, which are listed below.
Findings	<ul style="list-style-type: none"> Section 3.2: BISD Support Finding #5: A formal testing environment does not currently exist within BISD. Section 3.3: Training and Communications (T&C) Finding #2: Some end users do not have sufficient tools and knowledge to perform their jobs using the SAP system. Section 4.1: Industry Solutions Finding #3: Errors are possible in the Reversal Move-Out process because the user must remember to accurately revise the entire account. Section 4.2: Logistics Finding #10: A reference is not available that matches parts with vehicles.





Recommendation 4. Assign resources to certain quick-hit changes.	
	<ul style="list-style-type: none"> • Section 4.2: Logistics Finding #13: Report printing does not include the selection criteria. • Section 4.2: Logistics Finding #16: Project settlement is hampered by open, conversion projects with no transactions. • Section 4.2: Logistics Finding #17: Inaccurate project costs are resulting from staff incorrectly entering time in CATS. • Section 4.2: Logistics Finding #19: Reporting by vendor type is a manual and laborious process. • Section 4.2: Logistics Finding #21: Material ordering and tracking are inefficient processes. • Section 4.5: Human Resources Finding #1: Position data lacks integrity because a scrub of the data did not take place before conversion into SAP. • Section 4.5: Human Resources Finding #5: The Payroll team does not have a test environment. • Section 4.5: Human Resources Finding #8: Users do not have a consistent policy for entering retirement information about new hires.
Expected Benefits	Improved usability of the system.
Implementation Considerations	<ul style="list-style-type: none"> • Timeline: 3-9 months • Dependencies: None • Relative Cost: Low

Recommendation 5. Provide ongoing education and references for users.	
Description of Recommendation	Users do not currently have adequate training on and understanding of how the SAP system can support them in completing their job responsibilities. In some cases, communications are required to inform users of system capabilities or changes in procedures so that they can continue to function effectively. Continue to document training materials, manuals, and cheat sheets to raise users' comfort level with the technology and reduce the occurrence of errors.
Findings	<ul style="list-style-type: none"> • Section 3.3: Training and Communications (T&C) Finding #1: The City lacks a comprehensive, coordinated communications program. • Section 3.3: Training and Communications (T&C) Finding #2: Some end users do not have sufficient tools and knowledge to perform their jobs using the SAP system. • Section 3.3: Training and Communications (T&C) Finding #3: End users lack a forum for sharing information. • Section 3.3: Training and Communications (T&C) Finding #4: Users have not maximized their use of SAP's query reporting tool. • Section 4.1: Industry Solutions Finding #4: The Owner Allocation process available in SAP has been well received by users, who are now able to identify continuous improvement opportunities. • Section 4.2: Logistics Finding #1: Staff in the Plant Maintenance area





Recommendation 5. Provide ongoing education and references for users.	
	<p>are not using the full functionality that WMS provides.</p> <ul style="list-style-type: none"> • Section 4.2: Logistics Finding #3: WMS users do not have dependable, accurate help resources. • Section 4.2: Logistics Finding #4: WMS users are interested in sharing experiences with other organizations. • Section 4.2: Logistics Finding #20: The purchasing info record contains data of use to various parties. However, not all parties are aware that the data is available.
Expected Benefits	User will be able to do their job better. End users will be less dependent on BIRD for assistance.
Implementation Considerations	<ul style="list-style-type: none"> • Timeline: On-going • Dependencies: Availability of BIRD staff. Commitment of Departments to send staff to training. • Relative Cost: Medium

Recommendation 6. Improve reporting capabilities to enable decision-making.	
Description of Recommendation	The breadth and depth of information available in the SAP system can be further leveraged. The integration of the SAP modules presents additional opportunities to study the data and use it for decision-making purposes.
Findings	<ul style="list-style-type: none"> • Section 3.2: BIRD Support Finding #1: End users have not found BIRD to be responsive to and effective at meeting their needs. • Section 4.1: Industry Solutions Finding #7: Customers' needs are not being met for two reasons: (1) policies do not exist to address specific requirements, and (2) reporting capabilities do not exist to allow users to support certain customers' requests. • Section 4.1: Industry Solutions Finding #9: Modifications to the notification process would enable agents to have more data for decision-making. • Section 4.1: Industry Solutions Finding #14: Users in the FERC area are frustrated due to the business requirement of biennial budgeting and SAP's lack of a standard budget configuration that meets biennial budgeting. • Section 4.1: Industry Solutions Finding #16: The City can use the Funds Management module to achieve more financial benefits. • Section 4.2: Logistics Finding #9: Plant Management data reports do not meet users' needs. • Section 4.2: Logistics Finding #12: The system does not provide time period Project Cost Reporting. • Section 4.3: Accounting Finding #2: Users in the Controlling area are frustrated due to the business requirement of biennial budgeting and SAP's lack of a standard budget configuration that meets biennial budgeting. • Section 4.3: Accounting Finding #3: The current approach to billing using multiple SAP modules is creating inconsistencies and errors.





Recommendation 6. Improve reporting capabilities to enable decision-making.	
	<ul style="list-style-type: none"> • Section 4.3: Accounting Finding #5: Accounts Receivable processes do not efficiently make information available to users when they need it. • Section 4.3: Accounting Finding #9: Asset Management users are not getting the information they need to perform their jobs. • Section 4.4: Integrated Modules Finding #1: Financial reporting does not currently meet users’ needs at the necessary level of detail or summarization. • Section 4.4: Integrated Modules Finding #3: Accurate information is not available for reports due to errors when it is entered in the system. • Section 4.4: Integrated Modules Finding #4: Project reporting does not contain all the information (financial and text) contained in Project System for a project. • Section 4.4: Integrated Modules Finding #5: Reporting in the general ledger, month and year end close areas is cumbersome and error prone due to the need for multiple reporting tools. • Section 4.5: Human Resources Finding #2: Training and Events users are unable to proficiently perform their business functions due primarily to unmet information needs. • Section 4.5: Human Resources Finding #3: Several HR policies are not supported by the SAP software which requires users to develop manual support processes. • Section 4.5: Human Resources Finding #4: Retirement end users do not have the tools or the time to effectively handle all of their job requirements. • Section 4.5: Human Resources Finding #6: The time audit report does not meet payroll/time users’ needs.
Expected Benefits	End users will be able to do their job better. The City will be better able to leverage the SAP solution
Implementation Considerations	<ul style="list-style-type: none"> • Timeline: 3-12 months • Dependencies: BIRD and City resources are available to address issues • Relative Cost: Low- Medium. Some issues may need assistance from consultants to resolve

Recommendation 7. Apply best practices for upgrading to subsequent versions of SAP and/or adding functionality.	
Description of Recommendation	The City can take advantage of SAP’s system upgrades to keep up with industry best practices. Each time new functionality is available, the City will need to evaluate its need for it and how implementing it will impact policies, processes, and customers.
Findings	<ul style="list-style-type: none"> • Section 3.2: BIRD Support Finding #2: The City’s SAP system has been live for almost two years and is executing its mission critical business processes. The SAP solution is operational, fundamentally sound, and stable. • Section 3.2: BIRD Support Finding #3: The City is currently running





Recommendation 7. Apply best practices for upgrading to subsequent versions of SAP and/or adding functionality.	
	<p>SAP version 4.7 SP1, which will go out of mainstream support in March 2009.</p> <ul style="list-style-type: none"> • Section 3.2: BISD Support Finding #4: The process for maintaining transports across the three tier system landscape does not follow best practices. • Section 4.1: Industry Solutions Finding #12: Maintaining the system and its dependencies through upgrades is difficult due to the customizations within CCS. • Section 4.1: Industry Solutions Finding #13: There is a known system shortcoming in the integration between the Treasury module and the Funds Management module. (also Accounting Finding #7) • Section 4.1: Industry Solutions Finding #15: Grants management processes are not fully supported by the existing functionality. • Section 4.1: Industry Solutions Finding #16: The City can use the Funds Management module to achieve more financial benefits. • Section 4.3: Accounting Finding #1: The City’s use of the CO module for budgeting does not include monitoring the budget utilizing availability control. • Section 4.5: Human Resources Finding #7: By using the Position Control functionality in SAP, the City will have more tools to make financial HR decisions.
Expected Benefits	Better integration of the SAP Public Sector Solution with the utility solution. Elimination of custom code. Upgrades need to performed in order to continue to receive support from SAP
Implementation Considerations	<ul style="list-style-type: none"> • Timeline: No earlier than 2007 • Dependencies: Governance and BISD competency center re-org completed • Relative Cost: high technical upgrade 500 K – 1 million. Functional upgrade > 1 million depending on scope

Recommendation 8. Provide for the accuracy and integrity of all master data by creating an ownership structure and rules.	
Description of Recommendation	Because many functions use the master data, maintaining its accuracy and integrity allows users to take advantage of efficiencies the system provides. Individuals will be responsible for various types of master data, resulting in the identification and communication of consistent formats. Security controls and an accountability system will keep the data from becoming corrupted.
Findings	<ul style="list-style-type: none"> • Section 4.1: Industry Solutions Finding #1: Duplication within the master data set results from the lack of a standard way of entering and locating existing data. • Section 4.2: Logistics Finding #2: Master data is not controlled and the City does not have one owner to manage the ‘create’ and ‘change’





Recommendation 8. Provide for the accuracy and integrity of all master data by creating an ownership structure and rules.	
	process. As a result, the data lacks integrity.
Expected Benefits	<ul style="list-style-type: none"> • Eliminate errors and rework throughout the system. • Save time for users in finding the information they need. • Save time for users when they do not have to re-enter data that already exists in the system.
Implementation Considerations	<ul style="list-style-type: none"> • Timeline: on-going • Dependencies: availability of BISD and Department staff. • Relative Cost: low

Recommendation 9. Implement more robust system controls.	
Description of Recommendation	The SAP system has built-in controls that are available to help maintain the accuracy and meaningfulness of the data and processes. Greater use of these controls will streamline processes and reduce error.
Findings	<ul style="list-style-type: none"> • Section 4.1: Industry Solutions Finding #5: The process of creating contacts is subject to errors and requires more time than necessary due to users' confusion. • Section 4.1: Industry Solutions Finding #6: Cash Management is error-prone and requires manual processing. • Section 4.2: Logistics Finding #15: All individuals, regardless of their department, can access all projects and can make changes without any limitations. • Section 4.3: Accounting Finding #1: The City's use of the CO module for budgeting does not include monitoring the budget utilizing availability control. • Section 4.3: Accounting Finding #10: Proper financial controls may not be in place.
Expected Benefits	Proper financial control. Proper separation of duties.
Implementation Considerations	<ul style="list-style-type: none"> • Timeline: 3-6 months • Dependencies: Availability of BISD and Finance staff • Relative Cost: Low





Section 2.5: High Level Business Case and Transition Plan

In general, IBM believes that the SAP system was the right choice for the City. Table 3 shows IBM’s estimates for implementing the nine recommendations. With further discussion and investigation, these estimates can be refined. The high, medium and low designations for cost are defined as:

- Low: below \$30,000
- Medium: between \$30,000 and \$60,000
- High: greater than \$60,000

Table 3. Estimated Transition Requirements					
Recommendation	Impact	Time	Effort	Benefits	Cost
1. Revise the governance model for ongoing support of the SAP implementation.	All Departments at the City and some external stakeholders	1-3 months	Medium	Improved project management, improved leadership will allow the City to better leverage the benefits of the SAP system.	L
2. Establish a Best Business Practice Committee that is responsible for issue resolution.	All Departments at the City and some external stakeholders	3-6 months	Medium	Better and more efficient use of BISD resources. Better communication between City Departments. This would ensure that new business processes are optimal and integrated across functional areas	L
3. Restructure the SAP support organization.	BISD, all stakeholders	3-9 months	High	A more efficient SAP Competency Center that is able to better meet the needs of its customers.	Initial investment may be high. Lower cost over time
4. Assign resources to certain quick-hit changes.					





Table 3. Estimated Transition Requirements					
Recommendation	Impact	Time	Effort	Benefits	Cost
• Purchase the Mercury testing tool set	BISD	3-6 months	Low	Ability to perform regression testing better. Easier to upgrade the system	H
• Establish a formal Quality Assurance group	BISD, all stakeholders	1-3 months	Low	Ability to maximize the value of the SAP solution	L
• Add status information to work plan	BISD	1-3 months	Low	Better Communication	L
• Provide SAP training to BISD staff	BISD	On-going	Medium	BISD Employees who are able to respond to their customers	H
• Use and train BISD staff on Solutions Manager	BISD	3-6 months	Medium	Solution Manager is a required SAP tool for all future releases	M
• Technology enhancement for the Move-Out process	BISD	3-6 months	Low	Better system controls	L
• Create and implement Bills of Materials for vehicles	BISD, Fleet Services	3-6 months	Medium	Improved usability of the system	L
• Create and issue an instruction sheet for the 'Print List Output Screen'	BISD	1-3 months	Low	Improved usability of the system	L
• Close all conversion projects with no activity since go-live	BISD	1-3 months	Low	Improved usability of the system	L
• Reinforce the necessity of receiving proper time reports from contractors	BISD, HR	1-3 months	Low	Best Business Practice	L
• Use the industry field on the Vendor master	BISD, Purchasing	1-3 months	Low	Best Business Practice	L
• Create and implement Bills of Materials for	BISD, Purchasing	1-3 months	Low	Best Business Practice	L





Table 3. Estimated Transition Requirements					
Recommendation	Impact	Time	Effort	Benefits	Cost
asphalt and other materials					
• Clean up incorrect position data	BISD, HR	1-3 months	Low	Best Business Practice	L
• Provide a testing environment for the Finance payroll team outside of the production client	BISD	2-4 months	Medium	Best Business Practice	L
• Provide a new hire report for the benefits department	BISD, HR	2-4 months	Low	Improved usability of the system	L
5. Provide ongoing education and references for users.	All Departments, all end users	On-going	High	Critical success factor that allows clients to leverage the benefits of the SAP solution	M
6. Improve reporting capabilities to enable decision-making.	BISD, All stakeholders	6-12 months	High	Allows users to perform their job better	M to H
7. Apply best practices for upgrading to subsequent versions of SAP and/or adding functionality.	BISD, All stakeholders	> 9 months	High	Better integration of the SAP Public Sector solution with the Utility solution. Elimination of custom code. Upgrades need to be performed in order to continue to receive support from SAP	H
8. Provide for the accuracy and integrity of all master data by creating an ownership structure and rules.	All Stakeholders	On-going	Medium	Elimination of errors and rework	L
9. Implement more robust	BISD, Finance	3-6 months	Medium	Compliance with City and State Laws.	L

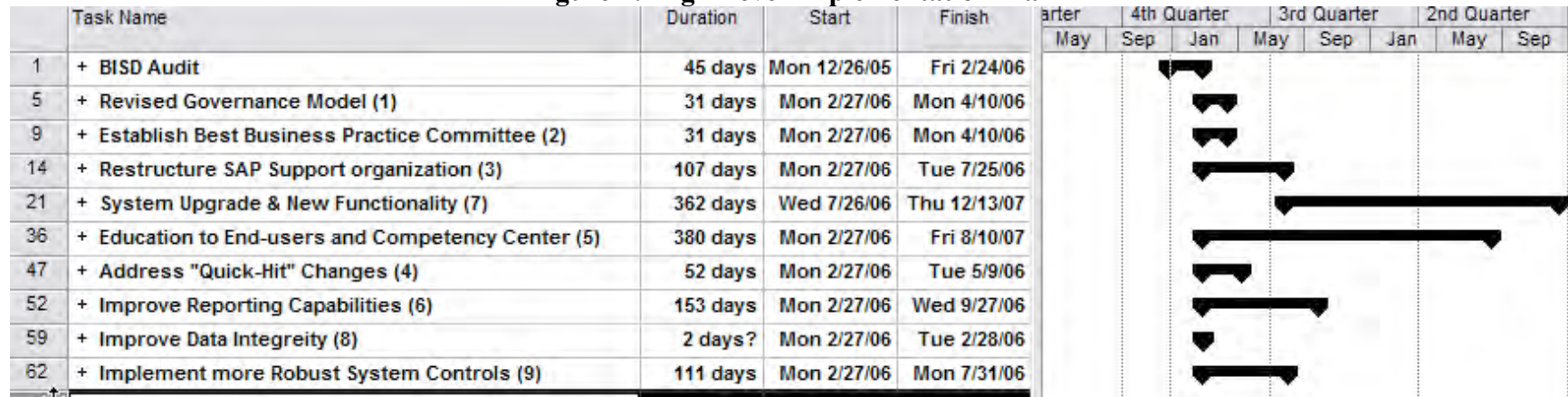




Table 3. Estimated Transition Requirements					
Recommendation	Impact	Time	Effort	Benefits	Cost
system controls.				Proper Financial controls	

Figure 4 is our proposed project timeline for implementing the above changes and enhancements. A more detailed project timeline is shown in Appendix C – Transition Plan Gantt Chart.

Figure 4: High Level Implementation Plan





Section 3: BISD Audit

There are four interactive components that must be fully integrated to provide effective end-user readiness and sustainment for Tacoma: governance, change management, communications and training. Tacoma currently has not developed and integrated these programs. Section 3 covers IBM's audit of the BISD Department and more broadly discusses how Tacoma can introduce and integrate these four programs to effectively sustain its SAP implementation.

The City asked IBM to evaluate the level of support for their SAP system. During the review we focused on the following areas:

- Section 3.1: Organization and Governance. This section describes IBM's evaluation of the leadership and organization structure of the BISD organization. We studied decision-making processes, roles and responsibilities relevant to the SAP implementation, and the management of new initiatives.
- Section 3.2: BISD Support. In this section we present our evaluation of the BISD support organization. Our findings and recommendations cover the scope of support, staffing levels, the effectiveness of the SAP support organization, the need for additional training, change management, technology and new tools for better support of the SAP implementation. In this section we will compare the City's current support structure to other public sector organizations and to standard metrics.
- Section 3.3: Training and Communications. This section defines training and communications efforts. It also presents IBM's recommendations regarding development of a comprehensive Training and Communications strategy and plan.

IBM used interviews and formal and informal meetings to analyze BISD's organizational structure and levels of support. These activities included all levels of the organization. We were able to leverage our expertise and knowledge of how other support organizations in the Public Sector manage their SAP systems. Much of what we are presenting is based on what has been successful at other public sector organizations such as: Erie County, in the State of New York; the State of Arkansas; and Clark County, Nevada. Information for comparisons with utilities who have implemented SAP was not available. The recommendations provided aim to improve the overall performance of the BISD SAP support organization.

Table 4 maps the recommendations to the Section(s) that contain further detail about them.



Table 4. Cross Reference Between Recommendations and Deliverable Sections

Recommendation	3.1 Organization and Governance	3.2 BISD Support	3.3 Training and Communications
1. Revise the governance model for ongoing support of the SAP implementation.	X		
2. Establish a Best Business Practice Committee that is responsible for issue resolution.	X		
3. Restructure the SAP support organization.		X	
4. Assign resources to certain quick-hit changes.		X	X
5. Provide ongoing education and references for users.			X
6. Improve reporting capabilities to enable decision-making.		X	
7. Apply best practices for upgrading to subsequent versions of SAP and/or adding functionality.		X	
8. Provide for the accuracy and integrity of all master data by creating an ownership structure and rules.			
9. Implement more robust system controls.			

Section 3.1: Organization and Governance

Governance over any large project is critical to the success of the initiative, but governance of ongoing SAP programs is even more critical; the “go-live” stage is just the beginning. The size and scope of SAP programs is often more extensive than that of other projects. SAP implementations result in tremendous change and involve changes not only in technology, but also business processes, both at “go-live” and on an ongoing basis. This level of change requires the organization to understand implications and be prepared to make tough decisions. Making those types of decisions requires executive sponsorship and governance at all levels of the organization.

The City of Tacoma did not fully anticipate the fundamental organizational and business process changes that would occur when the new system was implemented. Many of the business processes were implemented by applying old business practices to a new solution. Some business processes that were developed were sub-optimal and did not incorporate best business practices.

In this section, IBM will discuss how ongoing SAP implementations are typically managed, present our findings of the audit of the City leadership structure, and



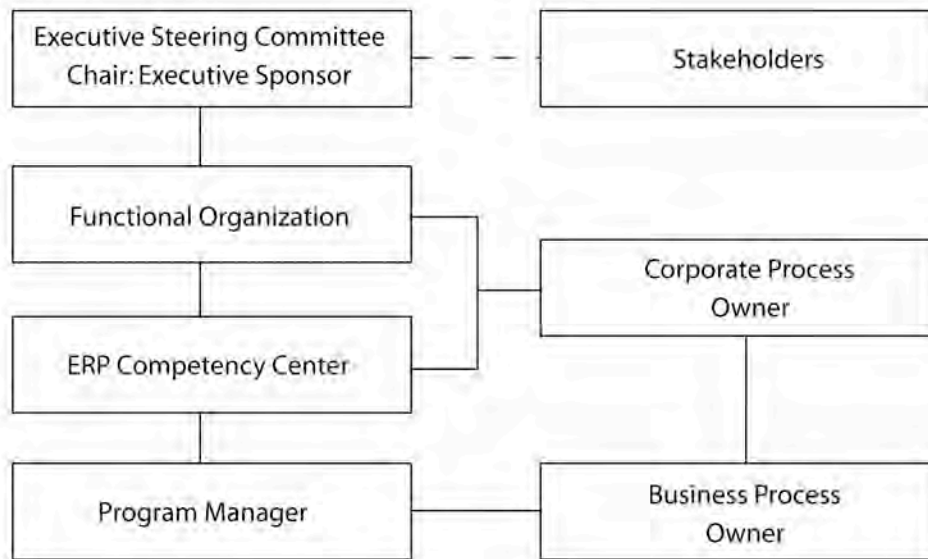


recommend a new governance structure that we believe will allow the city to more effectively manage the ongoing SAP implementation.

A Typical Governance Model

Figure 5 is intended to include all parts of an organization that should be involved in the governance of an SAP program.

Figure 5. Typical Governance Structure



In virtually all SAP implementations, the project is governed by an Executive Steering Committee led by the executive project sponsor. At the City of Tacoma, the City Manager and the head of Utilities lead the BISS Advisory Board; best practices show that leadership will be split with more than one sponsor. Therefore a single sponsor who is the head of the Executive Steering Committee is recommended. The Executive Steering Committee usually includes the CIO and City Manager as voting members. At the City of Tacoma, the committee that is responsible for overseeing the SAP implementation is the BISS Advisory Board. The typical roles and responsibilities of that group are as follows:

- Acting as the ultimate decision authority able to approve major decisions.
- Approving policies and procedures that enable efficient business operations throughout the organization.
- Establishing metrics and targets for tracking of business systems transformation progress.
- Establishing policies and approving the overall business mission area strategic plan. This includes the business enterprise architecture, transformation program baseline, and transition plans for system modernization implementations.





- Gaining approval for making investments and overseeing new initiatives. This includes establishing the appropriate procedures including charters, membership, and all certification actions and requirements.
- Meeting at least monthly because of the magnitude of decisions required.

Stakeholders who are not the primary customer of the SAP implementation must also have input, hence the dotted line relationship. Stakeholders need to ensure that any changes in policy or process are implemented in the SAP system. The system itself is not static and needs to adjust to changes in the way that the City is run. There needs to be a mechanism for getting these inputs to BISD; typically these would be in the form of changing requirements, rather than solutions. Formal processes should govern how inputs are evaluated and prioritized. Currently, stakeholders who are not the primary customers of the SAP implementation provide their input directly to BISD staff who evaluate and prioritize their needs among other work demands.

Next is the Functional Organization (in the case of Tacoma the various City departments) that will be the primary user of the business processes and software applications resulting from the SAP system. These organizations are the drivers of business change, not the technology organization within the enterprise.

The next level in a traditional SAP governance model is the SAP Competency Center. The Competency Center provides knowledge and expertise and is involved in all SAP projects within the organization. Areas of expertise typically include change management, enterprise architecture design, SAP product knowledge, and enterprise application integration. The Competency Center typically also plays an advisory role in supporting new projects and initiatives started by the various business units. The Competency Center, in Tacoma's case, would reside within BISD.

The Corporate Process Owner is the enterprise level decision-maker for their process. In the most successful governance models, the Corporate Process Owner(s) select Business Process Owners who are SMEs in the process to be full-time members of the Competency Center. The Business Process Owners' process expertise is best applied when they are collaborating within the Competency Center as opposed to decentralized in the Departments. This is particularly true when issues that arise cross two or more departments.

The last part of the traditional support model is the Program Manager, who represents the Project Teams. The Project Teams are comprised of those individuals dedicated to working on a specific activity like a system upgrade or a new initiative like implementing a new module (e.g., e-recruitment). Typically the Project Teams will include business process owners as well as technical experts. Decisions made by the Project Teams can escalate any process issues to the Corporate Process Owner. The Project Teams provide information, analysis, and recommendations to the other parts of the governance structure to assist in the decision-making process. Often these recommendations are formulated through collaboration with the Competency Center,



leveraging the Competency Center's experience with SAP in the organization and the Project Team's knowledge of the specific implementation.

The gap analyses identified the following findings the City should address. With each finding, we have provided one or more recommendations to move the City closer to its performance goals. The following describes the high-level findings and recommendations for improvement in the O&G area.

O&G Finding #1: The Advisory Board and BISD have been responding to day-to-day needs to keep City operations going. Now that the SAP system has been live for some time, the Advisory Board needs a more strategic, forward-looking role.

One of the biggest challenges in creating an effective governance structure is keeping it simple while still involving all key parts of the organization. For SAP governance and SAP programs to be successful, a fine balance must be struck between organizational involvement and decision making authority. Based on our meetings, discussions and interviews we believe that the City's SAP Advisory Board could be more effective at providing leadership and direction to the SAP implementations. Although the effectiveness of the City's governance structure is highly subjective and difficult to quantify, during the audit we received consistent feedback that:

- Decisions on prioritization of work by BISD was driven more by who complained the loudest instead of by an approved list of projects agreed upon by the BISD advisory board.
- Due to the perceived lack of responsiveness by BISD the various operational departments have become interested in making enhancements to the system without seeking approval and guidance from the BISD advisory board. This has potentially serious consequences given the integrated nature of the system.
- The advisory board was overly focused on managing the operational tactical activities of BISD instead of setting priorities and guiding the SAP process.
- There was no formal process for the various City departments to recommend and gain approval for improvements and enhancements to the system or to make changes to business practices or city policies.
- The effectiveness of the BISD advisory board was limited because of a lack of participation by committee members.
- More participation by Board members is needed along with more prompt decision making so that system improvements can be quickly realized.
- We found that a process for addressing cross department business process enhancements does not exist within the City of Tacoma. There is little coordination and communication between the various departments regarding the development and implementation of business processes.

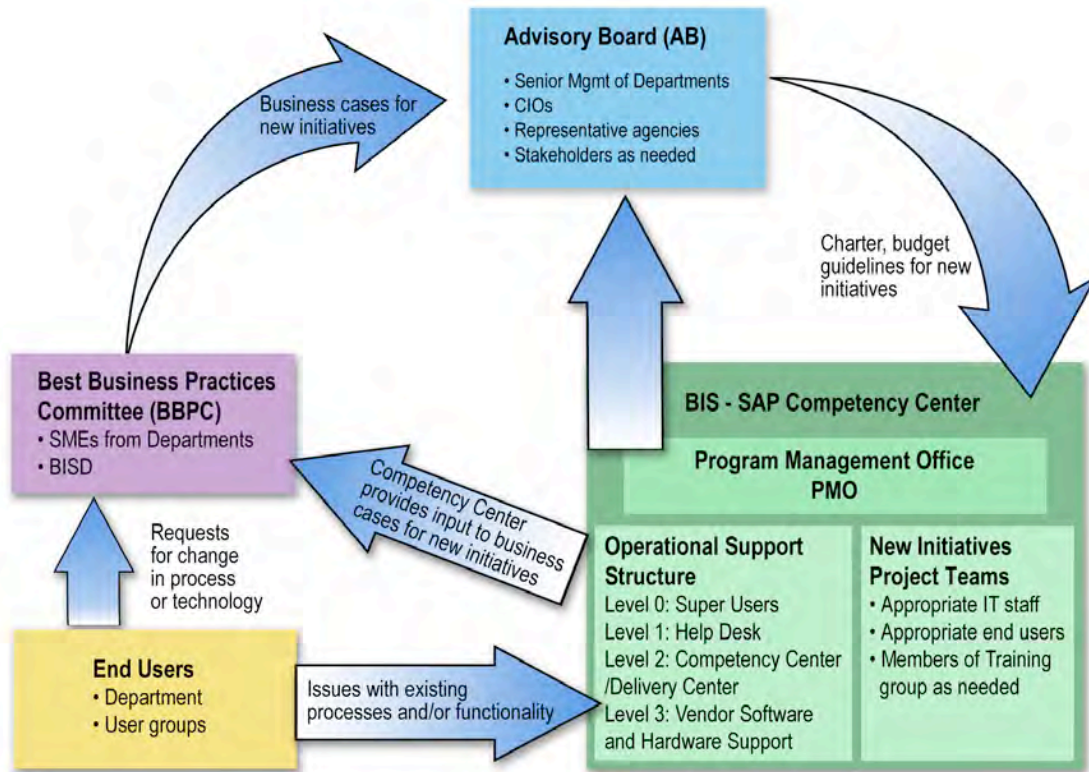
Recommendations:

1. Revise the governance model for ongoing support of the SAP implementation. It is IBM's view that creating an effective governance model is a necessary first step for making improvements in the operations of the City's SAP system. We recommend that the City of Tacoma implement an Organizational and Governance model as shown in



Figure 6. The Governance structure includes an Advisory Board, a Best Practices Committee, and an SAP Competency Center that is managed by BISD. This Governance model is similar in structure and organization to the traditional model described above. It is also consistent with Governance model structures that have been successfully implemented at other Public Sector organizations such as Erie County, New York, and Clark County, Nevada. In order for this model to work effectively it is important that the City establish clear communication channels so they can efficiently address business problems, implement new requirements and make quick decisions.

Figure 6. Recommended Governance Organizational Structure for Tacoma



Each organizational structure governance unit is described below.

<i>Advisory Board (AB)</i>	
Mission	IBM recommends that the AB focus more on the overall direction of the SAP solution and less on tactical day-to-day system issues. Its revised mission should include concentrating on strategic issues related to all aspects (people, processes, and technology) of the SAP solution. The AB should have the authority to review, approve, and assist in getting funding for new initiatives and major enhancements to the system.
Membership	The AB should be composed of senior business process and technical leadership from the City departments. The AB chair should be the City



<i>Advisory Board (AB)</i>	
	<p>Manager who would have the final authority regarding all open issues. AB membership should also include the BISD Chief Information Officer (CIO). AB members must be fully committed to the ongoing success of the system.</p>
Purpose	<p>The AB will receive recommendations regarding new initiatives from the Best Business Practice Committee (BBPC). It will decide whether and how the City will undertake each initiative based on how well it aligns with the City’s mission and strategies, how the initiative fits in with existing planned and approved projects, how critical the initiative is to meeting a business unit’s changing needs, as well as the timing and cost. The AB will oversee the completion of the following:</p> <ul style="list-style-type: none"> • the change control process, • the migration of change requests to the production environment, • the communication of changes to the end user community, and • the allocation of resources to the implementation of new initiatives based on their prioritization.
Implementation Considerations	<p>The AB’s charter will need to be reviewed and revised. The AB will need a formal decision-making process that is quick and efficient. Their meetings will need a formal agenda with tracking and monitoring of open action items. The board should continue to serve as the overall policy setting and program review body and should remove themselves from the day-to-day management of the BISD Competency Center. The AB should work with BISD and the City Departments to develop a RACI chart as described in O&G Finding #2 that clearly defines the roles and responsibilities for the SAP system. This needs to be communicated to all users of the SAP system. The AB should focus on establishing overall priorities and making decisions based on how they benefit the City as a whole.</p>

<i>Best Business Practices Committee (BBPC)</i>	
Mission	<p>The following description is also a separate recommendation: 2. Establish a Best Business Practice Committee that is responsible for issue resolution. IBM recommends that the City implement a Best Business Practice Committee. The goals of the committee are to:</p> <ul style="list-style-type: none"> • Recommend changes in business processes that are supported by the SAP system to: <ul style="list-style-type: none"> ○ streamline government and utilities operations, ○ improve operational efficiencies, ○ reduce costs to allow the City to become more responsive, and ○ provide better services to the citizens of Tacoma. • Determine how to implement specific initiatives that involve the SAP solution.





<i>Best Business Practices Committee (BBPC)</i>	
	<ul style="list-style-type: none"> Encourage and ensure proper participation from the key user/provider entities. Facilitate communication among the various City departments.
Membership	The BBPC would report to the AB and consist of mid-level subject matter experts (SMEs) from all disciplines within the organization, including BISD who is responsible for business processes within SAP specific functionality.
Purpose	<p>Users in the various departments will continue to identify new business processes and system enhancements. Individual users and user groups will be requesting changes. The BBPC will collect all of these requests and justify each one. This includes discussing, clarifying and refining each new initiative in order to build a business case for its acceptance. The BBPC will ensure that the request is feasible within City regulations and is consistent with the City’s goals and objectives. The BBPC will apply best practices to the policies, processes and technology under consideration. Then it will provide formal recommendations to the AB for approval and action. These recommendations may include components from any or all of the following areas: process, policy, technology, training, communications, and change management. The BBPC will include members of the BIS-SAP Competency Center to develop the business cases.</p> <p>The BBPC will also provide guidance for the following:</p> <ul style="list-style-type: none"> Ensuring that end user training will be conducted for end users to understand optimized or new processes; Ensuring that the needs of the individual Departments are being met.
Implementation Considerations	<p>The Departments should not have access to the SAP development or quality assurance (QA) system nor have the ability to migrate changes or develop / implement solutions. This is because of the integrated nature of the system and the potentially far-reaching ramifications of changes.</p> <p>The BBPC should meet on a regular basis and have a formal procedure for developing business cases and their respective presentations.</p>

<i>End Users</i>	
Mission	IBM recommends the creation of SAP User Groups (SUG) to ensure that common problems and issues are resolved in a timely manner. These groups will also provide suggestions for refining and optimizing processes.
Membership	The SUGs will consist of designated individuals from agencies/departments that are responsible for business processes within SAP specific functionality.
Purpose	Their focus is discussing business process/application issues, to





<i>End Users</i>	
	<p>collaborate in order to identify possible solutions, and to formulate recommendations for change to the BBPC. The SUGs' recommendations will be input to the BBPC's development of business cases for new initiatives.</p> <p>The SUG roles and responsibilities should be further defined in the individual user group procedures.</p>
Implementation Considerations	<p>The key to implementing SUGs is finding the go-to people within each department. Many times these people need to be rewarded for being part of the SUG. The members of these groups are often referred to as Power or Super users and should meet on a monthly basis to identify common problems or issues. Many times the key people in these groups are the most sought after; using employees who have more time on their hands is not the solution for successful SUG's.</p>

<i>BIS – SAP Competency Center</i>	
Mission	<p>In support of the SAP solution, IBM recommends that the City implement an Operational Support Structure within BISD that would support the current SAP solutions. IBM also recommends that New Initiative Project Teams be established to facilitate the completion of new initiatives approved by the AB. A Program Management Office (PMO) would manage the workload and dependencies among the Operational Support Structure efforts and New Initiatives.</p>
Membership	<p>The Competency Center should be staffed with people with previous experience working in the functional area(s) they represent. These individuals could have been part of the project team implementing SAP. They should be the individuals with the strongest understanding of business processes and deepest understanding of SAP design and configuration within the City. Ideally they should have additional SAP training. They should have skill sets such that their next level of competency in SAP would be Consultant. IBM finds that the City is following this best practice model.</p>
Purpose	<p>The Operational Support Structure must be positioned to assist in providing future business solutions in support of the City's strategic direction. To support the SAP solution all new functionality requirements and enhancement requests would be reviewed by the governance organization (BBPC and AB). Once approved, changes would then be implemented by the BISD New Initiatives Project Teams. The Operational Support Structure would address the day to day operational support of the business processes and the functional and technical components of SAP. The PMO would facilitate the efforts of the Operational Support Structure and New Initiative Project Teams' personnel and report on progress to the AB. This recommendation is described in more detail in Section 3.2.</p>





<i>BIS – SAP Competency Center</i>	
Implementation Considerations	The Competency Center personnel should reside in BISD. The City will need to appoint a CIO of the Competency Center – IBM recommends that this be the head of BISD. The City will need to evaluate staffing levels for each component of the Competency Center organization. They will also need to determine whether it will be appropriate to use a hosted support model. This entails decisions regarding which routine tasks can be offloaded to the support organization.

O&G Finding #2: The City has not clearly defined the strategy and process for users to gain approval for their requests for system changes.

The AB has been involved in managing tactical tasks rather than implementing an enterprise-wide strategy and approach for maintaining and changing the system. Departments have been bypassing the AB and going directly to BISD with requests for changes to the system. In addition, users have been requesting the ability to make changes and enhancements to the system outside of the BISD and AB structure.

Recommendations:

1. Revise the governance model for ongoing support of the SAP implementation.

There are no simple answers to how governance of an SAP system can or should be woven into an organization. A key element, however, is how the organization assigns and balances roles and responsibilities. One simple way to approach the issue is to look at each of the major types of decisions that executives and management will have to make. The next step is to determine what responsibility those with each different role should have in each decision.

A typical model used for this purpose is called RACI (pronounced ray-see), which stands for:

- Responsibility - People who are expected to actively participate in the activity and contribute to the best of their abilities.
- Accountability - The person who is ultimately responsible for the results.
- Consultation - People who either have a particular expertise they can contribute to specific decisions (i.e., their advice will be sought) or who must be consulted for some other reason before a final decision is made (e.g., finance is often in a consulting role for projects).
- Inform - People who are affected by the activity/decision and therefore need to be kept informed, but do not participate in the effort. (They are notified after the final decisions are made.)

Organizations face a number of key decisions as they complete a RACI analysis. One of them is what the balance of power will be between the central support team and the





departments. This and other RACI principles are outlined in Table 5, along with the risks if the principles are ignored.

Table 5. RACI Principles	
Design Principles	Risk If Violated
Program governance and resource allocation authority must be concentrated in one person/role - preferably a full-time champion.	If there is no single, executive-level person held accountable for overseeing Governance, constantly managing the project pipeline and making the required judgment calls when conflicts arise, an organization will end up with sub-optimization of effort, weak accountability for program results and a depleted project pipeline after the initial rush.
People with a lot of influence must participate in the Governance's direction-setting - project selection, resource contribution, and how to address organizational barriers.	It is critical to have full engagement of the organization in the overall Governance, beginning with key influencers and then cascading out from there. If that does not happen, if people not directly involved with the program are kept in the dark, the company will end up with compliance, not commitment, to the overall Governance program. Ultimately, the link between strategy and execution also will break down.
Accountability should be pushed down in the organization as low as possible.	If the organization's executives hold onto all or most of the accountability, employees will continue looking upward for approval/permission – resulting in gridlock and reinforcing the notion that nothing has truly changed. The organization also may end up with poor decisions because those at the top lack the local knowledge of the people who work with the processes every day.
RACI must be published publicly and discussed with all those affected.	Going through the exercise of developing a RACI chart will gain meaning only when the outcomes are acted upon. Otherwise, the organization will have wasted time on something that winds up being a non-implemented planning tool.

It is important to note that Table 5 offers general principles that work in most circumstances for most organizations. However, every organization is unique, and one must find a balance between sticking with the principles – which are known to work – and accommodating special circumstances in the particular organization. Accommodating those special circumstances is especially important if ignoring them will generate resistance to any change.

A chart like Table 6 can help in working through and summarizing RACI decisions. (Obviously, the specifics will likely vary for every organization because each may have different roles or divide up the decision tasks or activities differently.) This excerpt of a RACI table shows how it can clarify roles, or levels of participation. List only one "A" (accountability) for each activity. The division between "responsibility" and





"accountability" is often not clear, and most organizations discuss the issues at length to reach consensus.

Table 6. Sample RACI Method for Clarifying Governance Roles

Activity >	Deployment Ownership	Project Identification	Project Selection	Project Execution	Project Results	Team Support	Sustain Changes
Executive Team	A	R	A				
Champion	R	A	R			R	
City Managers		I			A	R	R
Process Owner		C		R	R	R	A
Support Team		C		R	R	A	
Team Leader/Green Belt				R	A		
Etc.							

Whether RACI or some other tool or model is used, the important thing is to not just leave the assignment of responsibilities to chance. Organizations can avoid innumerable conflicts by taking the time to make deliberate choices about who will be responsible for what.

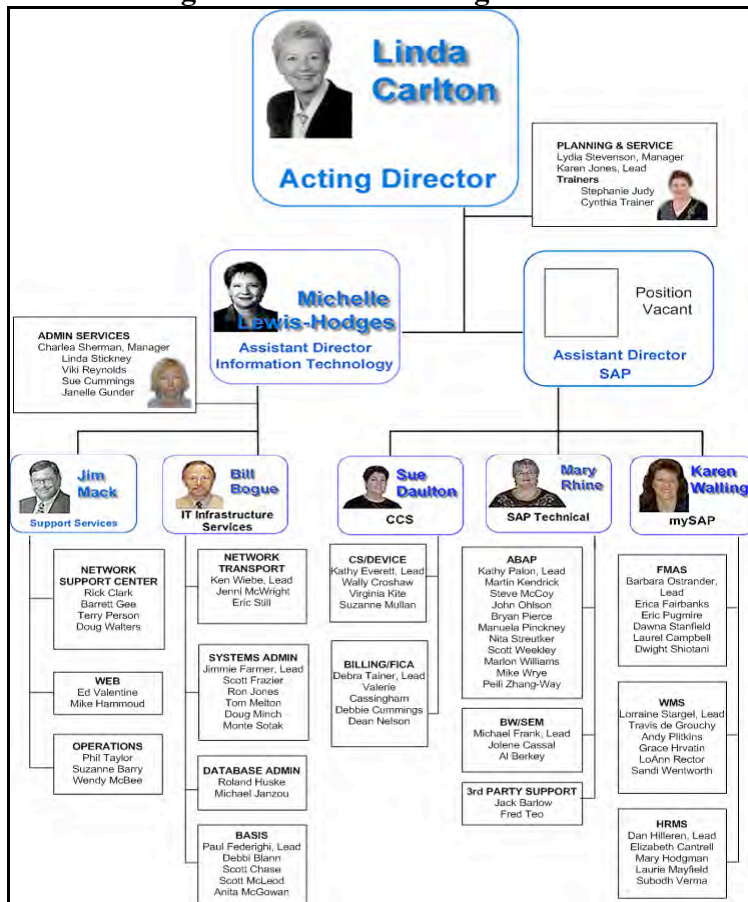




Section 3.2: BISD Support

BISD supports four SAP solution sets: Accounting, Logistics, Human Resources and Industry Solutions, which includes both Public Sector and Utilities functionality. The City of Tacoma underwent a unique implementation of SAP based on the integration of the two industry solution sets. Therefore, BISD’s challenge of managing this technology is unprecedented. BISD is currently responsible for maintaining the day-to-day operations of the SAP solution as well as for developing and implementing new processes and functionality to continue to optimize the solution for the City’s benefit. The organization is also responsible for support and management of the City’s SAP platform comprised of 22 servers. BISD’s responsibilities for non-SAP support include third-party MDSI software used for real time crew scheduling; network support and access; web services; departmental server and database support (such as the GIS server); data warehouse; other databases for departmental applications; batch operations; email servers and system support including spam protection; network security; desktop management systems; internet access; and the public safety radio system. The current BISD organization is depicted in Figure 7.

Figure 7. The BISD Organization





BISD has 90 approved positions with 49 resources that spend a considerable portion of their time supporting SAP systems (development, trouble-shooting, maintenance and training). This number excludes the third party support for MDSI since this is an interface system to SAP. Five of the 90 resources are management positions performing administrative functions related to SAP support. Tacoma's SAP support organization is similar in structure to other SAP support organizations. The functional side of the organization supports both the business and SAP functional configuration of SAP. Even with these 49 positions the BISD organization has difficulty addressing the backlog of changes that has built up over time. BISD has hundreds of items on its work plan, including SAP service packs and end user requests for new functionality or changes to the way they interact with the system. The level of effort required to fulfill these requests varies from days to months. BISD does not have the personnel to handle the current workload and does not foresee being able to address all of the current and new requests in the near future. In addition, BISD cannot develop a static prioritization of the items on the work plan because of business needs that may change on a daily basis. Further evaluation of work plan items is needed to ensure that the requested changes are still valid.

A Typical SAP Support Organization

Support center staffing levels within commercial and public sector clients depends on the following factors: platform, functional models, number of live end users supported, deployment stage of SAP, number of sites supported, number of modules supported, number of vendors involved, interfaces, servers, licenses to manage, and their global reach. A Gartner study, provided as part of this document in Appendix D, found that an average of 2 support FTEs is needed per 100 internal users of the system. This is a typical estimation based on the research performed; it does not imply that organizations need exactly 2 FTEs per 100 users to be successful. The City of Tacoma has 2,546 distinct users including Employee Self Service users. Therefore, using the Gartner Study estimation, the City support organization should be about 50 employees. The City has 49 positions that have primary responsibilities in support of the SAP system. The City's staffing level is consistent with other organizations of similar scope and complexity based on the Gartner comparison.

A more recent Gartner study (Prior, Derek and Bailey, Emma-Jayne; "Benchmark the Operational Cost of Your SAP Applications"; February 3, 2004.) proposes that size and complexity are two of the most important sets of factors that define SAP environments. A Gartner proprietary calculation of SAP complexity index applies weightings to 31 parameters to analyze typical operational costs for a live SAP system. This complexity model excludes new development efforts. The City may find benefit in exploring a more robust model.

Table 7 shows the results of an informal IBM survey of several diverse clients that the City can use as a basis for comparison. Notice the variation due to the special circumstances at each organization. IBM did not survey utility organizations that provide utility field or billing support services.



Table 7. SAP Support Organization Staffing

Client	Platform / Database	Modules	Users All Systems	Total FTEs	Support FTEs / 100 Users
Large State Government	AIX and Oracle	Support Core R/3, BW, EBPro, CRM, WorkPlace, ITS, Portal	est. 93,000 total; 1,200 concurrent	123	10
Consumer Products	Unix and RDBMS	R/3, BW, Workplace, CRM, APO	18,400 total	14	0.08
Large County Government	Unix and RDBMS	R/3 ECC 5.0 (FI/CO, Grants, Funds Mgmt, MM, Inventory) BW 3.5, Portal 6.0 WAS 6.40. Solutions Manager 3.2	1,600 total	81	5
Large County Government	Unix and RDBMS	R/3 ECC 5.0 (FI/CO, Grants, Funds Mgmt, MM, Inventory) BW 3.5, Portal 6.0 WAS 6.40 with ESS, Solutions Manager 3.2 XI 3.0, Mobile Infrastructure 2.5	1,700 total	73	4
Pharmaceutical Industry	Unix and RDBMS	AR, SD, BW	Not Recorded	32	NA
Oil/Gas	Not Recorded	SD, MM, PP, FI, AM, QM, SM, PM, CO, WM, BW	4,500 total	69	2
Manufacturing	Not Recorded	SD, LE, MM, PP, FI, PP-PI, WM, AM, CO, APO	4,700 total	157	3
Pharmaceutical	Not Recorded	SD, MM, PP, FI, AM	3,000 total	44	2
Chemical	Not Recorded	SD, MM, PP, FI/CO, AM, WM W/barcoding, HR, BW, CRM, Navigator	2,200 total	87	4
Insurance	Not Recorded	FI, PA, CO, AA	600 total	120	20





Table 7. SAP Support Organization Staffing					
Client	Platform / Database	Modules	Users All Systems	Total FTEs	Support FTEs / 100 Users
Medical Device	Unix and RDBMS	ECC 5.0, CRM 4.0, GTS 3.0, BW 3.5, SCM/APO 4.1, Sol Man 3.2, XI 3.0, EP 6.0	5,000 total	64	1
Medical University	Unix and RDBMS	FI/MM/GM/PS/AM/FM/CO	2,000 total	71.5	4
DoD Agency	Unix and RDBMS	FM/FI/CO/PS/SD/M/HR	17,000 total	58	0.3

SAP best practice is to retain a centralized support organization with knowledge of business processes and SAP functionality/capabilities. Having the business process team members working in the integrated support structure facilitates the integrated nature of SAP across all SAP components. Two organizations that have centralized business process resources within one organization are the Commonwealth of Pennsylvania and Erie County, in the state of New York. The best practice is to maintain this SAP integration knowledge because the central support organization should:

- Retain deep understanding of the integration of business processes across functional areas or silos.
- Perform impact analysis on the production SAP solution for recommended enhancements and new functionality.
- Perform quality assurance across functional areas to assure integration.
- Act as business advisors to the overall City’s Organization and Governance Organization on SAP capabilities, impact and work effort to deploy enhancements or new SAP functionality.

There are several options for where the SAP support organization may reside: 1) within a business area, 2) within the IT organization, or 3) decentralized in the Departments. Best practices recommend against decentralization because of the need for organized control over the organization’s activities. The support organization needs a clear focus with its own agenda and appropriate skill sets for achieving its objectives. Furthermore, because the SAP system is integrated, the support organization must be able to look broadly across Departments to analyze how changes will impact each one. Based on our observations, IBM recommends that the support organization stay in BISD.

BISD Support Finding #1: End users have not found BISD to be responsive to and effective at meeting their needs.

During the audit, IBM concluded that the organizational structure of BISD and BISD’s information technology (IT) processes fit with best practices for an SAP support organization. However, BISD has been unable to fully and effectively support the system





and, at the same time, support requests from users for system enhancements. BISD staff should continue to keep up with their skills, knowledge and experience within SAP in order to provide the best answers to customers' issues.

As in any implementation, there are areas of improvement for BISD to provide additional support to the end users. The decentralized Department end users have a different perspective of the roles and responsibilities of BISD than that held internally in BISD. From the users' perspective, BISD is taking too long to address their development requests because it can take from 3-6 months. However, BISD has to analyze the costs and impacts before taking on changes and new initiatives. The number of requests that must be studied and the changing priorities of the Advisory Board increases the time it takes for BISD to be responsive. With the current staffing and model of operations, BISD does not have adequate resources to maintain day-to-day support operations as well as manage the requests for changes and new initiatives.

The City currently uses an online ticket system called OTRS to capture end user requests. When responding to these requirements, the City needs an approach to changing business processes and technology, maintaining business continuity while changes are implemented.

Due to the state of the current SAP marketplace, the City will likely find it difficult to locate and maintain qualified individuals in-house to work in the Competency Center. The demand for SAP consultants is increasing because of widespread implementations. Rates for SAP consultants are increasing because it is difficult to find qualified individuals, even with former SAP clients becoming consultants. The expected cost for maintaining qualified SAP City employees will likely become more difficult.

Recommendations:

3. Restructure the SAP support organization. IBM recommends that the City develop an Operational Support Structure with three tiers that would be responsible for:

- providing customer service to end users,
- managing and supporting the current SAP solutions,
- supporting the SAP technical and hardware environment, and
- assessing and supporting future City business process changes and SAP functionality.

Table 8 defines and depicts the recommended responsibilities of each level of the Operational Support Structure.



Table 8. The City of Tacoma’s Three Tiered Operational Support Structure		
Tier	City of Tacoma Functional Departments	Third Party Organization(s)
0	Super Users	
1		
2		
3		

Before executing this structure, the City should perform a detailed review of their core competencies and decide if they want to stay in the SAP functional configuration and data center business (Basis). The Operational Support Structure model identifies the key areas that can be co-sourced between the City and a third-party delivery and hosting vendor. The City would need to review each level of support for its strategic importance and determine which functions would be handled internally versus by an external Delivery Center. IBM recommends that BISD transition from the current role of system support to one of providing SAP subject matter expertise. Employees who are currently working in the support organization should focus on providing guidance, coaching, and functional SAP knowledge to the other City Departments. This will allow them to leverage the SAP system and become more effective in performing their responsibilities.

IBM recommends the following changes that would significantly affect the staffing of the BISD organization:

- The City should outsource the Data Center hardware operations and technical activities (Operating Systems, Database and Basis) to a Third Party to relieve the City from these daily tactical activities. The City would receive 24x7 coverage by outsourcing the Data Center operations and would reduce the current staffing in Support Services and IT Infrastructure Services within BISD. This would improve the service provided to the end users. Both the Support Services and IT Infrastructure Services would only need to be staffed with the Network and Web resources which may also be reduced depending on the City’s decision on core competencies.
- The City should identify and establish a relationship with an external SAP Delivery Center that will manage the SAP application and configuration on a daily basis. The Delivery Center would address the backlog of Service Packs and End User requirements. This would allow the BISD organization to focus on business processes and new City initiatives. This model of operations would also enable the City to identify and implement continuous improvements. IBM anticipates that handling the routine functional and technical support externally will provide better customer service at a lower cost to the City. Moving the application management to a Delivery Center will impact the CCS, SAP





Technical and mySAP staffing. It is absolutely critical that BISD retain expert resources who know how the City business processes work and how SAP has been configured to support the City's business. A deep review of the skills in these areas is critical to making the decision on the Delivery Center.

In this arrangement, the City will only need to retain business process owners who are Subject Matter Experts (SMEs) in the City's business processes and SAP functionality/capabilities and who are responsible for Quality Assurance. The City would no longer maintain skill sets in the technical aspects of SAP. Instead, IBM recommends that the City become an SAP certified customer Competency Center. The SMEs would benefit from additional SAP training to help with understanding other areas/functionalities and how they integrate within SAP.

To implement the Three Tiered Operational Support Structure the City should consider:

- Establishing a formal Help Desk in BISD to handle day to day issues such as end user problem calls. It should also manage minor break fix issues and other minor issues like password resets.
- Purchasing Help Desk software (e.g., Remedy, HEAT) to replace the existing OTRS system to track problem tickets from end users.
- Building a knowledge base of problems and resolutions.
- Identifying business process and SAP Subject Matter Experts who also are responsible for Quality Assurance. These individuals would be part of the BISD SAP Competency Center. BISD should retain expert resources who know how the business processes work and how SAP has been configured to support the business. The Quality Assurance role is critical so that the City retains responsibility for new functionality testing and regression testing of existing functionality and business processes prior to transporting into production.
- Continuing to manage the SAP Competency Center through BISD.
- Identifying and selecting a third-party organization for the Delivery Center role as application, technical and hardware support. The Delivery Center should have the capability to provide the City with 24x7 coverage.
- Developing and implementing processes and procedures between each Support Tier to ensure proper communications. The City can leverage the Remedy tool for this purpose. Effective communication methods are vital to efficiently addressing business problems and new requirements.
- Establishing specific processes to integrate with the Delivery Center for applications, technical and hardware support.
- Establishing a Service Management Framework that includes Service Level Agreements between each of the Support Tiers.
- Reviewing existing Service Level Agreements, whether internal between departments or external with hardware vendors, maintained by BISD.
- Establishing a Program Management Office (PMO) focused on managing the delivery of the features and deliverables, including coordinating any consultants, program communications, reporting, procedural activity, and contractual activity.



The PMO would support the project teams for any new initiatives and provide status updates on these projects to the Advisory Board.

The BISD SAP Competency Center needs to be reorganized so that it becomes more effective and responsive to its customers. It is our view that end users need to receive more detailed training in SAP software and in the new business practices. IBM recommends that the City hire a CIO with previous ERP implementation experience (preferably SAP). The new CIO should be given authority to manage the day-to-day operation of BISD including all decisions regarding managing resources, task lists, and the budget.

IBM recommends that the Competency Center remain part of the IT organization. Customer service will be negatively affected by any breakup of the organization and reassignment to departments. The general organizational structure is appropriate to support the Competency Center's functions as they currently exist. However, upon moving to a modified model that includes outsourcing, the organizational structure will need to change.

Establishing the Delivery Center and removing the tactical work load effort from BISD provides an excellent employee retention strategy because it allows BISD to focus on core business processes and SAP integration across departments and SAP modules.

Appendix E provides additional descriptions of the various Operational Support Structure tiers.

6. Improve reporting capabilities to enable decision-making. IBM recommends expanding the City's use of Business Warehouse reporting info cubes to address the current backlog. Allowing users to create custom reports themselves on an ad-hoc basis will remove this workload from BISD personnel. Users will require training to make this transfer of responsibility work.

BISD Support Finding #2: The City's SAP system has been live for almost two years and is executing its mission critical business processes. The SAP solution is operational, fundamentally sound, and stable.

The system will provide the City with long term benefits and scalability. The City is on track to meeting its requirements through the SAP system.

Recommendations:

7. Apply best practices for upgrading to subsequent versions of SAP and/or adding functionality. We believe the City's SAP system is the right solution for the City of Tacoma and that the City should:

- Continue to invest in the SAP solution. In order to achieve the full potential of the system, the City will need to continue to invest an appropriate amount of resources (people and funding) into the system. With the proper investment, the



system will allow the City to be more responsive to its citizens by providing better analytical information and new technology.

- Maximize its investment in the SAP solution. All future City IT initiatives should first look at the capabilities of the SAP product. Third party products, alternative solutions or a best of breed option should only be considered if there is a compelling business case.
- Continue to limit source code modifications and unnecessary system enhancements.

Custom development/enhancements should be the last resort in attempting to close perceived gaps in the system. The process to provide functionality over and above the current footprint should be:

- To the fullest extent, optimize standard SAP functionality through configuration.
- Standardize processes to be in tune with SAP's best practice.
- Control master data maintenance to ensure its integrity.
- Train the users to use standard tools at their disposal within the enterprise.
- Check that SAP has no satisfactory solutions in the pipeline and available through hotpacks.
- Design and develop an enhancement.

BISD Support Finding #3: The City is currently running SAP version 4.7 SP1, which will go out of mainstream support in March 2009.

The hardware infrastructure that supports the system will need to be upgraded to support future releases of the software. There are two functional areas of particular concern: The bi-annual budget process and integration of SAP's utilities solution with its SAP public sector solution.

Recommendations:

7. Apply best practices for upgrading to subsequent versions of SAP and/or adding functionality. IBM recommends the following concerning the SAP system:

- Stabilize the system based on the current release of SAP.
- Continue keeping the system current by applying the necessary support packages. The City should work with SAP management to provide a timely resolution for issues that occur when service packs are applied.
- Upgrade the system to SAP's newer software version, my SAP ERP. Because there is a perceived high level of customization that has been made to the system, the City should request SAP to perform an upgrade assessment.
- The City should not consider the system upgrade until early 2007. The system upgrade will likely require elimination of a number of customizations, reconfiguration of parts of the system, and a re-sizing of the hardware. Until the other issues identified in this audit are reasonably addressed, IBM believes a system upgrade would prevent the City from making significant progress in the areas of business process improvements, training, and user acceptance.



- BISD should focus on improving the reporting capabilities of the system prior to the upgrade. This should be done by providing training in the SAP reporting tools to City employees. In addition, the City should consider expanding the use of the Business Warehouse system.
- Consider using SAP's standard budget preparation functionality. This, however, can not occur until the upgrade to mySAP ERP has been completed.
- Consider limiting implementation of any additional SAP modules (such as: enterprise buyer, grants management, e-recruitment, SAP portal) prior to upgrading to my SAP ERP.

IBM recommends waiting to upgrade the system until several other changes are made:

- Stabilize the governance structure;
- Reorganize the Competency Center;
- Address some quick-hits; and
- Resolve the major reporting problems.

With these changes in place, the upgrade will be more successful.

BISD Support Finding #4: The process for maintaining transports across the three tier system landscape does not follow best practices.

Recommendations:

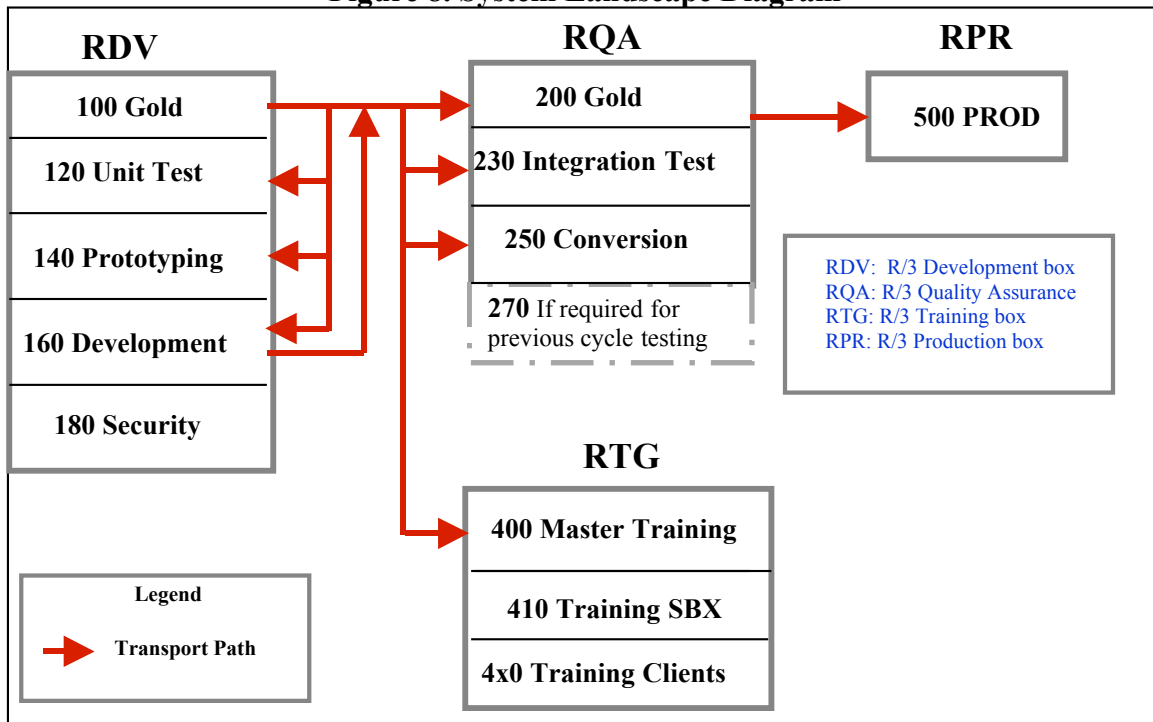
7. Apply best practices for upgrading to subsequent versions of SAP and/or adding functionality. IBM recommends implementing a promote to production approach from development phase through to the productive system. BISD's primary approach to SAP environment management is to use the facilities provided by SAP's Transport Management System (TMS) tool to ensure effective change management. The environment outlined in Figure 8 provides a framework for the use of TMS. In this environment, developers will use the described guidelines to change the system. The Data Dictionary/Database Administrator(s) will make any necessary modifications to the SAP Data Dictionary, the TMS Administrator(s) will execute and verify the movement of objects and configuration data, and the Basis Team will provide overall support.

The guiding principle for the entire approach to environment management is flexibility. A governance model should be adopted for various tasks like transport releases, client refreshes, client copy, etc., through the life of the project.

To enable the current team to perform their extensive analysis, design, construction and testing without interrupting normal business operations, IBM recommends that Tacoma have separate development, quality assurance, and training systems for exclusive use by BISD staff. Figure 8 is the system landscape diagram depicting the various clients and the flow of transports from one client (or system) to the other.



Figure 8. System Landscape Diagram



Our recommended approach on Promote to Production is based on SAP recommended practices and IBM Ascendant methodology along with the industry best practices. As shown in the above picture, all of the original functional configuration and the ABAP development work will originate in the Development environment. Based on the successful prototyping and unit testing all the objects will be moved in to the quality assurance environment. In the quality assurance environment, the actual integration testing of the object will be conducted. Any last minute problems in an integrated environment are captured here on the QA environment. Once an object is signed off by BISD and user acceptance testing in the QA environment has been accepted, the object will be successfully promoted in to the production environment. If required, there is an option of using the production-fix environment before the production environment. All the training related activities will be carried on the training environment.

We recommend the following:

- Stabilize the system based on the current release of SAP.
- Continue keeping the system current by applying the necessary support packages. The City should work with SAP management to provide a timely resolution for issues that occur when service packs are applied.
- Upgrade the system to SAP's newer software version, my SAP ERP. Although the City should begin planning for the upgrade, because there is a perceived high level of customization that has been made to the system, the City should request SAP to perform an upgrade assessment.



- Do not consider the system upgrade until early 2007. The system upgrade will likely require elimination of a number of customizations, reconfiguration of parts of the system, and a re-sizing of the hardware. Until the other issues identified in this audit are reasonably addressed, we believe that a system upgrade would prevent the City from making significant progress in the areas of business process improvements, training, and user acceptance.
- The City should limit implementing any additional SAP modules (e.g. Enterprise buyer, Grants Management, e-Recruitment, SAP portal) prior to upgrading to my SAP ERP. Users should understand and be able to more fully use the functionality of the system before adding on to it.
- Use Solution Manager or a similar tool to track and monitor changes. Solution Manager will track trouble tickets to SAP and serves the purposes of performance tuning the system and monitoring technical performance.

IBM recommends that the City implement a promote to production approach until the Delivery Center responsibilities are transferred to a third party. At this point, the promote to production process will no longer be the City's responsibility.

BISD Support Finding #5: A formal testing environment does not currently exist in BISD.

BISD does not have an automated testing tool with consistent testing processes. It could benefit from applying a testing tool with scripts that, once developed, may be rerun automatically as macros. This would help formalize testing and provide tools for upgrades, regression testing or hotpak testing.

Recommendations:

4. Assign resources to certain quick-hit changes. IBM identified the following quick-hits during the BISD Audit:

- We recommend that the City purchase the Mercury testing tool set (estimated at \$94K for about 30 people) to immediately address:
 - the establishment of formal testing processes and procedures
 - improved control and management of data loads
 - the establishment of regression testing scripts to ensure approved changes are thoroughly tested prior to being implemented in the "live" system
 - facilitating the plans and testing for SAP upgrades
 - supporting the testing and integration of support packs and infopacks
 - facilitating consistent and thorough end user testing
- We recommend that the City establish a Formal Quality Assurance Group. This group would be responsible for assuring that requested business functionality is thoroughly integrated and tested; that procedures and processes are updated; that end users are ready for the new functionality; and that production readiness has been accomplished.



Section 3.3: Training and Communications

The SAP system implemented by the City of Tacoma has the potential to drive significant improvements in operational efficiencies and enhance the City's ability to provide improved and more cost effective services to its constituents. The City's old legacy systems were highly customized, inflexible, and required limited training. The City's SAP system is an extremely robust and flexible "off-the-self" product, but at the same time requires a greater amount of training. In particular, integration of business processes necessitates better training and cooperation between departments.

This section discusses the differences between training and communications, to include when and for whom it is appropriate to use each. IBM has provided specific recommendations in each of these areas based on the understood needs from the executive visioning and functional workshops. We also apply best practices within our recommended training and communications program.

The goal of formal training activities is to provide the end-user with the structured, step-by-step tasks for completing a given business process using the SAP functionality. Several considerations are important to developing the most effective courses:

- Deliver the course as close to the time when the users will apply their knowledge as possible, so that the users retain the knowledge.
- Focus the course length and time of day, month, and year the course is delivered on the job requirements of the audience. For example, managers may only be able to spend a half-day one day a week on a course. Certain end-users may be able to spend three full days in one week on a course, as long as it does not coincide with a deadline.
- Focus the content of the course on the particular functionality used by the audience. For example, managers may only need to know how to develop reports, not perform data-entry.
- Present the course using the training vehicle that speaks best to the capability level of the audience and their level of experience with automation. For example, new employees may need a basics course that allows them to work with the system hands-on and that takes them through the functions on each screen.
- Include a business process overview so that the audience understands where they fit into the process(es).

The goal of communication efforts is to provide appropriate information regarding the SAP solution to a wide range of end-users and their organizations directly and simply. The information may be broad and over-riding or detailed and directed at a small group of specific user activities.

Training and communications form a continuum in providing support to the end-user community. They both provide the end-user organizations information that will enable them to better use the SAP functionality and related processes. Both are intended to



instruct and both must be geared towards structured audience levels, each of which requires different types of messages and different vehicles for delivering the messages. At the edges it is hard to tell what is “communications” and what is “training”.

The gap analyses identified the following findings the City should address. With each finding, we have provided one or more recommendations to move the City closer to its performance goals. The following describes the high-level findings and recommendations for improvement in the Training and Communications (T&C) areas.

T&C Finding #1: The City lacks a comprehensive, coordinated communications program.

When organizations decide to make a major change, it is imperative that each employee receives that message in a timely fashion. Preferably, the message should precede the process of change as far in advance as possible to provide employees with a level of understanding; this is vital to the success of the change process. It is critical that messages that relate to change in organizations be delivered all the way through the ranks from the very top to the lowest position in the organization. Proactive steps of communicating impending change reduce the number of rumors and negative reactions from employees.

A great deal of communication does happen within the City of Tacoma. However, the Tacoma SAP organization does not have a formal communications program in place. This requires a top to bottom approach that defines the audiences, their needs, the messages to be delivered, and the means to deliver the messages. All of this must be done within a single, coherent approach since correct information must be conveyed at different times to different audiences. There are many communication vehicles emanating from BISD and elsewhere that carry SAP information. These include:

- newsletters like Newline, Take 5, Power Talk and Utilities, which are used to provide SAP related items via mass e-mails to all employees (not just SAP users),
- spot e-mails to certain functional teams,
- web-sites,
- department head meetings, and
- user group meetings.

This disjointed approach results in challenges because communications are not:

- targeted to the proper groups, or
- focused with the right messages, or
- carrying sufficient information.

For example, there is a lack of uniform User Groups across the City General Government and Utilities. A Finance User Group seems to meet regularly and request presentations and information from BISD. However, the Purchasing User Group has not requested communicative inputs from BISD. In some key functional areas, User Groups have not been formed.



Recommendations:

5. Provide ongoing education and references for users.

IBM recommends that the City should develop and implement a formal Training and Communications program based on the best practices discussed above. We recommend the following:

- There is no need to stop the current communications. However, there is a need to reevaluate how they are used. Are the correct audiences targeted? Are the appropriate messages conveyed?
- Specific messages have to be targeted to each audience level and that audience must have a willingness to hear the message and act upon it accordingly.
- Government Leaders need to hear what is going on in the near- to mid-range future.
- Department leads should be told what the members of their departments need to do to assist and/or participate. They should be responsible for making sure the message is delivered throughout their departments.
- Organizationally, communications and training should be managed by the same group. The current Training Group could assume this role.
- The communications program should be focused on delivering, coordinating and facilitating. All communications do not have to be centralized nor approved by a centralized party. However, they all need to be coordinated so that the various groups are aware of all outgoing communications.

There are three Key Elements of a best practice Training and Communications program: the targeted audience, the key messages for each audience and the communications vehicles for delivering the messages. IBM recommends the City address these as presented in Appendix F – Detailed Training and Communications Plan.

T&C Finding #2: Some end users do not have sufficient tools and knowledge to perform their jobs using the SAP system.

During the workshops, IBM found that end users did not have a full understanding of the SAP system. They expressed a high level of frustration. In some cases the end users were unable to complete required tasks in a timely manner or were forced to create work-arounds to complete their work. This is occurring because:

- there is a lack of SAP training, and
- the end users do not understand the new business processes.

The City did not anticipate the new skill sets required to implement and support the new system. City employees are not fully trained in the new system and business processes. They have become frustrated with the new system; many employees are unable to complete routine tasks in an efficient manner. However, a large percentage of City employees believe that the new system has great potential.

Attendance at SAP training and open workshops is mediocre to poor. Classes are regularly cancelled due to no enrollments.



Recommendations:

5. Provide ongoing education and references for users. IBM recommends that the City develop an End User Training Strategy. The objective of this strategy is to establish and communicate the processes, tools, and project team members' responsibilities required to effectively manage end users' business processes. The Strategy will cover training on existing functionality as well as changes between the existing functionality and new functionality. The City is currently using a tool called InfoPak to update training documentation. IBM recommends continued and expanded use of InfoPak as training offerings increase. In general, training needs to be offered on a continuing basis and the training organization needs to be able to support the ongoing and new training requirements.

End User Training on new functionality should meet the following requirements:

- Designed to support updated business processes and application skills.
- Integrated with other change management efforts associated with the introduction of new functionality.
- Updated as changes are promoted to production. These changes must be communicated to the end user community in a timely fashion so errors are not introduced into the system.
- Validated by a functional consultant or a business process owner who helped with the validation of the functional testing, or creation of the new business process. In most cases, the trainers usually sit with the functional team members and are involved from the beginning which promotes a seamless integration process.
- Delivered by instructors who demonstrate an extensive knowledge of business processes and system configuration.
- Incorporating an in-depth understanding of organizational roles and responsibilities.
- Employing multiple instructional technologies and techniques based on end user population demographics and geographic distribution.
- Focused on business processes using implementation specific scenarios and data for hands-on exercises aimed at reinforcing instruction, new business processes and transactions.
- Provided in an environment accurately reflecting Production specific configuration. Employing training clients separate from the current testing environment.
- Continue version control maintenance of training materials using InfoPak.
- Instituting end user groups and ensuring their integration with processes and procedures.

IBM recommends that Tacoma's SAP training group's role and responsibilities be broadened to include the integrated development and leadership in the four components on "end-user readiness and sustainment". The training group should be provided equal status to the functional and technical teams in all SAP program matters along with the



functional and technical groups—the lack of such equality is most often the key reason for ERP system sustainment failure.

IBM recommends that the City perform another comprehensive employee skill assessment similar to that conducted prior to going live with the system. This will help in the construction of the End User Training Strategy and clarify where SAP product training and/or business process training is needed.

IBM recommends that the End User Training Strategy consider the following:

- Continue the best practice of delivering role-based courses.
- Reevaluate the use and maintenance of training data.
- Keep the training environment synchronized with the production environment.
- Mandate that appropriate training be an absolute pre-requisite to enabling an end user access to certain areas of the system.
- New or revised functionality should not be rolled-out until the relevant training documentation is prepared and/or updated to reflect the true functionality.
- Continue to implement and expand the use of Self-Help tools using the InfoPak tool.
- Leverage training tools such as InfoPak and WebEx in addition to onsite training courses. These are easily supported and can be accessed by employees on an as needed basis. They minimize the time employees are away from their daily responsibilities.
- Help employees learn the SAP reporting tools.

Each of these considerations is further discussed in Appendix G – End User Training Strategy Considerations.

4. Assign resources to certain quick-hit changes. IBM recommends that the City:

- Add a status or percentage complete column on the work plan to communicate to the End Users the status of each requirement
- Provide additional SAP training to BISSD staff
- BISSD staff should receive formal training on Solutions Manager and begin utilizing Solutions Manager.

T&C Finding #3: End users lack a forum for sharing information.

No regular communication exists for end users to share information, processes and ideas to assist in quick fixes, tips and user assistance.

Recommendations:

5. Provide ongoing education and references for users. IBM recommends that the City create a user group to meet no less than monthly to share information, processes, and ideas that can assist users in performing their jobs. This meeting should be no longer than one hour, but no less than 30 minutes. The topics should include current issues and



issues logged on the OTRS database. BISD should participate in these sessions to provide input on the current status of issues.

T&C Finding #4: Users have not maximized their use of SAP's query reporting tool.

The Query report writing tool in SAP is a very efficient tool for pulling data queries and can provide accurate same time information. However, this reporting tool is not being used by most end users due to the lack of understanding or comfort level.

Recommendations:

5. Provide ongoing education and references for users. IBM recommends providing a greater understanding of the query tool for users with explanations of fields. This enhanced training will provide the end user with detailed information which in turn can be shared with the customer.



Section 4: High Level Process Gap Analysis

IBM conducted gap analysis workshops with City departmental representatives or end users considered to be subject matter experts (SMEs) in their respective areas. The IBM consultants selected to facilitate these 3-4 hour meetings are highly trained in SAP for each subject area. The findings documented in this report are based on the information gathered from these SMEs; some may require further investigation and validation to explore their inherent complexities and determine the root cause(s) of the issues. The consultants' approach included a review of the currently installed SAP software and system design/configuration. We determined whether the system adequately supports the City's business processes. Based on the various inputs, the IBM team analyzed the gaps and developed recommendations. Because the City requested an audit and not an in-depth business process reengineering, the IBM consultants documented the most significant issues and gaps and their resulting recommendations. The purpose of the analysis was to identify and develop potential solutions for deficiencies and omissions in the SAP system. The recommendations aim to improve the operational performance of the system.

A gap was defined as a 'disconnect' between the functioning of the system or the business process and the smooth conduct of end users' job responsibilities. As a gap was mentioned, an attempt was made to further define what it was, and then have the gap documented on a form supplied for that purpose.

Table 9 maps the recommendations to the Section(s) that contain further detail about them.

Table 9. Cross Reference Between Recommendations and Deliverable Sections					
Recommendation	4.1 Industry Solutions	4.2 Logistics	4.3 Accounting	4.4 Integrated Modules	4.5 Human Resources
1. Revise the governance model for ongoing support of the SAP implementation.					
2. Establish a Best Business Practice Committee that is responsible for issue resolution.	X	X	X	X	X
3. Restructure the SAP support organization.		X			
4. Assign resources to certain quick-hit changes.	X	X			X
5. Provide ongoing education and references for users.	X	X			
6. Improve reporting capabilities to enable	X	X	X	X	X





decision-making.					
7. Apply best practices for upgrading to subsequent versions of SAP and/or adding functionality.	X		X		X
8. Provide for the accuracy and integrity of all master data by creating an ownership structure and rules.	X	X			
9. Implement more robust system controls.	X	X	X		

Section 4.1: Industry Solutions

The Industry Solutions functional area includes the following modules:

- Industry Solutions – Utilities/Customer Care Systems (IS-U/CCS) and
- Industry Solutions – Public Sector (IS-PS).

The City of Tacoma has implemented IS-U/CCS, version 4.71, for processing multiple utility services in a single application. While the IS-U/CCS system was heavily customized with over 700 customizations, this represents less customization as compared to other utilities around the world. In addition to the customizations to meet business needs, SAP developed and built code in Tacoma’s system during the ramp-up of the 4.7 product for the purpose of integrating the Funds Management and the CCS areas. SAP does not include Tacoma’s custom code in mainstream maintenance and testing of support packs.

The City manages the entire SAP system with support from the SAP Online Service System. The City has a more recent version of CCS than other utilities; many other utilities around the world typically still have 4.6 or 4.7 installed. Some of the issues Tacoma has encountered are results of the current release of SAP which has not been as widely installed as earlier versions.

The City’s system includes the FERC module. The City attempted to implement this module, but for various technical reasons, including conflicts with Public Sector industry solutions, could not implement it. FERC reporting is done through work around ad-hoc reports. Tacoma is working with SAP to remedy this situation. However, a true fix may not be possible with the current SAP version.

The IS-PS functionality delivers Funds Management and Grants Management, since these are unique to public sector organizations. Although these are accounting functions, they are discussed here because of their uniqueness to the public sector industry. There was significant customization to integrate the IS-PS module with the IS-U/CCS module. Therefore the City will have to maintain these customizations as SAP releases newer versions of either module until the integration of these modules is standard. At that point





the City will need to perform regression testing and implement some new business processes once these customizations can be replaced by standard SAP functionality.

The gap analyses identified the following findings the City should address. With each finding, we have provided one or more recommendations to move the City closer to its performance goals. The following describes the high-level findings and recommendations for improvement in the Industry Solutions area.

Industry Solutions Finding #1: Duplication within the master data set results from the lack of a standard way of entering and locating existing data.

The City has developed a consistent format for master data: one contract account per service address. The contract account is re-used if (1) an additional service is added to a location, or (2) a new contract for a different time period is established at the location. The latter occurs in instances such as owner allocation. Having a consistent master data format makes it easier to locate customers' accounts and to perform such activities as dunning/invoicing.

- During the workshops, employees raised an issue regarding duplication of business partner data. When a user tries to locate a customer account, he or she is permitted to select from various identifier types, such as Social Security Number (SSN) and Federal Tax ID. However, the City has not assigned priority to identifier types based on the ability to quickly and accurately retrieve the account. Therefore an existing account may not be retrieved and the user mistakenly creates a duplicate account. The SAP system does not have a built-in control to verify if the business partner or a service address already exists. This is an issue that occurs at other locations that have implemented SAP and results in duplication of Business Master Data. For example, the Fairfax County Water Authority and Entergy both have some duplication of master data resulting from these types of practices.
- Furthermore, when the SAP system checks for an existing account, it requires that the user enters service address data to exactly match the master data. However, SAP does not store street name identifiers (i.e. ST, RD, DR) in a separate field, which leads to users entering these in different ways (STREET vs. ST). The duplication check also does not account for spelling errors. SAP relies on the postal regional structure to be maintained in order for the duplication check to work – that only the house number is to be entered in free form and the street should be selected from the drop-down. The inability to find the exact address match results in the user creating another account, which becomes a duplicate.

Recommendations:

8. Provide for the accuracy and integrity of all master data by creating an ownership structure and rules.

- IBM recommends that the City continue to limit the number of users who have access to generate master data, such as engineering and field. The creation of service or premise addresses should continue to be a function performed by a limited number of users. We also recommend that a guideline be developed and



- communicated that specifies the format in which data should be entered. This will allow new services to be generated accurately and according to postal/regional standards. Customers may still request service at a new location that has not been entered into SAP by the new services or engineering groups. The new mailing addresses generated by the front office process should be reviewed periodically to ensure the accuracy of these addresses.
- IBM recommends that the City determine which are the most effective primary identifiers and communicate its policy for starting a search with these identifiers. A list of secondary identifiers, such as driver's license number, should also be supplied to users so that they may exhaust all available searches before creating a new account. The City should consider adjusting the SAP screens so that the primary identifiers are prominent on the search pages. This will increase users' consistency in retrieving existing customer data and reduce the duplication of business master data.

Industry Solutions Finding #2: The SAP system changed the way users perform the Move-In/Move-Out processes. This has raised some questions as to whether the system or the process needs to change to perform these functions correctly.

In general, the Move-In process flow was established as cohesively as possible with minimal enhancement to SAP. The objective of the flow is to minimize the number of steps (clicks) that must be entered by an end user to lower the handle time to execute this set-up. However, the process to establish a Move-In currently takes approximately 5 to 8 minutes, in comparison with 2 minutes in the legacy system.

For Move-Ins (as well as Move-In/Outs) requiring Force-Outs due to an active contract at a location, the process flow brings up a pop-up to select Installations. If the user only selects partial Installation services from the list, then the Move-out only occurs for those installations selected and the remaining services stay active at the original customer's account. If these remaining services are not meant to stay active, the original customer will then need to request a Move-Out, which they often will not know until they receive an invoice. SAP either makes the assumption that a new customer will adopt all services or that the original customer will call to confirm they have a move-out for all of their services.

Recommendations:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. IBM recommends that the City streamline the Move-In, Move-Out, Move-Out Reversal and Transfer processes. There are steps that could be performed in the background or removed completely. However, before making this type of change, IBM recommends that the City evaluate the policy, process and technical ramifications. For example, certain issues may be resolved in future updates of SAP, or they may require the City to revise business processes and communicate this to staff. Therefore, our recommendation is to create a Best Business Practice Committee (further described in Section 3.1). The BBPC would receive input for changes, determine what is involved in



making the change, and present the case to the Advisory Board for approval of the change. Changes could be either to the SAP functionality, to the business unit's process, or both. The functional workshops identified several changes that the BBPC can immediately consider once it is in place:

- Within the Move-In process, users have been requested to cancel through the program offerings screen because the selection creates too many workflow inbox items. The receiving end of this workflow does not have time to complete the form requests. IBM recommends revisiting this aspect of the process to determine how to remove this work-around and ensure the necessary workflow components are in place.
- The move-in letters have been programmed with incorrect addresses so they must be typed manually as a work-around. Also, pamphlets must be manually sent separately to each customer. This process can be automated without workflow intervention if the forms are corrected. The complexity for modifying the forms to include the correct address is minimal since it requires an update to a basic application form.
- The City can consider removing another step from the Move-In flow: the decision as to whether an existing Contract Account should be used. Contract Accounts are only re-used for owner allocation scenarios and if an additional service is added to the account at a later time.
- If future releases of SAP will not resolve the issue with the force-outs, the City can update the process flow of Move-In to check whether or not the original customer still has any active contracts. If they do, the system can move them out in the background. However, this would probably require another click in the process to verify that the move-out should actually occur.

Industry Solutions Finding #3: Errors are possible in the Reversal Move-Out process because the user must remember to accurately revise the entire account.

The reversal move-out process is necessary for end users because it provides a means to cancel a move-out that was created in error. The downside of having a simple front office process in place is the expectation falls on the user to make additional corrections to the account to set it back to an active status in other areas.

Recommendation:

4. Assign resources to certain quick-hit changes. IBM's recommendation is to utilize a Business Add-In for the front office process to do a background update to the contract account tied to the Move-Out Document and set the values back to the original state automatically.



Industry Solutions Finding #4: The Owner Allocation process available in SAP has been well received by users, who are now able to identify continuous improvement opportunities.

The Owner Allocation process flow was established with an enhancement to SAP using Mass Owner Allocation. This is an improvement compared to most utilities that utilize standard SAP.

Users in this area have learned to deselect the “Create Event” checkbox in the Property object to hold the workflow process if they need it.

This area was an improvement compared to other utilities’ systems. The objective of the flow is not always to minimize the number of steps (clicks) that must be entered by an end user due to it primarily being Back-office functionality.

Recommendation:

5. Provide ongoing education and references for users. Employees would benefit from a user’s guide that documents helpful information learned through the use of the system. Deselecting the “Create Event” checkbox is an example of the useful tips that can be shared through a user’s guide. For it to be effective, frequent updates would be required and a process would need to be in place to clearly communicate these updates to employees. Encouraging employees to share tips like these and giving them a forum to do so paves the way for continuous improvement through improving their effectiveness.

Industry Solutions Finding #5: The process of creating contacts is subject to errors and requires more time than necessary due to users’ confusion.

Contacts are widely used at the City of Tacoma for maintaining customer communication and action logs. The contacts may be reported and evaluated for future front office efficiency studies. However, too many contact activities may result in duplication of activity codes and confusion when entering contacts.

Recommendation:

9. Implement more robust system controls. Controls must be put in place to limit the amount of activities that are added to the drop-down list. The more activities that are configured, the more difficult it is for end users to locate the activity they need in order to process the contract.

Industry Solutions Finding #6: Cash Management is error-prone and requires manual processing.

The City of Tacoma utilizes standard SAP processing and transactions for handling payments and collection activities. This process is manual and prone to errors.

Recommendation:



9. Implement more robust system controls. The controls for cash management and credit reporting should be increased to improve these processes. They should allow for more security and reporting. The use of Field Display Characteristics in SAP is recommended for limiting access to outgoing payment methods and other fields on the Contract Account and Contract screens that should be managed by only specific resources with proper security. Transaction-specific field display attributes may be set by transaction variants, which simplify transactions by:

- Setting field values
- Hiding fields
- Specifying whether fields are ready for input (or display only)
- Hiding screens

This enhancement was determined to be of medium complexity due to both configuration and ABAP development. The field display characteristics do not affect future upgrades and releases because the configuration is used to point to a custom function module rather than modifying an existing ABAP program.

Industry Solutions Finding #7: Customers' needs are not being met for two reasons: (1) policies do not exist to address specific requirements, and (2) reporting capabilities do not exist to allow users to support certain customers' requests.

Credit and collection activities are operating as designed. They track late payment and historical credit activity for all Contract Accounts.

During the Credit/Dunning workshops, the users did not have adequate tools for reporting and monitoring credit activity. This has led to modifying the credit limits and thresholds in order to optimize the collections process. Additional reporting capabilities would allow the City to manage their collections process more efficiently and attempt to process the highest and latest delinquent amounts first.

Users requested additional reporting of Contract Account balances and unpaid charges. This information should be used going forward when determining security deposit requirements, increased dunning activity, and payment plans.

Recommendations:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. The following two changes would need to be evaluated by the BBPC as to how and when they may be implemented:

- The BBPC should consider whether the City can offer more flexible payment plans so that the customer can pay back previous balances in installments. The City would need to determine if installment plans may be customized for specific customers or if only standard installment plans are to be allowed. Installment plans may be created for customers using transaction FPR1 by selecting a standard installment plan or entering terms from scratch and customizing the



- installment amount and payment frequency until the balance is paid off. The complexity of implementing this change is minimal because no additional configuration is needed. The standard SAP transaction for payment plans is flexible enough to allow for specific terms for each customer rather than using pre-configured payment plan conditions.
- The settlement rules should be managed to allow for increased controls and issue resolution. Payments on final billed Contract Account should be blocked. This would reduce the number of accounts with credit balances and allow the payment to be posted to the correct account, or returned to the customer rather than posting to the final billed account requiring either a transfer to the correct account or payment reversal. This functionality may be implemented by developing a process to set the payment posting block reason on the contract account for all final billed contract accounts with a zero balance. Given the complexity for implementing this change, it would take at least two weeks to develop the batch program to update the accounts based on the conditions stated above.

6. Improve reporting capabilities to enable decision-making.

- IBM recommends that City staff increase the use of the standard CCS Open Items Report FPO4 for identifying Contract Accounts with open balances. This report may be configured based on any master data element such as account class or dunning groups and levels. The Pre-selection transaction FPSELP allows for the open item selection to be executed based on different summary levels and Business Partner/Contract Account criteria. The Pre-selection may also be executed during nightly processing when system response is not impacted by on-line access. This allows the credit reporting activities to be performed directly in CCS rather than exporting to the Business Warehouse (BW) for immediate access. The level of effort for this change is approximately 48 hours to configure the transaction variants and pre-selection including testing. No development or user exits are immediately needed to implement this change. As more complex open item reporting is identified, business add-ins may be required to select specific information. If this is the case, the BBPC would evaluate the implementation of these add-ins.
- The account balance display is not sufficient for users who require more simplification and customized views of the open items and historical balances of a Business Partner/Contract Account. Account balances may be displayed at summary levels rather than detailed open items for each invoice. The invoices may be drilled down to obtain details of each charge. Training and other communications should ensure that users are aware of these capabilities and trained in applying them.

Industry Solutions Finding #8: Within the Device and Equipment areas are opportunities to make processes more effective and efficient using information in the SAP system.



The City of Tacoma manages devices and meter readings through standard SAP business processes and configuration. During the Device/Equipment management workshops the major gaps and issues identified involved the processing of metered consumption and validations. Close monitoring of turn-on/turn-off notifications is also needed for immediate response to customer inquiries.

Meter read processing is accurately handling consumption related information from customers as a result of a recent process improvement program in this area.

Recommendations:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. The BBPC should evaluate what would be required to improve the following processes:

- Improved validation of consumption information is needed to eliminate the number of invoice reversals and adjustments being performed. Validation begins with accurate estimated consumption and high/low values. This estimation should be investigated further as actual consumption history is built up in SAP. Estimation should include as many previous periods of the same time of year as possible. The complexity for implementing this change is minimal since standard configuration allows the number of prior periods to be increased. The testing of this change should be the focus of the implementation provided a test region is available to validate the estimation is more accurate than the current estimation algorithm.
- Zero use validation should be used more appropriately by eliminating it for irrigation customers and increasing its use for regular customers. A configuration issue was identified with the number of days allowed for zero use. The existing configuration is set at 60 to 90 days. This configuration should be changed to 7 to 14 days to allow for zero use only during the window when a periodic read is close to a move-in/out reading. The complexity of implementing this change is low although additional testing is necessary to ensure the zero use validation accuracy is improved during mass meter read processing.
- Additional device status codes and device replacement reasons have been requested by end users. These should be investigated to determine if the use will slow any on-line processes and benefits can be met by adding the additional codes. The complexity of implementing this change is minimal. However, the City should thoroughly evaluate the impact to the manual and automated processing of the new codes.

Industry Solutions Finding #9: Modifications to the notification process would enable agents to have more data for decision-making.

The notification process includes standard use of notifications and work management. The notification tab on the front office allows for easy navigation and generation of new notifications.



Recommendations:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. The BBPC should evaluate the need for identifiers for disconnection notifications that highlight the accounts with pending disconnections. This may be accomplished by adding an ICON to the customer environment informing all agents that the installation is pending a disconnection. The complexity of this change is moderate since configuration and development are necessary. The ICON is configured to display based on a custom function module. A combination of configuration and development would be required; this would not affect future upgrades or releases since the functional module is assigned through configuration rather than modifying an existing ABAP program.

6. Improve reporting capabilities to enable decision-making. IBM recommends that end users use standard SAP notification list editing more frequently when determining the priority of notifications and the amount of work outstanding. Additional end user training in this area may be necessary.

Industry Solutions Finding #10: Invoice reversals and adjustments are required to correct errors in accounts.

The City of Tacoma has a high degree of accuracy with invoice calculation and presentment. The rate configuration uses standard SAP billing master data and minimal custom variants. The invoice generation process has seen fewer issues than other utilities implementing CCS. During the workshops it was determined that the major issues within the billing/invoicing processes involved invoice reversals and adjustments. These processes exist in SAP to provide the ability to correct infrequent problems with the invoices or consumption information.

The City has a high number of reversals and adjustments compared to other utilities that are not due to the rate calculations or invoice process, but due to the up front validations. Once these gaps are addressed in the meter readings and processing area, the number of reversals and adjustments will reduce significantly.

Recommendation:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. The BBPC should consider including a 'Corrected Bill' identifier on the customer's invoice rather than sending a new invoice out prior to the next periodic invoice. This identifier or message will ensure the customer realizes their invoice has been corrected and will proceed normally with the next periodic invoice. This is a moderate complexity change requiring both configuration and ABAP or SAPSCRIPT development changes. The modifications are not complex but the testing must be thorough enough to ensure bill printing and performance are not negatively impacted by the new bill print message.



Industry Solutions Finding #11: The complexity of collective accounts presents a policy debate regarding how they should be corrected.

Collective invoicing has been impacted the most by the frequent reversals and adjustments performed at the City. While reversals and adjustments will also be a part of the invoice process, the correction process with collective accounts is complex. Currently all detail invoices must be reversed when reversing a single collective detail. This should not be the case when reversing collective detail accounts. Invoices may be reversed for a single collective detail resulting in the corrected charge being included with the next periodic invoice for the collective master. There was some confusion whether there is a business need to reverse the master and send an updated invoice to the master account for a single corrected detail account.

Recommendations:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. The BBPC needs to evaluate the standard practice for correcting collective accounts and put a new process in place. The evaluation of the collective reversal process is complex and should be accomplished through a separate project rather than a minor enhancement or work plan item. Additional investigation is needed to determine if the City of Tacoma is processing collective invoices efficiently using standard SAP functionality.

Industry Solutions Finding #12: Maintaining the system and its dependencies through upgrades is difficult due to the customizations within CCS.

Tacoma experiences difficulties in maintaining support packs in the CCS area because of customizations made to meet Tacoma's business needs. Additionally, Tacoma expects difficulties implementing future support packs in other areas of the SAP software and possibly third party software because of dependencies. It is not possible for the City to maintain the latest support pack releases without severely affecting BIRD and business unit resources.

Recommendation:

7. Apply best practices for upgrading to subsequent versions of SAP and/or adding functionality. SAP frequently adds additional functionality with future releases which would allow the City to implement the new functionality rather than maintaining their custom code already in place. This will require replacing the customization with the new functionality provided by SAP. The amount of time saved to adopt standard SAP configuration and functionality as opposed to maintaining custom code and not upgrading is significant.

Industry Solutions Finding #13: There is a known system shortcoming in the integration between the Treasury module and the Funds Management module. (also Accounting Finding #7)



The Fund object is not fully integrated with the Treasury module. This is a gap in the SAP functionality. This aspect is currently not designed within SAP and therefore would require custom code. Most of the Public Sector accounts that need this have created customization for it.

Recommendation:

7. Apply best practices for upgrading to subsequent versions of SAP and/or adding functionality. The workarounds currently in place are the only known fixes for this gap. IBM recommends that the City only develop this customization if it is a critical business need since SAP does not plan to enhance this functionality in the near future.

Industry Solutions Finding #14: Users in the FERC area are frustrated due to the business requirement of biennial budgeting and SAP's lack of a standard budget configuration that meets biennial budgeting.

The City has adopted a biennial budgeting process. The FERC business process deficiencies are centered on reporting and the inherent system gap for biennial reporting.

Recommendations:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. IBM recommends that the BBPC investigate using standard budget functionality delivered by SEM-BPS instead of what is currently in use. IBM is not recommending that the City change their budget cycle from biennial to annual.

6. Improve reporting capabilities to enable decision-making. IBM recommends the expanded use of Business Warehouse functionality to include the SEM-BPS modules. Since the SAP Public Sector budget solution is delivered through BW-SEM-BPS, Business Warehouse functionality would allow for greater reporting flexibility which will satisfy the varied reporting needs across business units. Users can design their own reports which can reduce the need for work-around reports developed outside of the SAP system.

Industry Solutions Finding #15: Grants management processes are not fully supported by the existing functionality.

There is a lack of reporting functionality that can be used for overall grants management. Currently, the Project Systems (PS) functionality is being used for Grants business processing. This design strategy was adopted because full Grants module functionality was not available during the initial implementation.

Recommendations:

7. Apply best practices for upgrading to subsequent versions of SAP and/or adding functionality. IBM recommends implementing ERP 2005 in order to capitalize on the improved Grants Management functionality. Based on the discussions during the workshop, the improved grants management functionality will fit the current reporting



and management system gaps. However, because this change would involve a system upgrade, IBM recommends that the City hold an additional detailed business requirement workshop to completely identify the business requirements.

Industry Solutions Finding #16: The City can use the Funds Management module to achieve more financial benefits.

The City uses the FM (Funds Management Module) on a very limited basis. FM is the core functionality for public sector budgeting, which includes Budget Preparation and Budget Control; the latter is managed by FM. The City is not getting the full financial benefits and integration they could achieve by using FM to a greater extent.

Recommendations:

7. Apply best practices for upgrading to subsequent versions of SAP and/or adding functionality. IBM recommends that FM be the application to manage your budget execution process, taking full advantage of the controls of availability checking. The City should try to expand its use of FM for better financial control and visibility. This can be accomplished upon upgrading the system because of integration issues between the Public Sector and Utility solutions.

2. Establish a Best Business Practice Committee that is responsible for issue resolution. IBM also recommends that full functional use of the FM module be implemented with a defined level of availability control. The BBPC would need to evaluate the factors involved with this change. Both active and passive availability control options are available. FM plans and controls the flow of revenues and expenditures, provides guidance through planning and creating budgets, and uses active availability control to monitor management appropriation. Funds management capabilities simplify the design of budget plans using special planning techniques and make it possible to differentiate provisional budget plans. The solution supports centralized and decentralized planning and budget execution of funds. Within budget execution, the solution provides the data for passive availability control in the form of budget monitoring lists. Active availability control displays budget limits, taking cover eligibility into account when posting documents. Several statuses can be defined by using tolerances for active availability control.

6. Improve reporting capabilities to enable decision-making. IBM recommends that the City use more of the Funds Management (FM) reporting functionality. The standard FM reports give the user the ability to see the status of their funds.



Section 4.2: Logistics

The Logistics functional area includes the following modules:

- Plant Maintenance (PM), to include Work Management Systems (WMS), Service Management and Fleet Management;
- Materials Management (MM);
- Sales & Distribution (SD);
- Purchasing (MM), or Procurement and Contracting; and
- Project Systems (PS).

The majority of the functionality addressed during the WMS audit resides in the PM module. Order Management, Notifications, Preventive Maintenance, Crew Scheduling, Permitting and Mobile Solutions are the heart of PM or are very closely integrated with it. In addition, the Fleet Management functionality is encompassed by PM. A large portion of the PM functionality available was implemented to some degree, but some significant pieces that can provide additional benefits were not enabled, e.g., Bills of Materials and Task Lists. There did not appear to be an exceptional degree of customization.

The Materials Management module also is very tightly integrated with PM and the potential benefits available can only be fully realized by developing business processes that recognize this fact.

Compared with SAP implementations of similar complexity, user errors and rework are higher than expected for an implementation at this stage of maturity. For example, users have problems with selecting the correct work order type and then have to recover from the transactions posted erroneously. Also materials are ordered and received before the work order is released. This is counter to SAP's design and best practices. These are systemic problems caused by lack of training, inability to follow procedures, or lack of knowledge of the correct procedure. Many issues and gaps could be negated if strict compliance with SAP's logical processes and functionality was enforced.

Many users have not adapted to the business procedures. Users displayed frustration with the system because it demands accurate input and sequenced processing of transactions. Business practices used by employees prior to SAP can no longer be used, specifically processes like acquiring materials and attempting to receive them before creating the initiating documents (i.e., work orders, requisitions). These practices did not follow existing City policies. SAP is configured to provide the structure to support long-standing City policies, processes and procedures.

The Material Management/Purchasing workshop that was held with the process owners indicated a high level of frustration with users having to perform manual processes in order to get their jobs done and being unable to supply accurate management information and reports. Most were in agreement that they have moved past the point of just



knowing how to do the basics, but now need the ability to utilize the SAP system to improve efficiencies and use it as a management tool.

Reporting is a major concern since the perception is that information is not readily available in SAP. The reporting issues led to discussions on SAP Business Warehouse and at a high level what it can offer. Basic reporting is available within the current structure of the system using the Logistics Information System. Customers need to be made aware of what is available to them. Reporting and list editing are covered in SAP training classes.

The current system has functionality and resources available within the SAP standard structure that will help improve efficiency in the areas of time management, duplication of effort and management reporting. Through Business Process Changes, additional configuration, expanding the use of standardized master data and SAP Business Workflow, user frustration can be reduced by increased optimization of the system. User frustration is the result of having to conform to City procedures configured within SAP.

IBM held a day-long meeting on August 16, 2005, with representatives from a cross section of City of Tacoma departments who primarily use the SAP Project Systems module in the conduct of their business activities. A high level project management business process flow was used to direct the discussion along a sequence of steps usually followed in the development and execution of projects. The discussion was lively and enthusiastic, as individuals appeared committed to the system and to making it more effective and efficient.

The gap analyses identified the following findings the City should address. With each finding, we have provided one or more recommendations to move the City closer to its performance goals. The following describes the high-level findings and recommendations for improvement in the Logistics area.

Logistics Finding #1: Staff in the Plant Maintenance area are not using the full functionality that WMS provides.

SAP-PM functionality already implemented is not fully utilized. Users are not aware of some of the options available to them or how to use standard tools and techniques to simplify transactions. There appears to be a lack of deep SAP-PM configuration experience in a support role.

- For example there was no knowledge of how to build and utilize the classification system to its fullest. This lack of functionality limits the user's ability to create their own reports and do their own queries.
- Also there was no knowledge of Bills of Material and their role in simplifying business processes. This is standard functionality and not taking advantage of it means missing out on significant potential benefits.



- Fuel consumption data for fleet objects is not available on the equipment master record. This is standard functionality that should be enabled with the correct configuration.
- The current material classification system in place at the City of Tacoma does not have a naming convention or hierarchy which limits its usefulness.

Recommendations:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. The following two changes would need to be evaluated by the BBPC as to how and when they may be implemented:

- Create a Classification hierarchy for Equipment and Materials with class groups, characteristic groups, and keywords, etc. It is extremely powerful and useful functionality when designed properly.
- Users would like to enter odometer readings in a mileage box on the WO header tab. This would then populate the measurement document in the background. Configuration is currently available with the latest releases for reference object O150 on notifications and work orders to accomplish this objective. The City could implement limited functionality that may satisfy this requirement now. Increased functionality to cover this gap will undoubtedly come with new releases. This is an instance where it would not make sense to develop a custom enhancement since SAP is in the process of providing one. It would be more costly and require maintenance on an ongoing basis. In this example the PM configurator has to explore the implementation guide (IMG) in some detail to find the settings that enable this function.

5. Provide ongoing education and references for users. PM resources (both BISD staff PM resources and business unit resources) should be able to understand what is available to them in the standard SAP functionality. This will help them determine whether the warehouse management system has the potential to add more value. IBM does not see the need to add resources in this area; the existing resources need additional training and experience.

IBM recommends that the City work to ensure users understand basic functionality and can function effectively in their positions. This will require a concerted training initiative. Some specific training techniques are included in Section 3.3: Training and Communication.

Another approach is to deploy experienced users to mentor less accomplished end users (at their work stations) in the system for brief periods. Mentors can teach “tips and tricks” such as:

- Set up selection variants in ‘list edit’ transactions
 - Set up layout variants for search results, select the default fields to be included.
- Teach users to be self-sufficient, creating their own reports in many cases



- Put user-specific master data selections in a personal list (instead of seeing thousands of values that are not relevant for a particular user)
- Set PID's (personal default values) for values that should behave as constants for a particular user
- Use Windows commands (Ctrl Y, Ctrl C, Ctrl V) to copy and paste data rather than spend time re-keying it
- Set user-specific favorites (transactions, etc.) and eliminate the screen clutter.
- Teach users how to print hardcopies
- Teach users how to download data to spreadsheets and files
- Teach the process of copying notifications and work orders if they are the wrong type and closing out the bad documents. This will help speed up the process of recovering from errors.
- Make sure that 'keys' show in dropdown lists, to assist with selection.

The information above is currently provided in existing course materials. IBM also recommends that users be informed of and held accountable for attending available courses that are relevant to their work.

Simple configuration changes can also improve a user's proficiency at completing their tasks. IBM recommends the City consider custom transactions for certain high-volume users, and configure the start transaction so that the system starts them in the correct screen with appropriate pre-populated values. Notifications could be started with the correct type already selected to prevent some of the errors caused during the creation process.

These are low cost measures with high impact in terms of expanding the knowledge base and increasing efficiency.

Logistics Finding #2: Master data is not controlled and the City does not have one owner to manage the 'create' and 'change' process. As a result, the data lacks integrity.

SAP derives its benefits from utilizing standard data (equipment, functional locations, materials, vendors, etc) many times over and saving users from having to re-key the same data multiple times. Every new entry has the potential for errors to arise and be impediments to the smooth flow of multiple sequenced transactions that follow. Various users may have interpreted the data and the data standards differently; therefore, there are inconsistencies in the way the data is entered. In this type of environment, an extensive communication network must be in place to ensure data is entered correctly and completely, as well as a robust auditing program to check for errors. When the master data is entered one time and is correct, everyone referencing that data can ensure that the system will process it the way that it is designed to do.

Data quality has a multiplier effect; i.e.,



- When it is erroneous or incomplete it can cause the process to break down or create wrong postings, frustration and substantial rework to correct the errors throughout the system.
- When it is accurate and complete it can greatly simplify the users' interaction with the system and ensure the minimum amount of effort to complete a business transaction.

Efforts put into managing master data pay off many times over for the life of the system.

Recommendations:

8. Provide for the accuracy and integrity of all master data by creating an ownership structure and rules. IBM recommends that accountability for the integrity of the master data be assigned to one person. This individual would champion the cause and maintain the strategy related to data quality in the system. The person in the organization charged with this responsibility needs to have the authority to carry it out, rather than only act in an advisory capacity. The number of errors created will be directly proportional to the number of people involved in the process. Therefore, one central source for the creation and management of master data is always the preferred solution.

IBM also recommends that individuals be accountable for each class of master data, e.g., equipment master records, material master records, etc. Either one individual, or more likely one department, will have this responsibility. For example, the vendor master list should be maintained by the Purchasing department.

The City needs to ensure that a defined standard nomenclature is in place (publicized and understood) for naming Materials, Classes, Functional Locations, etc. Allowing users to make up their own naming or coding conventions defeats important objectives like wild card searches, creating efficient queries, and simplified reporting with standard functionality like 'list editing.'

Mixed and inconsistent data naming or coding conventions will also result in the necessity for custom reports requiring complex logic to extract that data. Custom reports with convoluted logic are prone to errors and inconsistencies and are expensive to maintain. Even though some business units may have different business requirements, it is important to have a strong coordinating authority that does not allow uncontrolled divergence of data conventions.

The City should document and publicize processes for requesting new master data values and for making changes to existing data. They should detail the control mechanism for ensuring accurate data.

As an example, the following three approaches are used at different organizations for managing their materials master data. The City should consider whether these types of



approaches may apply to its data types, keeping in mind that the same approach may not apply to all data types. However, the approach selected for each type must be consistently applied within that type.

- Some SAP organizations use a centralized approach, having created a central group which is responsible for creating the initial views of the material master: the basic data view, classification view, and in the case of one company, a storage view to link it to a plant. Individuals within the various departments, such as purchasing, sales, planning, etc, are notified that they need to create and populate the views of the new materials with the appropriate field values. This notification is done through email distribution lists or some other method of communication.
- The centralized approach can have some variation. Another SAP user allows the various plants to create their own material masters, yet they maintain central control over the release of those materials via the Cross Plant Material Status field. When the plant creates the material, they assign a status to the material that prevents it from being used in the system for various functions, such as planning and inventory management. The new materials are reviewed by the central control team for accuracy and then released via a change to the material status field. Once the material has been released, it can be used in MRP and other functions.
- Another SAP customer uses material templates, which are sample materials with the fields and views populated with defaulted standard data, and the remaining fields set to require input. The user copies these sample materials to create new materials, however, the fields that are set to require input must be populated by the user in order to save the material. Also, the MRP and Forecast profiles can be populated, which allows the user to default many of the field values by using the profile. The profiles are standard tools offered within R/3. This “template” technique could be used in either a centralized or decentralized environment.

Logistics Finding #3: WMS users do not have dependable, accurate help resources.

Business process specific work instructions for WMS processes do not exist or users are unaware of any. Many users are creating their own “cheat sheets”, possibly picking up bad habits in the process. They also did not seem to know how to get help. Users are also finding workarounds in order to complete their work. This often appears due to a lack of knowledge of the capabilities already available to them in SAP.

Recommendations:

5. Provide ongoing education and references for users.

- Create business-specific work instructions and provide easy access to the storage repository such as that created by InfoPak.
- IBM recommends that the City establish centralized control of work instructions. A resource should be assigned and made accountable for maintaining them as the business and its supporting technology change. Typically this responsibility would reside with the training organization. However, they can only respond to



- new requirements if they are kept informed of upcoming changes in functionality that may come from the business process teams or the business.
- Training material currently resides on a self-serve website which has been well publicized so that users can always have access to help. It takes constant and relentless publication of the channels available for self help. An email reminder or occasional newsletter will not suffice to conserve and grow the City of Tacoma's investment in SAP-specific knowledge. Monthly newsletters and an ongoing communication program to drive the point home are necessary.

Logistics Finding #4: WMS users are interested in sharing experiences with other organizations.

WMS users have an appetite to learn from other companies and also exchange information with users in a similar situation.

Recommendations:

5. Provide ongoing education and references for users. The City of Tacoma should promote user groups and harness this interest by having business users attend SAP user group meetings (ASUG meetings). IT employees should not be the only ones to participate in these events.

Logistics Finding #5: Users prefer that the system be customized to their specific business needs.

Within the PM Order Management, Notifications and Preventive Maintenance areas there were not significant issues raised regarding the basic functionality of the system. Issues seemed to be fairly minor and centered mainly with the Facilities Maintenance group.

However, many business units share the same functionality, but their business processes differ. Some are more successful than others at using the system. It appears some fields and options exist that are not required for all business units. Users, confronted with unnecessary fields that are not relevant to their business, develop a negative attitude towards the system.

Recommendations:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. The BBPC should review whether additional WO or Notification types are needed in order to more closely customize the options available to users in different business units. Catalog codes, statuses and printed forms should be reviewed to strike a balance between the requirements of cross-business reporting and accommodating legitimate requirements that are distinct for a particular business unit. It appears that this is not happening for some business units, specifically Facilities Maintenance.

Logistics Finding #6: Permitting processes are not operating efficiently.



The length of processing time for permitting to create a sales document was reported to be five to ten minutes. This is unacceptable and needs analysis. In addition, the process of issuing a permit requires many steps and is inefficient.

The 'hold' process is fundamental to the successful management of a permitting system and needs to work effectively. Currently, this is not the case. Many objects are involved and the functionality available is not common for each.

Recommendations:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. The BBPC should evaluate the following processes and supporting technology, which are considered to be of high priority:

- The length of processing time for the permitting process indicates inefficient program logic. The program should be reviewed and tuned for better performance.
- The multi step process to issue a permit should be shortened. Small improvements in each step would be additive and could make a more significant improvement in the overall procedure.
- The complete 'hold' design needs to be reviewed and the best functionality to use, selected. If standard functionality does not exist, the City should consider custom options and user statuses with modified business transactions controlled by workflow. This is a complex issue and requires a deep knowledge of the functionality available.

Logistics Finding #7: The City can improve the efficiency of its work force by considering relevant best practices.

Currently the City is not effectively performing detailed capacity evaluation and crew scheduling. The City is missing opportunities to improve the efficiency of the work force.

The City is missing opportunities for savings and improved efficiency by not using Task Lists for maintenance activities done repeatedly. This is best practice functionality and should be explored.

Recommendations:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. The BBPC should consider the following ideas for improving operational efficiency:

- Capacity evaluation can provide some significant benefits regarding crew scheduling and manpower balancing. IBM recommends delaying implementing these processes until the City acquires the necessary expertise. It would be necessary to provide additional planning data on work orders and to maintain capacity data on work centers. This could return immediate gains with the ability to use capacity evaluation and get an overview of resource loading. Once this is



- established and knowledge expanded, additional effort should return further gains in the ability to schedule resources more effectively. Considerable expertise is required to implement this functionality.
- Develop and implement General Task lists and Equipment specific Task Lists for activities done repeatedly. They are extremely powerful at pulling standard data into work orders for material requirements, labor estimates, etc. They can save considerable time and reduce errors. If the requirements are accurate and material defined and purchased correctly, the entire supply chain is optimized. If the wrong materials are specified, the hidden costs can be dramatic. Sending materials back to vendors and reversing transactions, misapplied costs, wasted effort and user frustration (which is hard to put a price on) all contribute to the downward spiral of efficiency.

Logistics Finding #8: The framework purchase orders are cumbersome to use.

Users have a significant problem with capturing fuel and maintenance costs utilizing a framework PO. Manipulating the PO with hundreds or thousands of line items is extremely cumbersome and difficult to manage.

Recommendations:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. IBM recommends that the BBPC review the business process surrounding capturing fuel and maintenance costs. The BBPC should evaluate the possibility of reducing the number of lines on the framework PO. Lengthy documents can result in long processing times and locking issues as more than one person attempts to do transactions that require an update to the document. The City should consider more framework PO's with fewer line items. Other SAP customers, with fleets many times larger than the City of Tacoma's, are using the same process with success. The difference is that they use more PO's (by cost center) but with 2 to 6 lines per PO. The City should consider finding a compromise that trades off the effort required to maintain the PO's with functionality that works.

Logistics Finding #9: Plant Management data reports do not meet users' needs.

The ability to report on data that is distributed throughout the PM module is not always easy. For example Functional Location data, equipment data, measurement document values and characteristic values can not be easily combined.

Recommendations:

6. Improve reporting capabilities to enable decision-making. The City should consider creating one comprehensive vehicle master data report. It would pull data from many areas knowing that it may be necessary to combine it into a report. It can then be used to satisfy reporting needs that may not even be identified yet. It can prevent building numerous small reports for very unique queries that may not be used much.



Assembling the data in one place for many needs may save future work. Other SAP customers have done this with success, replacing up to ten reports with one selection screen that offers most of the fleet data available, e.g., equipment, classes, characteristics, measuring documents, notifications, orders, plans, etc. It puts flexibility in the users' hands and gives them more control.

Logistics Finding #10: A reference is not available that matches parts with vehicles.

Specifying and procuring the correct parts to service a vehicle appears to be a problem. Wrong parts are often ordered, resulting in re-work, wasted effort and cost.

Recommendations:

4. Assign resources to certain quick-hit changes. The City should create and implement Bills of Material for vehicles as soon as possible. The effort will pay off many times over, at all levels in the organization, for the mechanic, the requisitioner, the receiver, accounts payable, etc.

Logistics Finding #11: Measurement document data is not accurate and the process of capturing this data is not consistent across business units.

Each business unit has varying degrees of success at managing the process of capturing accurate measurement document data. There are a few methods of entering measuring documents, e.g., directly with IK11, through confirmation, entry lists, or directly on the work order. Each method has some advantages and disadvantages. It was not obvious from the workshop if one process will fit all of the business units.

It is important to provide a robust process for capturing and creating measurement documents. The correct values drive maintenance plan scheduling, consumption data and many reports.

Recommendations:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. The City should select the best approach for capturing accurate measurement document data and formalize it across business units and users. If custom development is required, it may be worthwhile. The consequence of bad measurement documents causes many areas of functionality in PM to be compromised. The selected process will need to be reinforced with training, which should reduce a significant number of errors.

Logistics Finding #12: The system does not provide time period Project Cost Reporting.

Standard project reports cover project inception to date; the displays often include columns for current year and prior years. For extended time projects, this does not provide sufficient detail or adequate grouping of data to represent the biennium. Project



reporting also requires specification of time periods for the data inclusion besides just 'year'. Many financial reports have date range fields as part of the selection criteria.

Recommendations:

6. Improve reporting capabilities to enable decision-making. IBM recommends that the City identify the specific requirements (fields and format) to report project life to date actuals (across biennium) and selected period reporting. Many FI/CO reports are specified time range reports. These may provide a guide to developing the custom PS report required here.

2. Establish a Best Business Practice Committee that is responsible for issue resolution. IBM recommends that the BBPC evaluate whether there is a process problem with how to handle biennium carry-over. Project reporting usually covers the project to date; the City would need to define what the process should be for carry over transactions.

Logistics Finding #13: Report printing does not include the selection criteria.

Some users are unaware of how to select the inclusion of the selection information header sheet when printing reports. When retrieving their reports from a central printer, they have difficulty identifying their report from the stack of printed documents.

Recommendations:

4. Assign resources to certain quick-hit changes. Create and issue an instruction sheet using InfoPak showing the proper selections on the 'Print List Output Screen'. IBM estimates that this would require 2 hours.

Logistics Finding #14: The budget entry and maintenance process requires cost element detail, which is excessively time consuming for some departments and not used by others.

Some departments require budget entry and maintenance at the level of detail of the cost elements; other departments do not. Cost element detail is very time consuming, detracting from the project manager's time for managing project execution.

Recommendations:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. IBM recommends that the BBPC review the business requirements to determine the standard level of budget detail that is required. The level of detail should be consistent across departments, if possible. IBM estimates this would require 80 hours, with 2 to 3 months for departmental agreement to occur.

Logistics Finding #15: All individuals, regardless of their department, can access all projects and can make changes without any limitations.



Project structure maintenance is secure at the transaction level (this is standard SAP functionality). There is no SAP provided security for project change access by Project definition or WBSEs master data, i.e. department, or cost center.

Recommendations:

9. Implement more robust system controls. IBM recommends eliminating the risk of entries on the wrong structure by adding role security by department for financial specialists. This change has a lower priority than the others listed.

5. Provide ongoing education and references for users. Users need to be effectively trained in making correct structure entries. This would increase the level of confidence in the jobs the financial specialists are performing.

Logistics Finding #16: Project settlement is hampered by open, conversion projects with no transactions.

There are many 'active' projects in the system created as part of the initial go-live conversion of legacy data. These projects have no transaction data. When the monthly settlement program is run, the system searches these projects for financial data. Finding no data, the system generates an error log entry for each WBSE, which requires manual intervention to resolve and complete the settlement process.

Recommendations:

4. Assign resources to certain quick-hit changes. IBM recommends closing all of the conversion projects with no activity since go-live. IBM estimates this would require 80 hours.

Logistics Finding #17: Inaccurate project costs are resulting from staff incorrectly entering time in CATS.

Recommendations:

4. Assign resources to certain quick-hit changes. IBM recommends reinforcing with contractors the necessity of proper time provision as a condition of contract fulfillment. IBM estimates this would require 10 hours and could be part of contract administration. There are no associated SAP system changes.

Logistics Finding #18: Users need a cost center manager report for plan vs. actual labor hours charged to capital projects, through Work Orders that have a settlement rule split between Capital and O&M receivers.

Recommendations:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. IBM recommends that the BBPC analyze the data passed during settlement



to assess how to extract the data desired. The BBPC may determine there is a need for a business process modification. Perhaps when the time is entered, there can be a split between Capital and O&M. This would be a complex custom report.

Logistics Finding #19: Reporting by vendor type is a manual and laborious process.

There is an ongoing requirement for reporting information by vendor type up to various city officials. This has become a manual and laborious process within the current SAP environment.

Recommendations:

4. Assign resources to certain quick-hit changes. IBM recommends utilizing the industry field on the Vendor master to allow vendors to be grouped together by industry. The industry field is located in the general area of the vendor master record. The user specifies what industry a business partner belongs to by entering an industry key in its master record. This information can be used for evaluations, to create a vendor list or invoices paid according to industry, or to help in information gathering and management reporting.

Logistics Finding #20: The purchasing info record contains data of use to various parties. However, not all parties are aware that the data is available.

One of the issues identified during the GAP analysis workshop was the requirement to track material by the vendor's part number. The City of Tacoma has the baseline configuration structure in place to satisfy this requirement by capturing info record information from processed purchasing documents, but was not benefiting from the information provided by the system. The purchasing info record is a source of information for a certain material and the supplier of the material. It contains data such as the vendor's current prices and conditions for the material, or the number of the last PO. The standard information available is: Purchasing Info records per vendor, material, material group, purchase price history, and quotation price history. This information can be invaluable to a purchasing department and some of this information was passed along to the user community during the GAP workshop.

Recommendations:

5. Provide ongoing education and references for users. IBM recommends that the Materials/Purchasing enterprise improve information flow around utilizing info records. This can be accomplished through training and making the info records functionality information available to the end users.

Logistics Finding #21: Material ordering and tracking are inefficient processes.

Material ordering and tracking for Plant Maintenance with a link to master data and ordering processes was discussed as a gap during the workshops. Users place orders by description rather than using the material master as a data management tool. This



practice hinders ordering, cost tracking and accountability. One other area of concern was Asphalt production and the manual process used to order and track material. Asphalt production currently has 3 or 4 difference recipes. Therefore a manual process becomes very laborious and time consuming.

Recommendations:

4. Assign resources to certain quick-hit changes. IBM recommends setting up the SAP Bill of Materials structure with alternative Bills of Materials for the different Asphalt recipes and other materials. The City should let the SAP system assist in ordering and tracking production materials for this process.

Logistics Finding #22: SAP's Material Requirements Planning functionality is not being used to its fullest potential.

Material Requirements Planning (MRP) functionality is currently being used for stock replenishment on a limited basis. The SAP MRP program operates in an integrated environment that can link Plant Maintenance requirements directly to purchasing through the correct structure and settings within SAP.

Recommendations:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. IBM recommends that the BBPC review the current MRP settings to verify that they are best utilized for the City's business processes. We also suggest that the BBPC review the Plant Maintenance structure. IBM recommends using the Bills of Materials and Task list that is part of the standard functionality in the Plant Maintenance system.

Logistics Finding #23: The Requisitions/Purchase Order processes are error-prone due to missing information and improper procedural timing.

One of the areas for major concern with the purchasing/finance group was the structure of Purchase Requisitions and Purchase Order processing. End users are processing Requisitions/Purchase Orders with limited information and many are processed after the fact. These practices lead to extra work for Accounts Payable staff in identifying the correct purchase order and invoice to be paid.

A separation of duties is not encouraged or enforced in the current environment, which is in direct conflict with industry best practices. The original design to allow departments to do their own buying and free up time for buyers is not efficient. This is because a great amount of time is spent researching purchases and releases against contracts to determine what is valid and what should be paid.

Recommendations:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. IBM recommends that the BBPC review the current business practices and



possibly restructure the procurement process. It should take into consideration the industry best practice of separation of duties, allowing user departments to submit requisitions for final purchasing approval and processing. Best practices dictate that while anyone should be able to process a request for material and/or services, the actual Purchase Order should be processed or at least reviewed by someone with buying authority and expertise. A purchase order is the acceptance of the offer from the vendor and serves as the legal and binding contract between both parties. Currently, purchase orders over \$5,000 are reviewed by Purchasing department staff. Purchasing staff have the ability to review all purchase orders.



Section 4.3: Accounting

The Accounting functional area includes the following modules:

- Financials – General Ledger, Accounts Payable and Accounts Receivable (FI-GL, FI-AP, FI-AR);
- Controlling (CO), which includes Funds Management, Human Resources Management and Assessments;
- Corporate Financial Management (CFM), or Treasury;
- Fixed Assets Management (AM); and
- Project System (PS), or Capital Budgeting.

These modules support all financial transactional data for all City departments.

The gap analyses identified the following findings the City should address. With each finding, we have provided one or more recommendations to move the City closer to its performance goals. The following describes the high-level findings and recommendations for improvement in the Accounting areas.

Accounting Finding #1: The City's use of the CO module for budgeting does not include monitoring the budget utilizing availability control.

The City currently utilizes the CO module to develop and manage budgets. The use of CO planning is an acceptable approach to build the City's budget plans: the City breaks the plans down by cost center and departments manage the plan to actual. SAP supports the use of CO planning to build a budget and monitor actual cost to plan. CO planning offers the ability to develop multiple plans and version control. It also has the ability to monitor the budget utilizing availability control. However, the City chose not to use this functionality.

Recommendations:

7. Apply best practices for upgrading to subsequent versions of SAP and/or adding functionality. IBM recommends that the City use the SEM-BPS (SAP Strategic Enterprise Management-Budget Planning and Simulation) functionality to develop and build operating budgets. SEM allows planners to use actual expenditures and budget data as the starting point for the next planning period. Technology that processes huge volumes of data using a centralized database ensures consistency and provides the highest quality information. The solution also supports complex "what-if" analyses and simulations. It allows planners to use multiple-planning dimensions and provides the most accurate data simulation and precise evaluation. It is a system that transforms collected data into information that empowers individuals to make smart decisions. It also delivers the right data in the right format to each member of the budget preparation team. SEM will help planners create the most accurate budgets. The budget preparation process can be integrated with all relevant BackOffice applications, to include Funds Management, which is an add-on component to SAP for Public Sector, and other application components such as Controlling and Human Capital Management. If the City



has purchased licenses for SEM, it can begin the design and implementation of this functionality.

9. Implement more robust system controls. If the City continues to use CO planning to develop and manage operation budgets, IBM recommends activating availability controls in the CO module.

Accounting Finding #2: Users in the Controlling area are frustrated due to the business requirement of biennial budgeting and SAP's lack of a standard budget configuration that meets biennial budgeting.

Most of the concerns with the Controlling module are centered on the budgeting process (budget preparation and execution). The budgeting process is very time consuming due to the conflict between the biennial budgeting need and SAP's standard yearly budget configuration. Users develop manual work-arounds to complete biennial budgeting in separate databases or spreadsheets. End users noted how the budgeting process is complicated because there is no standard budgeting process procedure.

Recommendations:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. IBM recommends that the BBPC facilitate the establishment of standard budgeting process rules across business units.

6. Improve reporting capabilities to enable decision-making. IBM recommends the expanded use of Business Warehouse functionality. Standard Business Warehouse functionality would allow for greater reporting flexibility which will satisfy the varied reporting needs across business units. Users can design their own reports which can reduce the need for work-around reports developed outside of the SAP system.

Accounting Finding #3: The current approach to billing using multiple SAP modules is creating inconsistencies and errors.

There is limited direct use of the Financials Accounts Receivable module. The majority of the customers' billing requirements are satisfied by the Sales and Distribution billing functionality or the CCS billing functionality. With these two billing avenues, the accounts receivable information is seamlessly transferred to the Accounts Receivable module via system interfaces. The customer payment business process uses lockbox interface and standard SAP manual customer payment functionality. The key points of concern were:

- improper revenue recognition in the general ledger using the current billing process, and
- no standard business procedure (across business units) on how to deal with unidentified customer payments and lack of usable SAP reports.

Recommendations:



6. Improve reporting capabilities to enable decision-making. IBM recommends implementing user exit (custom program logic) and using FM reporting for revenue and receivable reporting in order to improve revenue recognition reporting.

There is a standard SAP user exit that is accessed during customer invoicing/billing in the Financials (FI) module. SAP user exits are points in standard SAP programs (transactions) where a customer's own program can be called. User exits allow a customer's developers to access and modify program components and data objects in the standard system. User exits are upgradeable, though each user exit must be tested for proper function. The user exit accessed during customer invoicing in FI will include substitution logic. The substitution logic will replace the standard receivable FM commitment item with the revenue commitment item(s) posted on the balancing line items. This FM commitment item substitution eliminates revenue in FM (effects net to zero). When the customer payment is received, the standard FM revenue commitment items are updated. IBM recommends that revenue and receivable management reporting be done out of the FM module. This would resolve some of the reporting and controls issues identified. The standard system comes with several FM reports that can be used in this area. In addition, these reports can be modified (using Report Painter functionality) as needed.

Accounting Finding #4: The customer payment application process does not enable users to efficiently support customers.

The current payment procedure that is in place causes the end users more work to perform customer follow up and resolution on short or missing payments.

Recommendations:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. IBM recommends that the BBPC review the current policies on unidentified customer payments. They need to be modified such that instead of having the system default any unidentified payment to the customer's oldest open item, the end user applies payment to the customer account as a credit. Then the financial services end users contact the customer and/or billing department in order to clear the open credit with the correct open item.

Accounting Finding #5: Accounts Receivable processes do not efficiently make information available to users when they need it.

There is an underlying distrust of the standard SAP reports for Accounts Receivable due to previous bad information on the reports. This occurred due to a variety of reasons such as the timing of revenue recognition, the timing lag between transfer of data from CCS module and Financials, and the current procedure used to apply unidentified customer payments. The timing lag between data transfer from the CCS module to Financials is inherent to the way the standard system operates.



Recommendations:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. IBM recommends that the BBPC evaluate how to improve the confidence in Accounts Receivable reporting by considering:

- Implementing the configuration changes recommended for revenue recognition
- Changing the business policy on unidentified customer payments

6. Improve reporting capabilities to enable decision-making. IBM recommends improving the confidence in Accounts Receivable reporting by developing a BW report to satisfy various reporting needs across business units, eliminating external SAP report development. Reporting can also be improved by educating the user on when the updates occur and ensuring the month end reporting in Financials includes all latest data from CCS. IBM recommends leveraging the user groups to determine the reporting business requirements then holding an integrated reports requirement workshop(s) to determine what is available within the SAP standard system verses requirements for future Business Warehouse applications.

Accounting Finding #6: The accounting system, particularly in the area of funds management and budget preparation, as designed was not optimally configured and was not using SAP recommended best practices.

Recommendations:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. IBM recommends that the BBPC review current asset management business procedures supporting capitalization and cost calculation and implement a standard business procedure.

Accounting Finding #7: There is a known system shortcoming in the integration between the Treasury module and the Funds Management module. (also Industry Solutions Finding #13)

The Fund object is not fully integrated with the Treasury module. This is a gap in the SAP functionality. This aspect is currently not configured or designed within SAP and therefore would require custom code. Most of the Public Sector accounts that need this have created customization for it.

Recommendation:

The workarounds currently in place are the only known fixes for this gap. IBM recommends that the City only develop this customization if it is a critical business need since SAP does not plan to enhance this functionality in the near future.

Accounting Finding #8: The system does not provide adequate Budget Reporting.



Because the City is not fully using the FM functionality, these budget reports are not available.

Recommendations:

Review content of present work list items FM-FM-045 and FM-FM-039 to verify these satisfy the gaps.

Accounting Finding #9: Asset Management users are not getting the information they need to perform their jobs.

In the Asset Management area, standard SAP reporting does not satisfy all the business requirements across business units. To satisfy this gap, end users manually develop ‘off line’ reports and reporting databases. This practice is time consuming and prone to errors.

Recommendations:

6. Improve reporting capabilities to enable decision-making. IBM recommends improving available reporting by expanding the use of BW functionality.

Accounting Finding #10: Proper financial controls may not be in place.

The Finance Department is currently unable to audit the system and verify City employees are complying with procurement policies.

Recommendations:

9. Implement more robust system controls. IBM recommends that the Finance Department:

- Conduct a comprehensive review of all current business process to verify proper audit and business controls are in place.
- Work with the SAP support organization to ensure all SAP security and authorization structures meet the City’s needs for proper checks and balances.



Section 4.4: Integrated Modules

The Integrated Modules functional area includes the following modules:

- Strategic Enterprise Management (SEM),
- Business Warehouse (BW), and
- Workflow (WF).

The SEM module is used by the budget preparation department in Finance. The BW and WF modules are available to all users.

The gap analyses identified the following findings the City should address. With each finding, we have provided one or more recommendations to move the City closer to its performance goals. The following describes the high-level findings and recommendations for improvement in the Financials Management Application System areas.

Integrated Modules Finding #1: Financial reporting does not currently meet users' needs at the necessary level of detail or summarization.

Reporting is a common issue among business processes at the City. Revenue and AR reporting includes large amounts of invoice data which need to be summarized by a variety of different areas. Currently revenue is totaled and reported during the GL posting process and this is an accurate representation of general ledger activity. However, the CCS sub-ledger also has detailed information which may be used to tie back to the GL reporting. CCS contains Quantity and Amount statistical values to allow for detailed reporting of invoice charges as well as sub-transactions for identifying FI-CA postings.

Recommendation:

6. Improve reporting capabilities to enable decision-making. IBM recommends that the BW be utilized further to allow for financial reporting to be more complete. We also recommend that the Quantity and Amount statistical values be configured and managed for each schema within the rate configuration. These values should be used rather than the current Operand values since they allow greater flexibility for reporting. In addition, the Quantity and Amount statistical configuration includes standard BW extracts of invoice information using EBW_DQ_SS for extracting invoice statistics to BW. The complexity for implementing the enhanced BW reporting is high due to the limited BW reporting currently in place. A separate project would be needed to implement the BW changes needed to meet the detailed revenue reporting requirements.

Integrated Modules Finding #2: SAP Business Workflow offers additional workflow solutions that may be of use to the City.



SAP Business Workflow is a solution that has been integrated fully in the R/3 System. It has enabled electronic management of customer-specific processes to be coordinated and controlled on a cross-application and cross-work center basis. There are already some workflow processes in existence within the City of Tacoma enterprise.

Recommendation:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. IBM recommends that the BBPC review SAP standard Business Workflows to determine if any would be of value for the City's current business processes. There may be some additional applications for SAP Business Workflow, but these should be evaluated carefully, noting that numerous workflows require constant monitoring by a workflow administrator and could potentially cause a drain on system resources.

Integrated Modules Finding #3: Accurate information is not available for reports due to errors when it is entered in the system.

During the Gap analysis workshop all departments in attendance complained of the lack of accurate reporting information. The causes are primarily not configuration problems. Instead, users are either entering incorrect information or are not entering the information completely.

Recommendations:

6. Improve reporting capabilities to enable decision-making. IBM recommends holding an integrated reports requirement workshop. From the requirements identified, the City should determine which can be met within the SAP standard system and which are requirements for future Business Warehouse applications.

Integrated Modules Finding #4: Project reporting does not contain all the information (financial and text) contained in Project System for a project.

Standard project reports in SAP do not contain the project text information, only the execution data, dollars, hours, etc. Inclusion of the descriptive project text information is necessary for project reporting.

Recommendations:

6. Improve reporting capabilities to enable decision-making. IBM recommends using the Business Warehouse (BW) for such reporting. This would require determining whether the length of the project text field can be expanded for transfer to the BW. We understand that some preliminary BW definition was done during design, but not implemented.

Integrated Modules Finding #5: Reporting in the general ledger, month and year end close areas is cumbersome and error prone due to the need for multiple reporting tools.



The key concerns in general ledger, month and year end close centered on improved reporting. The users currently have to use external reporting tools (i.e. Excel or Access databases) in order to fully satisfy their reporting needs. Standard Business Warehouse (BW) functionality allows for greater reporting flexibility which will satisfy the varied reporting needs across business units. Users can design their own reports in BW which would reduce the need for work-around reports developed outside of the SAP system.

Recommendations:

6. Improve reporting capabilities to enable decision-making. IBM recommends expanding the use of Business Warehouse functionality for general ledger, month and year end close reporting requirements. We recommend leveraging the current user groups in order to define each business units' reporting requirements, define the scope of the reports and document the needs.



Section 4.5: Human Resources

The Human Resources functional area includes the following modules:

- Benefits;
- Employee Self Service (ESS);
- Training & Event Management (TE);
- Personnel Time Management (PT), or Time Collections;
- Payroll (PY);
- Personnel Administration (PA), or Position Management.

No major gaps were identified during the review sessions of Organizational Management and Personnel Administration (PA). Both the Organizational Management and Personnel Management sub-modules appeared to have been implemented with no missing configuration.

The gap analyses identified the following findings the City should address. With each finding, we have provided one or more recommendations to move the City closer to its performance goals. The following describes the high-level findings and recommendations for improvement in the Human Resources areas.

Human Resources Finding #1: Position data lacks integrity because a scrub of the data did not take place before conversion into SAP.

The errors in the position data cause the end user much rework and consume much of their time.

Recommendations:

4. Assign resources to certain quick-hit changes. Designate a team to focus on the research and cleanup of the incorrect position data. IBM estimates that it would require 2 FTEs for two weeks. This assignment should be very specific to include a time limit. (Example: Person 1 will be assigned to focus totally on data clean-up for a two week period with expected results that all inaccurate data is either fixed or deleted.)

Human Resources Finding #2: Training and Events users are unable to proficiently perform their business functions due primarily to unmet information needs.

The SAP Training and Events (TE) Module was installed with only the minimum requirements. The TE users can plan and manage any kind of business event that requires listing, scheduling, and tracking attendees. However, in talking with the users, we learned they can not pull reports that list the required training for certifications, nor can management get notifications that required training, certifications, or re-certifications are due. This limitation appears to jeopardize the city government policy requirements as well as safety for the staff. In addition, all of the training history has not been converted into the SAP system. The Query reporting tool is not being fully utilized to assist the end



user in pulling specific information for their customers to reconcile training policy requirements.

The qualifications catalog and job classification configuration were identified as being an essential part of the TE module to fulfill expected job requirements for training, certification, and re-certification. Managers Desktop was also a requested feature, with workflow to notify managers of upcoming training/certification requirements.

Recommendations:

2. Establish a Best Business Practice Committee that is responsible for issue resolution. IBM recommends that the BBPC investigate the following:

- Enhancing the workflow to notify the manager that a training class is being requested by an employee. The manager can approve or reject the request. Also, required training/certification/re-certification could be done by using workflow. The manager would be notified within a selected time period when an employee's current certification is expiring and reminded to schedule the employee in the appropriate class. This will also allow the Training Department to know the requirements of the upcoming classes.
- Creating a Qualifications catalog to assist both managers and employees with required training by position. This requirement is recommended, but it is a costly addition and will require additional configuration to complete. This task is on the current work plan for future enhancements. However, we would recommend this task be reviewed for possible placement on the short range plan. This configuration is needed to allow compliance with job requirements and certifications.

6. Improve reporting capabilities to enable decision-making. Reports using SAP queries are needed for the users to determine classes taken and classes required. IBM recommends that the City provide an enhanced training class/document to assist the end users in utilizing this tool for better performance and provide information to the customer.

Human Resources Finding #3: Several HR policies are not supported by the SAP software which requires users to develop manual support processes.

End users require improvements to time collection reports, current company policies, work schedules, union contracts and time quotas. Users expressed a need for additional reports to enhance daily functions and to assist timekeepers in decision making. End users identified policies as the cause of current configuration work around tasks. Holiday work schedules appear to be causing some concern and possible overpayment to employees. A decision was made to have 8.0 hours default into the employee time entry screen when a holiday occurs. This creates time entry editing due to the varying work schedules. Union contracts cause another concern for timekeepers and the delay of contract agreements. This manual update process of infotype 0008 causes delay in payment to the employee and possible data entry errors. Time quotas buckets are not



currently reduced by using infotype 2010 for Comp, Incentive and Severance pay. This again must be a manual reduction to the time quotas which permits the opportunity for errors. The current process is very inefficient and provides a great margin for error.

Recommendations:

6. Improve reporting capabilities to enable decision-making. A single report that identifies all accounting associated with time and payroll is needed. A report that combines all charges and credits to include CATS and account distribution would streamline this reconciliation process and make efficient use of users' time. A detailed spec from the time keepers should be requested for this report. Also a Compensation Time audit report which records earned Comp time that could be reviewed prior to final payroll would allow ample opportunity to audit and correct any errors.

2. Establish a Best Business Practice Committee that is responsible for issue resolution. IBM recommends that the BBPC assess how and when to resolve the issues associated with the following City of Tacoma policies:

- **Comp Time:** this policy creates many problems for the end users. A policy review could reduce many manual processes and should cover the following:
 - Comp Time does not get charged to orders or proper accounting
 - Employees accrue Comp Time at the current hourly rate, and when the time is used, it is usually at a higher rate
 - Comp Time does not convert automatically in the system to time and one-half; someone must manually calculate the dollars, which opens opportunity for increased errors
 - Additional manual work must be done when Comp Time is earned in lieu of overtime if the employee is on Standby status
- **Retro Pay to terminated employees:** A policy review of retro pay to terminated employees could introduce a cost savings and should cover the following:
 - Retro Pay to terminated employees increases the manual workload. Special coding must be done for individual infotypes. Also, research must be done to make certain the benefit deductions are turned off.
- **Severance Pay:** A policy review should cover the following:
 - Severance pay is currently being paid using a manual process to calculate the total amount due, which is entered in infotype 0015. This is a lengthy and error prone process. IBM recommends a review of the original blueprint to validate the decision behind using infotype 0015 versus infotype 2010. Use of infotype 2010 would allow quotas to be calculated and posted automatically rather than through a manual calculation.
- **Holiday calendar:** A policy review should cover the following:
 - The underlying concern with the Holiday calendar is with the work schedules. It appears numerous rules and work schedules are required. A City policy decision was made to have 8.0 hours default into the employee time entry screen when a holiday occurs. Employees with varied schedules and those not requiring holiday pay require editing by the timekeepers. An option here is to have a warning message on the edit time entry reports to note "Holiday pay



under 40 hours.” This will give the timekeeper the option to edit entries prior to sending the time sheet to payroll. Another option would be to change the holiday calendar for zero holiday hours and have timekeepers enter holiday pay. This is a policy decision for the City; however, there is a need for tighter controls against overpayment on holiday pay.

- LESA has identified an employee who works four 9-hour days. When an exception occurs, it has to be manually calculated with a reduction in absence hours. This could be handled as a flex schedule with 0 (zero) hours, which would allow the timekeeper to enter daily labor hours and absence hours. This would eliminate the extra work of backing out hours and allow the system to calculate accurately.
- Union contract settlement: A policy review should cover the following:
 - Currently, when a union contract is settled, infotype 0008 (Basic pay) for affected employees is manually updated, which is labor intensive. Instead, IBM recommends using either a BAPI program or a CATT program to update infotype 0008. The use of an automated program increases processing efficiency and decreases errors. SAP has a standard delivered program that will update infotype 0008; however, pay scales with ranges must be in place in order for it to update the Basic pay infotype.
- Pay out process: A policy review should cover the following:
 - The process to pay out Comp Time, Incentive, and Severance pay is currently dependent on the Time infotype 2010, which is not entered in CATS. This causes the quota bucket to be reduced manually. The recommendation here is using infotype 0416 to pay severance/comp and vacation payments. This process will reduce the quota bucket.

Human Resources Finding #4: Retirement end users do not have the tools or the time to effectively handle all of their job requirements.

No major gaps were identified within the Retirement session that pertained to the SAP system. However, end users are struggling with handling their day to day workload for the following reasons:

- They are limited in number and unable to meet the demand on them.
- Policies are not always clear and stable.
- Union agreements change.
- They have limited reporting capability and reporting access due to authorization restrictions.

As a result, it is very difficult for users to analyze reports for reconciliation and to conduct detailed research when issues/differences are found.

The following examples illustrate these issues:

- Users identified off-cycle payroll reporting as a critical form of reconciliation to which they have limited access. Payroll direct deposit is currently not provided for off-cycle payrolls. This may be a policy concern or a bank limitation but not a gap within SAP.



- Users do not have a clear process to complete the reconciliation of payroll deductions to financial postings. They are compiling information from various reports to complete these calculations.
- Retirement users need the unclaimed (warrants) check report created by Treasury with sort options to provide efficiency in job performance. The information on this report is available in greater detail.
- Query report selections do not currently meet the users' requirements in regards to level of detail.

Recommendations:

6. Improve reporting capabilities to enable decision-making. IBM recommends that the retirement end users should provide detailed specifications for needed reports to the BISD team (e.g., the unclaimed check report). Working closely with the BISD team will assist the end users in providing high quality customer service. In addition, IBM recommends that BISD and the payroll team place these reports on a reports schedule to be added to the users report tree. This would be necessary because of the retirement team's limited authorization access. Streamlining the availability of these necessary reports will not only expedite the reconciliation process but will also provide users additional time for needed research. IBM also recommends that appropriate users gain the skill sets required to enhance existing queries so that they include additional detailed information.

2. Establish a Best Business Practice Committee that is responsible for issue resolution. IBM further recommends that the BBPC evaluate how best to identify and correct retirement business process concerns and issues on an ongoing basis. It is also necessary to streamline the process flows. This would be best accomplished with a team containing at least one retirement end user, one payroll end user and one BISD member.

Human Resources Finding #5: The Payroll team does not have a test environment.

The Finance Department payroll employees identified a critical need for a TEST client to test scenarios prior to entering into the production client. Tests are currently being done in the production client then deleted. These actions will cause numerous errors within SAP. Finance payroll employees need to identify the issues that require testing.

Recommendations:

4. Assign resources to certain quick-hit changes. IBM highly recommends that the payroll team stop testing functions/scenarios in the production client. Due to the complexity of the tables filled in the background, this action could corrupt the production data and create errors for future actions. IBM recommends providing access to a QA/Test box for these scenarios. This box must contain the current configuration to provide the user with accurate results. It would need to be placed on a refresh schedule with notification to all users.



Human Resources Finding #6: The time audit report does not meet payroll/time users' needs.

The payroll/time team stated that reports were either inefficient or missing critical data. They require a report to display Absence and Attendance types when reconciling the time audit report to increase the speed of the process. Currently, timekeepers spend a tremendous amount of time attempting to reconcile the time audit report using wage types. The team also identified a need for a reporting tool to track labor hours and cost.

Recommendations:

6. Improve reporting capabilities to enable decision-making. IBM recommends that the Payroll/Time team work with BISD to write a report specification with detailed information and required fields needed for Absence and Attendance types for reconciliation of the time audit report. This effort should reduce the time currently required to perform this action.

A reporting tool to track labor hours and cost could be generated using one of the following options: standard reporting functionality, an ad hoc query, BW functionality, or a custom report.

Human Resources Finding #7: By using the Position Control functionality in SAP, the City will have more tools to make financial HR decisions.

The City is not currently using the Position Control functionality from SAP. Position Control is the integration point between the HR and financials modules. Since the City is not using FM properly, it does not have the ability to plan positions to drive the budget.

Recommendations:

7. Apply best practices for upgrading to subsequent versions of SAP and/or adding functionality. Position Budget and Control functionality can be used to manage human resource budgeting and reporting for the organization. The functionality consists of 2 key components:

- **Position Plan Management** - used to manage/report FTE process, position schedule, availability reports and other enhanced reporting called budget book
- **PBC Commitment Processor** - gives end users a tool to make the budget relevant decisions in HR reflected directly in Accounting without manual intervention. The PBC Commitment Processor is an event driven background process that is used to either create or simulate payroll related commitment entries in FM, CO, and Grants modules. The functionality can be used to calculate personnel cost planning/saving and with the open architecture used by the product. Additionally, workflow messages can be configured to automatically send communications between HR and Accounting when budget related issues need to be addressed.



PBC functionality will give the City better reporting and planning flexibility that supports the HR process. In addition to the standard reports available in the system, users can also create reports from Business Warehouse.

It is important to note that implementing the PBC functionality requires several key configuration and design considerations such as:

- Accounting Organizational units established in the system (FM area assignments of Controlling areas and Company Codes) must be consistent and reflect the organizations reporting and management requirements
- FM and GM derivation rules must be reviewed during configuration of PBC
- Additional steps will be included in the month end/year end close procedure
- Security authorization strategy must be modified to include PBC security requirements. Security in PBC can be assigned at 4 levels:
 - Transaction authorization
 - HR basic
 - HR structure
 - Change/Display of PBC documents

Implementing the PBC functionality also requires the following technical considerations:

- The SAP R/3 release should be at least 4.7
- The Enterprise Extension set SAP R/3 HR-EA for the commitment processor of PBC functionality is required
- The SAP R/3 Public Services (EA-PS) is required
- The Enterprise Extension set for Human Resources (EA-HR 2.0) is required.

Similar to the known system gap for biennial budget planning in R/3, the PBC functionality does not naturally support multi-year commitments. However, there is a SAP developed workaround that can be used to address this gap. IBM recommends implementing the PBC functionality after the system upgrade in 2007.

Human Resources Finding #8: Users do not have a consistent policy for entering retirement information about new hires.

Entry of beneficiaries falls within the benefits module of SAP. However, payroll personnel are entering this information for new employees without consistently applying the retirement deduction flag. This causes a tremendous amount of research to resolve.

Recommendation:

4. Assign resources to certain quick-hit changes. Allow payroll personnel to continue to enter the beneficiary information. Provide the benefits department with a daily/weekly new hire report to allow them to audit the entries before payroll is processed for the new hires.