

**AMANDA System Follow-Up Audit
July 2010**

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AMANDA System Follow-Up Audit



Office of the City Auditor

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Project #09-10

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Executive Summary

*17 of 29
recommendations were
fully implemented*

Fully Implemented

- *AMANDA upgrade*
- *Tracking of fire permits*
- *Limited ability to alter fees*
- *Logoff feature on AMANDA website*
- *Negative trust account balances*

Not Implemented

- *Systematic approval of voids*
- *Changes to prior records*

The City Auditor's Office has completed a follow-up to the August 2008 AMANDA System Audit. The follow-up audit was conducted 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. The objective of the follow-up was to determine the implementation status of prior audit recommendations.

Management concurred with 21 of the 29 recommendations presented in the initial AMANDA System Audit. The City Auditor's office noted that 17 of the 21 recommendations were fully implemented, two were partially implemented and two were not implemented.

Management fully implemented recommendations related to work order prioritization, audit log triggers and conflicting system administrator duties. Additionally, AMANDA was upgraded as recommended and management resolved issues related to tracking fire permits and termed employee access. Management limited user transactions and the ability to alter fees and delete processes. Also, with vendor assistance, a logoff feature was added to the website and issues with negative trust account balances and automated refunds were resolved. Management partially implemented recommendations related to encrypting sensitive information and limiting administrator access.

The recommendations not implemented concerned management approval of voided transactions and master file changes that alter prior records. Although management did not implement the audit recommendation related to systematic approval of voided transactions, the City Auditor's Office noted that other compensating controls were established. Management indicated that the recommendation related to altering prior records was not implemented due to AMANDA configuration.

Audit Scope and Methodology

The City Auditor's Office reviewed activity related to the AMANDA system since August 2008, the initial audit release date. The following methodology was used in completing the audit.

- Interviewed staff within the Information Technology (IT) and Community Development and Planning (CD&P) Departments responsible for and knowledgeable of actions taken to implement initial audit recommendations
- Reviewed updated policies and procedures

Status of Prior Audit Recommendations

Fully Implemented Recommendations

Recommendation:

The Information Technology Director should ensure that future AMANDA system testing is conducted and retained in accordance with the newly adopted testing standards.

Management's Response:

Concur. This practice has been in place since fall 2007.

Target Date: Complete
Responsibility: Gary Allison, Assistant IT Director

Audit Comment:

It is common in post-implementation audits to review the adequacy of testing conducted prior to system implementation. Although new testing standards have been implemented, adequate documentation of testing conducted prior to system implementation was not available for review. By fall 2007, when the new testing standards were established, both Phases I and II of AMANDA had already been implemented.

Implementation Status:

Fully Implemented. The City Auditor's Office located sample testing worksheets for various sections of AMANDA on the Information Technology portal, and was able to confirm that testing was performed and documentation retained.

Recommendation:

The Community Development and Planning Director should require that the ability to alter permit fees is restricted.

Management's Response:

Concur. Manual processes are in place that control for potential abuses. The cashier must react to circumstances when fee amounts have to be modified in order to issue a permit (i.e. presented checks made out for the wrong amount, 380 agreements that waive permit fees, partial payments, changes in construction valuation, etc.). All payment transactions are accompanied by a paper receipt that is provided to the paying customer. CD&P will conduct business analysis to determine feasibility of restricting fee modification authority to cashiers and selected managers.

Target Date: September 2009
Responsibility: Bruce Payne, Assistant Director CD&P

Implementation Status:

Fully Implemented. The ability to alter permit fees has not been completely restricted, but has been limited to cashiers, the cashier supervisor and power users.

Recommendation:

The Information Technology Director should require that the IT Systems Administrator update former employees' AMANDA access status rights to "inactive."

Management's Response:

Concur. IT staff have reviewed current AMANDA user access, and made changes to AMANDA access rights to disable those users who are no longer City employees.

Target Date: Complete
Responsibility: Gary Allison, Assistant IT Director

Implementation Status:

Fully Implemented. The City Auditor's Office noted that access rights have been updated to "inactive" for terminated employees.

Recommendation:

The Information Technology Director should ensure that in the future, the IT System Administrator revokes terminated employees' access to AMANDA, upon proper notification.

Management's Response:

Concur. IT System Admin[istration] staff now receives a biweekly report/notification from Lawson regarding newly terminated employees. This employee list is compared against current AMANDA users, and appropriate action to de-activate specific user accounts is taken.

Target Date: Complete
Responsibility: Gary Allison, Assistant IT Director

Implementation Status:

Fully Implemented. IT implemented a process to revoke access rights to AMANDA for terminated employees. The process includes steps to identify employees in pre-term status and notify a list of critical people including the IT Help Desk and system administrators. The City Auditor's Office tested a sample of authorized users and noted that users were current City employees.

Recommendation:

The Community Development and Planning Director, in conjunction with the Information Technology Director, should request that the vendor expedite the work order related to negative trust account balances.

Management's Response:

Concur. This issue was initially elevated to the vendor and the vendor provided an initial finding of resolution. However, subsequent testing reveals that the issue has not been completely resolved. This issue has been elevated to the vendor for a second time for resolution. This is a software programming issue and not a configuration issue. Staff is awaiting the solution and will take steps to address approval authority for overriding trust accounts once the vendor has responded.

*Target Date: Spring 2009
Responsibility: Gary Allison, Assistant IT Director*

Implementation Status:

Fully Implemented. All trust accounts currently have a positive balance. According to CD&P management, this issue was corrected by changing the button permission which deleted the override ability.

Recommendation:

The Information Technology Director should assign appropriate staff to verify that audit log triggers are turned back on after system upgrades and enhancements.

Management's Response:

Concur. IT System Admin[istration] staff will ensure that any and all future AMANDA upgrades that involve changes to the system database structure account for the turn-off and turn-on of audit triggers as part of any future AMANDA project plan.

*Target Date: Complete
Responsibility: Gary Allison, Assistant IT Director*

Implementation Status:

Fully Implemented. The City Auditor's Office was unable to delete files during testing, indicating that audit log triggers are turned on and functioning properly.

Recommendation:

The Community Development and Planning Director, in conjunction with the Information Technology Director, should ensure security permissions are re-configured to limit users to system transactions that are related to their assigned job duties.

Management's Response:

Concur. Manual procedures are in place to control for any unauthorized system transactions. Any employee who is signed on and uses the payment button is recorded in the daily report. Additionally, only employees designated as cashiers have access to the cash drawer and can make change from it. The cashier's station is in public view and is situated in front of the supervisor's office, and the cash drawer is locked and requires a key to gain access. The department will conduct business analysis to reconfigure AMANDA to limit system transactions to assigned job duties.

*Target Date: September 2009
Responsibility: Bruce Payne, Assistant Director CD&P*

Implementation Status:

Fully Implemented. Security permissions have been reconfigured and user transactions are limited based on job duties.

Recommendation:

The Community Development and Planning Director, in conjunction with the Information Technology Director, should ensure that AMANDA is upgraded as needed.

Management's Response:

Concur. The regular upgrading of AMANDA is an enterprise issue and is managed by the IT Department. AMANDA was successfully upgraded to version 5.4.4 on July 13, 2008, after more than six months of preparatory work.

*Target Date: Complete
Responsibility: Gary Allison, Assistant IT Director*

Implementation Status:

Fully Implemented. A technical upgrade has been completed and the City currently uses Version 5.4.4.28

Recommendation:

The Community Development and Planning Director, in conjunction with the Information Technology Director, should require that AMANDA work orders be prioritized and communicated to the appropriate person(s) in a timely manner.

Management's Response:

Concur. This finding is a reference to the priority ranking given to work orders in Information Technology's Magic Work Order system, which is separate and distinct from the process of prioritizing work orders emanating from departments utilizing AMANDA. CD&P has had a process of interaction with IT since March 2007 to properly characterize and prioritize work orders.

Target Date: *Implemented in March 2007*
Responsibility: *Bruce Payne, Assistant Director CD&P*

Implementation Status:

Fully Implemented. The City Auditor's Office noted that the Community Development and Planning Department and the AMANDA Information Technology Support Team meet weekly to prioritize work orders.

Recommendation:

The Community Development and Planning Director should require that the Community Development and Planning System Analyst monitor work order status and report any issues that are outstanding for an extended period of time to upper management within the Community Development and Planning Department in a timely manner.

Management's Response:

Concur. This has been the practice of CD&P since March 2007.

Target Date: *Implemented in March 2007*
Responsibility: *Bruce Payne, Assistant Director CD&P*

Audit Comment:

Although management indicates that a priority ranking system has been used since March 2007, documentation submitted to the City Auditor's Office indicated that AMANDA work orders were not prioritized. A Magic work order report provided to the City Auditor's Office did not include prioritization data. In addition, a work order report from the vendor's website indicated that work orders had not been prioritized by City staff.

Subsequent to the completion of audit fieldwork, the City Auditor's Office provided a more detailed Magic work order report that included prioritization data. The majority (295 of 299) of the work orders included on the report were assigned a "medium" priority. The remaining work orders were assigned a "high" priority.

Although it appears that the ability to prioritize work orders in Magic exists, it was not evident to the City Auditor's Office that such prioritization was communicated to the vendor or facilitated the timely resolution of work orders.

Implementation Status:

Fully Implemented. IT provided a report of open work orders showing that each work order is categorized as low, medium, or high. IT also confirmed that there are weekly meetings between CD&P and the AMNADA IT Support Team to determine priority.

Recommendation:

The Information Technology Director should segregate conflicting duties in the system administrator function and ensure compensating controls exist if resource allocations limit segregation of duties.

Management's Response:

Concur. IT Management has reviewed roles and responsibilities with the AMANDA system administration staff and has completed changes required.

Target Date: Complete
Responsibility: Gary Allison, Assistant IT Director

Implementation Status:

Fully Implemented. Roles and responsibilities within AMANDA have been reviewed and several changes have been made ensuring that conflicting job duties no longer exist without compensating controls.

Recommendation:

The Information Technology Director should require that future AMANDA fixes be tested in accordance with the newly adopted testing standards.

Management's Response:

Concur. Improved testing and documentation procedures were implemented in the fall of 2007 and will be followed on all future upgrades, patches, and system release implementations.

Target Date: Completed Fall 2007
Responsibility: Gary Allison, Assistant IT Director

Implementation Status:

Fully Implemented. The City Auditor's Office was able to obtain a sample worksheet to show what is used for testing and confirmed that testing was performed and proper documentation was retained.

Recommendation:

The Community Development and Planning Director, in conjunction with the Information Technology Director, should seek assistance from the vendor and System Administrator to enhance AMANDA so that required permitting processes cannot be deleted.

Management's Response:

Concur. In order to maximize accountability, CD&P will conduct business analysis to evaluate sign-off of unneeded permitting processes during application review instead of their deletion in advance of the review.

Target Date: September 2009
Responsibility: Bruce Payne, Assistant Director CD&P

Implementation Status:

Fully Implemented. CD&P has revised access permissions and has restricted the ability to delete to managers and the Building Official.

Recommendation:

The Community Development and Planning Director should request assistance from the vendor and System Administrator to enhance AMANDA by limiting the ability to “sign off” or reassign permitting processes to designated employees.

Management’s Response:

Concur. CD&P will conduct business analysis to determine the complexity of the problem and resources required to correct.

Target Date: September 2009
Responsibility: Bruce Payne, Assistant Director CD&P

Implementation Status:

Fully Implemented. The City Auditor’s Office noted during testing that CD&P has limited the ability to sign-off on permit processes and scheduled inspections by altering security permissions.

Recommendation:

The Community Development and Planning Director should request the vendor to enable AMANDA to process refunds for zoning related folders and discontinue the manual refund process for zoning related fees.

Management’s Response:

Concur. No examples of abuses or meaningful risks have been identified. This problem was corrected with the AMANDA upgrade to version 5.4.4.

Target Date: Complete
Responsibility: Bruce Payne, Assistant Director CD&P

Implementation Status:

Fully Implemented. AMANDA was upgraded to version 5.4.4.28 and the City Auditor’s Office noted that zoning related refunds are now processed in AMANDA and that manual refunds have been discontinued.

Recommendation:

The Fire Chief should seek assistance from the System Administrator to develop a tracking methodology for fire permits that do not reach "Issued Status" to investigate at which point in the process it failed or expired.

Management's Response:

Concur. Fire Prevention personnel will work with the AMANDA Systems Administrator, the Information Technology and the CD&P Departments to develop and test the needed program changes to alleviate the issues. The auditor was advised that most, if not all of this issue is anticipated to be resolved in AMANDA Phase 3, which is presently underway.

*Target Date: Spring 2009
Responsibility: Brian Riley, Assistant Chief/Fire Marshal*

Implementation Status:

Fully Implemented. The City Auditor's Office confirmed that phase 3.0 has been implemented and includes reports showing that a tracking methodology now exists for fire permits.

Recommendation:

The Information Technology Director should require that Information Technology staff establish a log-off feature for the AMANDA website.

Management's Response:

Concur. IT system administration staff has requested the vendor to implement a log-off feature into their web product as quickly as possible. While we believe this should be a standard feature provided by the vendor, this may be delayed if the vendor expects City of Arlington to fund the effort for making this change.

*Target Date: To be determined
Responsibility: Gary Allison, Assistant IT Director*

Implementation Status:

Fully Implemented. The City Auditor's Office confirmed that the AMANDA website includes a log-off feature.

Partially Implemented Recommendations

Recommendation:

The Community Development and Planning Director, in conjunction with the Information Technology Department Director, should ensure that: 1) business registration folders are classified as confidential; 2) sensitive information is encrypted; and 3) access limited, based on job requirements.

Management's Response:

Concur. CD&P concurs that driver's license numbers and social security numbers should be encrypted or deleted as applicable. CD&P will conduct business analysis and work with Information Technology to determine feasibility of encrypting these information fields. CD&P does not concur that the business registration folder should be classified as confidential. Wide city employee access to the business registration folder is chosen business practice. Registration status, license status, insurance status, names and phone numbers are necessary for city enforcement personnel to adequately perform their duties. In its current configuration, the general public is only able to view the name of the business, business address, business contact and business telephone number of registrants.

*Target Date: September 2009
Responsibility: Bruce Payne, Assistant Director CD&P
Gary Allison, Assistant IT Director*

Implementation Status:

Partially Implemented. Per the original audit finding, personal information in AMANDA is contained in attachments within the business registration folders. Testing conducted by the City Auditor's Office indicated that newly created files do not contain attachments. Instead, personal information is retained in access-controlled LaserFiche. It was also noted that management is in the process of converting older attachments to files to LaserFiche. While audit follow-up results indicated that this recommendation was only partially implemented, it should be noted that management fully implemented the portions of the audit recommendation for which they concurred.

Recommendation:

The Information Technology Director should limit the number of employees with administrator access (e.g., ability to change stored procedures, security settings, etc.) to a limited number of Information Technology Department employees.

Management's Response:

Concur. Information Technology system administration staff has removed this access from CD&P staff and will continually review user access rights to ensure that only designated staff (within Information Technology) have administrative access to AMANDA.

*Target Date: Complete
Responsibility: Gary Allison, Assistant IT Director*

Implementation Status:

Partially Implemented. The Information Technology Department has removed administrator access from CD&P staff. However, the City Auditor's Office noted during testing that a generic administrator account still exists.

Recommendations Not Implemented

Recommendation:

The Community Development and Planning Director should require that management level staff systematically approve voided payment transactions.

Management's Response:

Concur. CD&P controls voided transactions with the manual cash drawer balancing process. In the AMANDA environment, only same day voids are allowed. Voided transactions are printed, noted, and turned in at the end of each day to be included in the cash balance, which is reviewed by the supervisor. CD&P will perform business analysis to enable AMANDA to require supervisor approval for any prior day voided transactions, and to generate a monthly report of voided transactions.

*Target Date: September 2009
Responsibility: Bruce Payne, Assistant Director CD&P*

Implementation Status:

Not Implemented. The City Auditor's Office conducted tests indicating that prior day voids are still allowed within the AMANDA system without systematic supervisory approval. However, the City Auditor's Office noted that compensating controls exist. A general ledger report was created that identifies prior day voids in the system. Management indicated that this report is reviewed to ensure that prior day voids were not performed.

Recommendation:

The Community Development and Planning Director, in conjunction with the Information Technology Director, should ensure that the current database accommodates master file changes that do not automatically alter prior records associated with the master file. If the relational database cannot be set up to accommodate master file changes to future transactions, the user should be required to set up a new account.

Management's Response:

Concur. CD&P will conduct business analysis to determine the complexity of the problem and resources required to correct.

*Target Date: September 2009
Responsibility: Bruce Payne, Assistant Director CD&P*

Implementation Status:

Not Implemented. The Community Planning and Development Department indicated that this issue is due to the way that AMANDA is configured and may or could potentially be addressed in future versions

Do Not Concur Recommendations

Recommendation:

The Community Development and Planning Director, in conjunction with the Information Technology Director, should conduct an analysis of staffing needed to maintain the system efficiently. Budget needed to obtain the necessary staff should be communicated to City management and appropriated.

Management's Response:

Do not concur. The product, nor its support for City of Arlington is at risk. This is a budget issue primarily, which affects timeliness of support. [The] City of Arlington has been identified as having less IT support staff than other AMANDA users. While this is believed to be true, [the] City of Arlington currently supplements our IT staff level through the use of vendor support. This approach is more costly on an hourly basis, and delays support of user needs. However, it does not prevent us from meeting the needs of City of Arlington and does not pose a risk in our use of AMANDA.

*Target Date: On-going
Responsibility: N/A*

Implementation Status:

Not Applicable. Since management did not concur with this recommendation, there is no plan to implement.

Recommendation:

The Community Development and Planning Director should ensure that AMANDA is modified to require mandatory data entry to document reasons why folders are being voided.

Management's Response:

Do not concur. Permits cannot be issued and approvals cannot be obtained if the corresponding folders are voided, which eliminates any concern over the commencement of unauthorized construction activities. The person who voids project folders (i.e. permits) is tracked via their sign-on and password. While the department presently trains staff to document the reasons for voiding folders in AMANDA, the resources necessary to reconfigure AMANDA to disallow the voiding of folders without entered documentation would be prohibitive, and the results would be inconsequential.

*Target Date: No action to be taken
Responsibility: Bruce Payne, Assistant Director CD&P*

Implementation Status:

Not Applicable. Since management did not concur with this recommendation, there is no plan to implement.

Recommendation:

The Community Development and Planning Director should consider performing an analysis of existing stored procedures to ensure business rules listed in the working sheets are accurately reflected in the AMANDA application.

Management's Response:

Do not concur. There are literally thousands of stored procedures in the AMANDA system. Existing stored procedures related to specific activities are investigated when folders do not work properly or when there is a change in business practice. When/if discrepancies are found, they are corrected. CD&P chooses not to spend staff time analyzing stored procedures that are working as intended.

*Target Date: No action to be taken
Responsibility: Bruce Payne, Assistant Director CD&P*

Implementation Status:

Not Applicable. Since management did not concur with this recommendation, there is no plan to implement.

Recommendation:

The Community Development and Planning Director should require that inspectors identify non-applicable processes as such before issuing permits or closing folders.

Management's Response:

Do not concur. This is chosen business practice. The auditor's stated interest is to make AMANDA as fully automated as possible. The responsibility of insuring that the necessary minimal required inspections have been performed is delegated to the building inspector. CD&P chooses not to delegate this level of responsibility to the AMANDA system.

*Target Date: No action to be taken
Responsibility: Bruce Payne, Assistant Director CD&P*

Implementation Status:

Not Applicable. Since management did not concur with this recommendation, there is no plan to implement.

Recommendation:

The Community Development and Planning Director should determine whether the webmaster should enhance the web application to prevent users from applying for a permit for an unknown address.

Management's Response:

Do not concur. This is chosen business practice and a customer service issue. The applicant is not always aware of the correct address for the property in question. The department prefers that the applicant can initiate the permit application process which allows staff to begin processing the request. Such applications often occur when property is being platted and new addresses have not yet been assigned.

*Target Date: No action to be taken
Responsibility: Bruce Payne, Assistant Director CD&P*

Implementation Status:

Not Applicable. Since management did not concur with this recommendation, there is no plan to implement.

Recommendation:

The Community Development and Planning Director, in conjunction with the Information Technology Director, should evaluate the feasibility of enhancing AMANDA to allow contractors to submit insurance certificates as an attachment to business license renewals processed via the web. If deemed feasible, AMANDA should be enhanced to allow the renewal of business licenses via the web.

Management's Response:

Do not concur. State law requires the applicant provide the license information and city policy for drivers license and insurance, which the applicant cannot supply over the web. CD&P prefers to match the photo ID with the applicant at the time of renewal, and obtain any necessary additional qualifying information as necessary, which is most efficiently accomplished face-to-face.

*Target Date: No action to be taken
Responsibility: Bruce Payne, Assistant Director CD&P*

Implementation Status:

Not Applicable. Since management did not concur with this recommendation, there is no plan to implement.

Recommendation:

The Community Development and Planning Director should ensure that Planning staff continues its effort to limit inspection choices to those that are applicable to the inspection being requested by the web user.

Management's Response:

Do not concur. This is chosen business practice. The auditor's stated interest is to make AMANDA as fully automated as possible. However, specific circumstances related to construction activities

are not fully known at the time inspections are called for by the contractor, and inspectors encounter other needed inspections in the field that require their approval. If those potential inspections are not included as options, requested ad hoc inspections could not be performed in the field and would require the contractor to have additional interaction with the customer service representatives at City Hall in order to schedule inspections. This would be a significant customer service issue.

*Target Date: No action to be taken
Responsibility: Bruce Payne, Assistant Director CD&P*

Implementation Status:

Not Applicable. Since management did not concur with this recommendation, there is no plan to implement.

Recommendation:

The Information Technology Director should establish additional security measures for tablet computers, including a lock-out feature and hard drive encryption.

Management's Response:

Do not concur. Tablet computers currently have a network login with the same security parameters as other PC's within the City, including a lock-out feature if too many attempts are made unsuccessfully. In addition, a remote tablet user must successfully log into the remote network access with a separate login and password (for VPN access) and finally they must log into the AMANDA application itself. So there are three separate login and password entries that must be successfully navigated prior to access being granted.

AMANDA Mobile, referenced in the findings is no longer being used.

While AMANDA tablets do not have hard drive encryption, it should be understood that photographs are what is typically stored on a Community Development and Planning laptop. These photographs are not considered a security risk because they are taken in public and therefore available to anyone to take themselves. AMANDA data is stored on the server in the City's data center, not on the laptop. Access to the AMANDA server and associated data requires the three levels of logins described above. Any city data on the laptop, as described above, has the normal login and password requirement to overcome to gain access. In summary, the fact that encryption does not exist, is not deemed to be a significant security risk due to the non-sensitive nature of the data.

*Target Date: No action to be taken
Responsibility: Gary Allison, Assistant IT Director*

Implementation Status:

Not Applicable. Since management did not concur with this recommendation, there is no plan to implement.