



**SYSTEM ACCESS AND
SEGREGATION OF DUTIES
REVIEW**

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Finance and Administration Committee
City of Springfield
840 Boonville Avenue
Springfield, Missouri 65802

Re: System Access and Segregation of Duties Review

Dear Committee Members:

In conjunction with our overall engagement to provide internal audit services to the City of Springfield (the "City"), we have completed our review of system access and segregation of duties to the Oracle and Permit Plan applications. Our services were performed in accordance with the International Standards for the Professional Practice of Internal Auditing, as promulgated by the Institute of Internal Auditors (IIA).

The accompanying report includes an Executive Summary, our Observations and Recommendations, and two supporting Appendices. Because the procedures performed in conjunction with the review are more limited than would be necessary to provide an opinion on the system of internal accounting controls taken as a whole, such an opinion is not expressed. In addition, the engagement did not include a detailed audit of transactions that would be required to discover fraud, defalcations or other irregularities.

This report is intended solely for the information and use of management and City Council and is not intended to be, and should not be, used by anyone other than the specified parties. The City of Springfield's external auditors may be provided with a copy of this report in connection with fulfilling their responsibilities.

We would like to express our gratitude to all employees involved with this project. Each person involved was accessible and responsive to our requests for information.

Sincerely,

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CITY OF SPRINGFIELD
SYSTEM ACCESS AND SEGREGATION OF DUTIES REVIEW

Table of Contents

	Page
Executive Summary	1
Observations and Recommendations	3
Process Improvement Opportunity	6
Appendix A – System Administrator Conflicts	7
Appendix B – Finance and Purchasing Employee Conflicts	8

CITY OF SPRINGFIELD

System Access and Segregation of Duties Review

Executive Summary

Objectives

We completed our review of the City's Oracle and Permit Plan applications and the associated internal process/controls. The objectives of our review were to:

1. Verify adequate restrictions and segregation of access levels have been established over the finance and purchasing processes.
2. Evaluate the system access process managed by the Information Systems Department.
3. Develop recommendations to improve procedures and segregation/access levels in these processes.

The City utilizes Oracle's E-Business Suite Public Sector edition R12 as its primary business application. They are currently utilizing the application for Accounting, Human Resources, Inventory, Payroll, Purchasing, Revenue, and Treasury. The City recently upgraded to version R12.

The City also utilizes Permit Plan (also referred to as Tidemark) to manage the workflow for issuing city permits. The application was initially designed and supported by Tidemark, which since has sold the source code to the City of Springfield which now maintains the application themselves. The City uses the application to track each step in the process for issuing a permit and has developed four distinct workflows for project permits, planning permits, public works permits and fire permits.

Our review included an evaluation of the adequacy of system access and segregation of duties for the Permit Plan application along with Oracle purchasing and finance functions. Our procedures included:

- In person interviews with Information Technology and related personnel. The objective of these interviews was to gain an understanding of the user provisioning process and how access is administered to users and define/identify key application access.
- Inspection of current access levels in the purchasing and finance areas to determine if access levels to key functions (e.g. create a journal entry) are appropriate and segregated (e.g. post a journal entry vs. open accounting period).

Best Practices

Based on our review, the following procedures are in place and, in our opinion, represent a best practice:

- Executive management's access to Oracle R12 and Permit Plan is limited and consists mainly of read only access.
- Supervisor approval is obtained and documented for all requests for access and must be obtained prior to establishment of new user accounts in each application.
- Management performs annual reviews of access within the Oracle application.
- Existing access is reviewed for need when a user requests new access due to a change in job responsibilities.
- Within the Permit Plan application, all transactions and entries are time and user stamped to identify when and who processed the transaction or entry.

CITY OF SPRINGFIELD
System Access and Segregation of Duties Review
Executive Summary

Observations and Recommendations

We determined there were adequate internal controls in place over the processes listed above; however, we noted the following areas where internal controls could be enhanced.

Oracle

- Oracle R12 System Administrators have wide spread access into the application. Segregation of duties conflicts were noted for System Administrators in nine of the 11 conflicts reviewed.
- Review of finance and purchasing employees' access in Oracle noted various segregation of duties conflicts.

Both of these observations are highlighted in Appendices A and B and were discussed in detail with management during the internal audit.

Permit Plan

- There are five Permit Plan System Administrators who have access to both the Permit Plan application and the database supporting the application.
- Seven users possess access within Permit Plan to create and approve fire permits.
- There are two generic System Administrator accounts (Permit DBA and Tidemark DBA) setup for the Permit Plan application. System Administrator access should be transferred to a user account so that there would be traceability for any changes made to the application.

All observations and recommendations were discussed with management. Details are noted in the report attached immediately hereafter.

CITY OF SPRINGFIELD
SYSTEM ACCESS AND SEGREGATION OF DUTIES REVIEW
OBSERVATIONS AND RECOMMENDATIONS

	Process/Procedure	Observation and Risk	Recommendation	Management Response
Permit Plan Application				
1	Verify Permit Plan System Administrators access is appropriately restricted and segregated.	<p>Observation: We noted five different System Administrators with access to the Permit Plan application who also have access to make changes to the database supporting the Permit Plan application.</p> <p>Risk: Administrators could make changes that affect how the Permit Plan application processes transactions without going through the formal change management process.</p>	Segregate users who have write database access and application administrator access.	Five people have administrative access to the database but only one person has access to the Permit Plan PowerBuilder application code and is able to make changes to that code. The database access is necessary to support the other Powerbuilder-based applications.
2	Verify Permit Plan users with access to approve fire permits do not also have access to create fire permits.	<p>Observation: Seven active employees within the Fire Department have access to both create and approve fire permits.</p> <p>Risk: Inappropriate fire permits could be created and approved.</p>	Users with access to approve permits should have their access to create permits removed.	The ability to create Fire permits has been removed from all 7 employees. They now have the ability to approve, but not create permits.

CITY OF SPRINGFIELD
SYSTEM ACCESS AND SEGREGATION OF DUTIES REVIEW
OBSERVATIONS AND RECOMMENDATIONS

	Process/Procedure	Observation and Risk	Recommendation	Management Response
3	Verify generic system accounts are appropriately restricted.	<p>Observation: There are two generic System Admin accounts setup for the Permit Plan Application. Review of these accounts found multiple users have access to the accounts.</p> <p>Risk: A lack of traceability may exist for any changes made in the application.</p>	System Admin access should be transferred to individual user accounts to create traceability for any changes made in Permit Plan.	Currently there is no tracing functionality active on the COSAPPS Oracle database. We will explore the use of Active Directory permissions as the authentication for Powerbuilder applications, including Permit Plan.

CITY OF SPRINGFIELD
SYSTEM ACCESS AND SEGREGATION OF DUTIES REVIEW
OBSERVATIONS AND RECOMMENDATIONS

	Process/Procedure	Observation and Risk	Recommendation	Management Response
Oracle				
4	Verify Oracle R12 System Administrators access is appropriately restricted and segregated.	<p>Observation: System Administrators, who should have limited business process access, were found to have segregation of duties conflicts on 9 of the 11 identified conflicts reviewed. (See Appendix A for detail)</p> <p>Risk: Unmitigated segregation of duties conflicts could allow a System Administrator the ability to complete all or part of a business process without proper oversight.</p>	Remove unnecessary business process access for System Administrators.	System Administrators will inactivate any functional responsibility in Production assigned to their accounts during the times the responsibility is not needed for investigating production problems. A report is being created which allows management to audit the responsibilities assigned to System Administrators at any given time. We will run this report quarterly to review permissions and ensure this is being followed.
5	Verify key Oracle R12 purchasing and finance job duties are appropriately restricted and segregated within the application.	<p>Observation: There are 10 employees with finance related segregation of duties conflicts, and 33 employees with purchasing related segregation of duties conflicts. These conflicts spanned 7 of the 11 conflicts tested. (See Appendix B for detail)</p> <p>Risk: Unmitigated segregation of duties conflicts could allow a user the ability to complete all or part of a business process without proper oversight.</p>	Reduce the number of segregation of duties conflicts through reduction in system access. Where reduction in system access is not possible, management should look to implement/link manual business controls to mitigate the risk of the identified segregation of duties conflicts.	<p>New more restrictive application responsibilities with menu and function access have been created to address the conflicts that were identified.</p> <p>These new responsibilities will be implemented fully by July 30, 2015.</p>

**CITY OF SPRINGFIELD
 SYSTEM ACCESS AND SEGREGATION OF DUTIES REVIEW
 PROCESS IMPROVEMENT OPPORTUNITY**

We noted the following process improvement opportunity during our review. Process improvement opportunities do not represent internal control weaknesses, but rather, ways that the process could be more efficient.

	Observation	Recommendation	Management Response
1	There are four terminated users on the Permit Plan application users list. Further inquiry identified the users either did not have Oracle system accounts or their Oracle system accounts had been suspended which prevented the users from being able to access the Permit Plan application. However, the user list for Permit Plan needs to be reviewed to remove terminated users.	Remove application IDs for terminated users in the Permit Plan application.	This is being done by Permit Plan application system administrator. We have created an electronic notification that is sent to the Permit Plan administrator when employees are terminated.

CITY OF SPRINGFIELD
SYSTEM ACCESS AND SEGREGATION OF DUTIES REVIEW

APPENDIX A – System Administrator Conflicts

System Administrator access was noted for the following Segregation of Duties conflicts*:

Vendor Master Maintenance & Vendor Invoice Entry
Vendor Master Maintenance & Accounts Payable Release
Vendor Master Maintenance & Accounts Payable Payment Run
Purchase Order Entry & Accounts Payable Payment Run
Vendor Invoice Entry, Accounts Payable Release, & Accounts Payable Payment Run
Accounts Payable Release & Goods Receiving
Accounts Payable Release & Journal Entry Post
Journal Entry Enter & Journal Entry Post
Journal Entry Post & Open and Close Periods

* A detail listing of users with unnecessary access was provided to management during the review.

**CITY OF SPRINGFIELD
SYSTEM ACCESS AND SEGREGATION OF DUTIES REVIEW**

APPENDIX B – Finance and Purchasing Employee Conflicts

<u>Conflict</u>	<u>Number of Users with a conflict*</u>
Vendor Master Maintenance & Vendor Invoice Entry	2
Vendor Invoice Entry, Accounts Payable Release, & Accounts Payable Payment Run	2
Accounts Payable Release & Goods Receiving	3
Accounts Payable Release & Journal Entry Post	1
Journal Entry Enter & Journal Entry Post	6
Journal Entry Post & Open and Close Periods	4

* A detail listing of users with these conflicts was given to management during the review.