THE CITY OF SAN DIEGO

DATE: June 11, 2009

TO: Honorable Audit Committee Members

FROM: Eduardo Luna, City Auditor

SUBJECT: **Audit of the SAP ERP Implementation –**
         Current to Integration Testing, Cycle 1

Attached is our audit of the OneSD ERP Implementation through Integration Testing, Cycle 1. This report will be presented to the Audit Committee on June 15, 2009. Management's response to our audit report can be found after page 18 of this report. The City Auditor staff member responsible for this report is Stephen Gomez.

We would like to thank the staff from the OneSD team for all of their assistance and willingness to provide audit staff full access to all implementation related meetings. All of their valuable time and efforts spent providing us information is greatly appreciated

Eduardo Luna
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Eduardo Luna
City Auditor

cc: Honorable Mayor Jerry Sanders
       Honorable City Council Members
       Jay M. Goldstone, Chief Operating Officer
       Mary Lewis, Chief Financial Officer
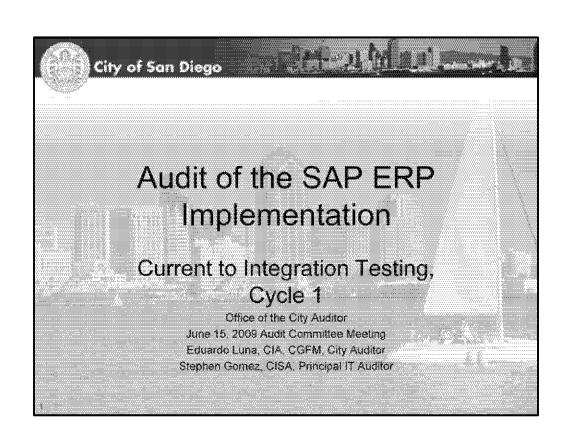   Nader Tirandazi, Financial Management Director
       Debra Bond, Project Manager II
       Andrea Tevlin, Independent Budget Analyst
       Jan Goldsmith, City Attorney
       Stanley Keller, Independent Oversight Monitor

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City of San Diego

Audit of the SAP ERP Implementation

Current to Integration Testing, Cycle 1

Office of the City Auditor

June 15, 2009 Audit Committee Meeting

Eduardo Luna, CIA, CGFM, City Auditor

Stephen Gomez, CISA, Principal IT Auditor

Kroll Report Remediations
The 2006 Kroll report identified significant Control Weaknesses that the City has accepted and agreed to remediate. The Enterprise Resource Planning (ERP) system is central to the remediation of many of the larger Control Weaknesses identified.

$47 Million for Project Implementation
The implementation is a high cost, high impact, and high profile project which results in high risk (The $47 Million does not include the cost of debt services)

Impacts the manner in which core city departments will perform business

As a result of the identified reasons for performing an Audit of the ERP Implementation and in accordance with the Office of the City Auditor's Fiscal Year 2009 Audit Work Plan, we are conducting an audit of the City's SAP Enterprise Resource Planning (ERP) Implementation. The Audit work plan defines the key objectives of this review as:

1) Determine if the City's key financial activities are being adequately reviewed and documented prior to the new system implementation to ensure key financial processes are properly addressed by the new system

2) Determine if the system was adequately tested prior to implementation

This update focuses on the timeframe from December 2008 to April 2009
This Audit has been in process from October to Present. However, due to significant changes in the project management and approach, this update covers the timeframe from December 2008 to April 2009, from the point SAP became the implementer for the project to the completion of the first cycle of Integration Testing for phases one and two

Scope & Methodology

- We are conducting this performance audit in accordance with generally accepted government auditing standards.

- Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives.

- We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives

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Risk Categorization (Based on Potential Project Impact)
Risk is categorized by the level of potential impact to the implementation of the ERP system and the services the system is designed to provide when implemented

Audit Project Participation & Risk Evaluation
The Auditor attends weekly technical and Project Advisory Committee meetings to help gauge what areas of the project are being adequately addressed, and what areas may not sufficiently be on the project team's "radar"

Risk Approach Priority
The Auditor proceeds with the audit plan unless a higher risk area becomes evident. When this occurs, the higher risk item is addressed first

This is not a typical Audit, in that the issues are identified prior to impacting the project, and management has an opportunity to remediate the issue before it could become one.

Audit identifies items that would become issues if not addressed
•To support this objective, we are approaching the audit using a Risk Based Approach tied to the Project Schedule to identify issues early so they can be corrected prior to go-live

•We will not be able to look at everything during the implementation, but will complete the ERP audit plan as we are able, after higher risk items have been addressed.

•The auditor reviews a component of a Category, and once he gains sufficient confidence that risks are being addressed he will:

  •Document the current status

  •Save the evidence

  •Complete the section after the Higher Risk items are addressed

We have scoped the above ten categories as high risk areas to review during the implementation

Identified Risk Categories

Primary Review Categories	Addresses areas such as:
6) SAP Security	Security Implementation Strategy, Governing Documents, Role Mapping, Access Controls, Process Controls
7) Reporting	Roll-out Strategy, Requirements prior to go-live, post go-live support and roll-out
8) Cut-Over & Stabilization	Strategy, Support Level Requirements & Delivery Methodology
9) City Training & Communication	Training Roll-out, Methodology, Key Areas Addressed
10) Demising Systems	Historical Data Storage, Access, System Phase Out

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Issue resolution at the frontline staff level when possible
We initially approach each potential issue with the appropriate section team lead

High risk issues, based on potential impact to project, are brought to management's attention
If the issue is considered a high risk, and not resolvable at the lead level, the auditor discusses the issue with the Project Director

Escalated high risk issue communication
High Risk Issues are communicated defining the Condition, Criteria, Cause, and Effect as well as audit's recommendation

Issue remediation process
We then meet with management to make sure identified audit concerns are sufficiently remediated or mitigated

Identified Issues

#	Identified Issues (Post Axon)	Remediation Progress
1)	Change of Scope for Accounts Receivable (AR) to a "Pilot" Implementation	The project team is working with SAP to create an amendment to the SOW for a "core AR implementation"
2)	Vague Deliverable Definitions	Project management has provided audit with a deliverable definition document, which audit is in the process of reviewing
3)	SAP Security Implementation Strategy Missing Components	Management is in the process of addressing the recommended areas in the Strategy document
4)	SAP Security Policy Missing Components	Management is in the process of addressing the recommended areas in the Policy document

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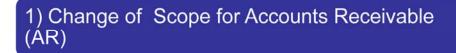
Identified Issues
While performing audit's review up to Integration Testing, Cycle 1 – Audit has identified the following issues and communicated the risk of each item to the project management team

Issue Focus
We have attempted to find the "core" of each issue, and focus on the cause of the issue that needs to be addressed. This allows for more effective and timely remediation.

Identified Issues

#	Identified Issues (Post SAP)	Remediation Progress
5)	Role Mapping Segregation of Duties (SOD) Conflict Mitigation Strategy	Management has provided their Mitigation Strategy, Audit is in the process of reviewing it
6)	Insufficient Master Service Agreement (MSA) defining Service Level Agreement (SLA) Criteria & Requirements.	The Office of the CIO and SDDPC are in the initial stages of updating the "Operating Agreement" to more adequately meet the City's & DPC's requirements. Expected timeframe for the new MSA will be Fall 2009
7)	Late Milestone Deliverables	Remediated - Milestone deliverables have been signed and approved through March 09, the auditor has reviewed the approvals, but is in the process of reviewing the deliverables
8)	Lack of SLA Governing SAP Contract	Remediated - An SLA was approved on March 4th, 2009 and is posted on the City Website

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We will go into more detail for each issue in the following slides. Please note that these issues are current to April, and that the issues have been in the process of remediation after this reporting period.

1) Change of Scope for Accounts Receivable (AR)

The AR implementation as defined within the current Statement of Work (SOW) does not meet the business requirements of the City

Audit recommended the creation of an implementation plan for a complete solution

Management advised they were aware of this issue, and are creating an Amendment to the SOW for the implementation of a core AR module

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The AR implementation as defined within the Statement of Work (SOW) does not meet the business requirements of the City
The current Statement of Work (SOW) states that "AR will be implemented on a pilot basis for one CoSD department (department to be determined) six months after the initial Go- Live"
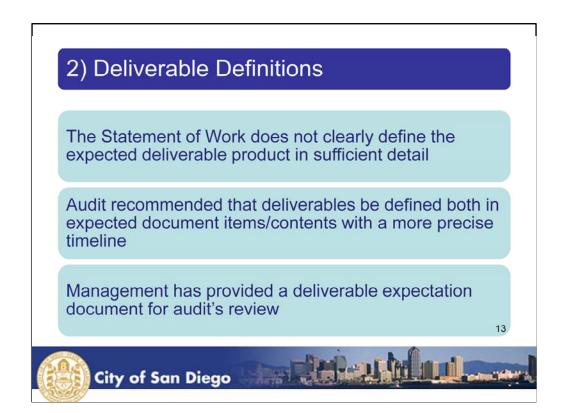
This presents an incomplete Accounts Receivable solution to be addressed at a later date

If not corrected, the risks include:
•Potential failure to meet initial ERP objectives as defined in the project charter
•Future costs to remediate
•Additional complications due to running the legacy system in parallel

AR Amendment to SOW is in process to implement a complete solution
The City, SAP and Audit agree that implementing AR in this manner will not be sufficient to meet the City's needs. Therefore, project management is currently working with SAP to amend the SOW for implementation of a Core AR module to replace the current AR system

The Statement of Work (SOW) does not clearly define in sufficient detail the expected deliverable product

If not corrected, the risks include:
• Missed or inadequate deliverable items
• Delays while mapping items to the SOW after the fact
• The mandatory acceptance of a deliverable not reviewed and approved within the five business day allowance defined in the Statement of Work

Management has provided a deliverable expectation document for audit's review
The Project Management Team has created a deliverable expectation document to define the content of each future deliverable. The auditor is in the process of reviewing the document.

3) SAP Security Implementation Strategy

The project is missing components of a comprehensive, unified, and concise Implementation Security Strategy

Audit recommended creating a comprehensive and unified security strategy which will tie into the security goals of the City's IT organization

Management is in the process of addressing the recommended areas in the Strategy document

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A comprehensive, unified, and concise Security Strategy has not been provided
Audit has reviewed the security planning information provided and has found that the team is missing components for a comprehensive, unified, and concise strategy for the implementation of Security within the SAP implementation

If not corrected, the risks include:
• Additional time and resources required to rework Security aspects during the implementation
• An inadequate and incomplete security solution
• Insufficient and ineffective use of the security features provided within SAP
• A reactive and segmented approach to security implementation and management

Management is in the process of addressing the recommended areas in the Strategy document
Management is in the process of completing this missing components for a comprehensive, unified and concise SAP security strategy that will map to the City's strategy. The current blueprint document will be expanded to include the recommended areas and complete security strategy.

4) SAP Security Policy

An SAP Security Policy is missing components addressing and defining key areas of security

Audit recommended creating a Security Policy defining key areas of security

The OneSD Team is in the process of creating a Security Policy addressing the recommended key areas of security

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An adequate SAP Security Policy does not exist
Currently, the Security team has drafted a "Security Guideline" document that describes the general principles of security, but is missing components to address several primary areas of security with sufficient detail to configure the system security according to defined City requirements.

If not corrected, the risks include:
•Missed Controls/Security Requirements designed into the system
•Inadequate System Security
•Non-compliance with City Security Standards
•Additional specialist/contractor hours spent correcting non-compliant security configurations, ultimately resulting in additional costs

The OneSD Team is in the process of creating a Security Policy addressing the recommended key areas of security
Management has provided a high level remediation plan and is in the process of addressing the missing components for a Security Policy that will tie into the overall SAP Security Strategy and map back to the City Security Policy.

A documented global strategic plan and methodology does not exist to address the mitigation of Segregation of Duties (SOD) conflicts

If not corrected, the risks include:
• A wide spectrum of mitigation methodologies without uniform resolutions
• Additional overhead required to manage and track SOD conflicts, resulting in additional costs
• Overly complex methods of managing conflicts
• Inability to effectively manage conflicts
• Inadequately controlled conflict mitigation

The OneSD Team has provided a draft SOD Mitigation Strategy for Audit's review
Audit is in the process of reviewing the SOD Mitigation Strategy

Master Service Agreement (MSA) currently does not define Service Level Agreement (SLA) criteria & requirements to ensure City required service levels are met
SLA's for approved years have been consistently signed late in the Fiscal Year. SLA's define criteria for SDDPC's management of contracts as well as support levels including those of SAP. This further impacts the project as Future SLA's will define service levels for SAP Technical Support.

If not corrected, the risks include:
•Untimely Service Level Agreements (defining expected Service Levels such as SAP Help Desk response time)
•Inability to mitigate risk of knowledge loss and retraining, specifically regarding SAP knowledge transfer from the implementation
•Inadequate governance over IT services provided to the City

Management has a remediation plan and is in the initial stages
The Office of the CIO and SDDPC are in the initial stages of updating the MSA to more adequately meet the City's & DPC's requirements. Expected timeframe for the new MSA will be Fall 2009.

Conclusion

During the course of our review from December 2008 to April 2009, Audit has identified eight risk issues

Of those, two have been completely remediated and reviewed prior to April, two have been submitted to audit for review, the MSA is scheduled to be completed next fiscal year, and management is in the process of remediating the remaining three issues

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City\OneSD Response to Audit of SAP ERP System

June 15, 2009

Nader Tirandazi, Financial Management Director and
Interim Chief Information Officer
Debra Bond, OneSD Project Director
Howard Stapleton, Deputy Director, Office of the CIO

Background

- In January 2009, Internal Audit began participation in OneSD to give input to the implementation.

- OneSD provided and continues to provide unrestricted access to Internal Audit – documents, shared network drives, system test environments, team lead meetings, and other meetings.

- Internal Audit has had the unique opportunity to observe this high-intensity, large-scale project first hand, and in real-time.

Change of Scope for Accounts Receivable (AR)

- SOW change planned for July based on roadmap analysis for implementing AR for General Fund and Enterprise Departments.

- Analysis will evaluate the entire City AR implementation. Impacts include Water Department billing.

- Results of the analysis will determine the AR SOW detail and the City design and implementation of AR.

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Deliverable Definitions

- The SAP Statement of Work includes the list of project milestone deliverables.

- In February 2009, the OneSD PMO identified deliverables that required further description.

- The OneSD PMO added descriptive information to all deliverables for clarification.

- Completed.

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Security Strategy and Policy

- According to SAP implementation methodology, the Policy and Strategy documents would not be expected to be in a final state at the time Internal Audit identified their concerns.

- Internal Audit reviewed a work-in-progress and OneSD communicated that the plan was a draft, not yet completed.

- Compliance and integration with the City's enterprise IT security policies and standards is part of the OneSD implementation strategy.

- The OneSD team planned approach is to finalize the documents to contain all required information.

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Role Mapping, Separation of Duties (SOD) Mitigation Strategy

- The OneSD security team has documented process flows for assignment of roles and mitigation of separation of duties conflicts both pre and post go-live. These have been provided to Internal Audit.

- The City considers internal controls, role mapping, and SOD mitigation of critical importance.

- The GRC (Governance Risk Compliance) module of SAP is being implemented to identify, remediate, and monitor SOD.

- RSM McGladrey, an outside consultant, is reviewing the internal control implementation.
  - Attending meetings
  - Reviewing documentation and process flows

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Master Services Agreement (MSA)

- This is a Citywide item not specific to OneSD.

- Well defined service levels and performance metrics will help ensure the effective management of the ERP system after go-live.

- In process of being completed by the Office of the CIO.

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Milestone Deliverables

- Categorized as remediated.

- Milestone deliverables have been formally accepted through March.

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SLA Governing SAP Contract

- Categorized as remediated.

- The Citywide SLA between the City and SDDPC was approved in March 2009.

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Summary

- Remediated
  - Milestone Deliverables
  - SLA Governing SAP Contract

- Completed Pending Review of Internal Audit
  - Deliverable Definitions
  - Role Mapping SOD

- In Progress
  - Change of Scope for AR: July
  - Security Strategy and Policy: July
  - Master Services Agreement (MSA): Fall 2009

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THE CITY OF SAN DIEGO

MEMORANDUM

DATE: June 12, 2009

TO: Eduardo Luna, City Auditor

FROM: Mary Lewis, Chief Financial Officer
          Nader Tirandazi, Financial Management Director and Interim CIO
          Debra Bond, OneSD Project Director

SUBJECT: OneSD Audit Responses

In January 2009, the OneSD team welcomed Internal Audit's request to audit the project in a proactive manner to provide input on the implementation process. It did not constitute a traditional audit, but rather an opportunity for Internal Audit and the OneSD team to work collaboratively to review the ongoing status of internal controls being implemented in SAP. Since that time, the OneSD team has provided unrestricted access to documents and data, shared network folders, SAP landscapes for development and test, as well as participation in weekly team lead and integration meetings where issues are identified and discussed in a candid and open environment. Internal Audit has had the unique opportunity to observe this high-intensity, large-scale project first hand, and in real-time.

Response to Report Item #1 – Change of Scope to Accounts Receivable (AR):
This item was initially raised in January and discussed by the OneSD team during a series of meetings in February and March. The implementation as currently scoped in the SAP Statement of Work (SOW) indicates that AR will be implemented on a pilot basis for one department. It is the City's intent to modify the SOW to indicate that the AR implementation will be designed to replace the City's general accounts receivable system, called ARIS. The City is awaiting information from an analysis to be done in June, which will define the appropriate SAP configurations to be used for the AR implementation, and therefore will be included in the revised SOW. There is not anticipated to be any project delay due to the timing of the SOW modification.

Response to Report Item #2 –Deliverable Definitions:
In February, at the request of the OneSD Project Management Office (PMO), SAP and the City OneSD team created a document describing each outstanding deliverable as outlined in the Statement of Work. The identification of this item came about based on the challenges discovered by the OneSD team in documenting the results of work performed within the context of one of the deliverable titles listed in Exhibit 6. The OneSD City and SAP team agreed upon and documented the content of each future deliverable.

Response to Report Item #3 – SAP Security Implementation Strategy and Response to Report Item #4 – SAP Security Policy:
During an April meeting with OneSD and Internal Audit, the draft OneSD security documents were reviewed and it was determined that while the documents were substantially complete, they needed to be reworked into one Strategy document and one Policy document. It was acknowledged that the OneSD document reviewed by Internal Audit were draft versions, planned to be completed iteratively as the project progressed.

The OneSD team has been working and continues to work with the Department of IT on the policies and strategies to ensure compliance with citywide security policy and standards. OneSD and the Department of IT are also ensuring that documented SAP policies and standards link to the City's enterprise IT policies and standards in the areas of user provisioning, security, and system-to-system interfaces.

The OneSD team worked toward finalizing documents that would contain the additional information identified by Internal Audit. It is noteworthy, from an SAP implementation methodology perspective, that the Policy and Strategy documents would not have normally been in a final state at the time Internal Audit identified their concerns. It is from a timing perspective that the PMO does not agree with this item. The OneSD team is confident that the concerns raised by Internal Audit will be addressed in the final security documents.

Response to Report Item #5 – Role Mapping SOD Mitigation Strategy:
A universal methodology does exist to address a variety of SOD conflicts. The methodology was articulated and later communicated in writing to Internal Audit. The GRC module of SAP was purchased by the City to identify, remediate, and monitor separation of duties. The OneSD security team has documented process flows for assignment of roles and mitigation of separation of duties conflicts both pre and post go-live.

Response to Report Issue #6 – Insufficient Master Service Agreement (MSA):
From the OneSD perspective, we understand that this is an issue that impacts citywide IT services from SDDPC and is not specific to the OneSD project. Well defined service levels and performance metrics will help ensure the effective management of the support vendor after go-live.

Response to Report Issue #7 – Late Milestone Deliverables:
This is the described outcome of Report Issue #2 described above. The approach taken to complete the deliverable is not different than defined in the Statement of Work. The deliverable itself was not well defined. After a clear understanding was gained, the deliverable was completed and approved in March. All OneSD deliverables have been approved through the Internal Audit evaluation period.

Response to Report Item #8 – SLA Governing SAP Contract:
The Citywide SLA between the City and SDDPC was approved in March 2009.

cc: Honorable Mayor Jerry Sanders
        Honorable City Council Members
        Jay M. Goldstone, Chief Operating Officer
        Andrea Tevlin, Independent Budget Analyst