



Audit of
Tax Deed Sales Information
Technology

Office of the County Auditor

Audit Report

Robert Melton, CPA, CIA, CFE, CIG
County Auditor

Audit Conducted by:
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Report No. 18-23
May 31, 2018



OFFICE OF THE COUNTY AUDITOR

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May 31, 2018

Honorable Mayor and Board of County Commissioners,

We conducted an audit of the information technology used by the Tax Deed Section of Records, Taxes and Treasury Division. Our audit objectives were to determine whether information technology general controls are adequate for the TaxSys and Deed Auction applications, and to determine whether the applications adequately support the Tax Deed Sales business process.

We conclude that information technology general controls are not adequate for the TaxSys and Deed Auction applications. We conclude that the applications adequately support the Tax Deed Sales business process. Opportunities for improvement are included in the report.

We appreciate the cooperation and assistance provided by the Record, Taxes, and Treasury Division throughout our review process.

Respectfully submitted,

A handwritten signature in blue ink that reads "Bob Melton".

Bob Melton
County Auditor

cc: Bertha Henry, County Administrator
Andrew Meyers, County Attorney
George Tablack, Chief Financial Officer
John Bruno, Chief Information Officer
Thomas Kennedy, Director, Records, Taxes and Treasury

TABLE OF CONTENT

INTRODUCTION	1
Scope and Methodology	1
Overall Conclusion.....	2
Background.....	2
OPPORTUNITIES FOR IMPROVEMENT.....	4
1. Access to County Tax Data Should be Restricted Based on Job Responsibilities and Segregation of Duties to Prevent Unauthorized Activity.....	4
2. System Password Requirements Should be Enhanced to Prevent Unauthorized Access.....	6
3. Physical Access Controls Should be Enhanced to Restrict and Monitor Access to Sensitive Areas..	6
4. Releases and Updates to TaxSys and Deed Auction Should be Formally Reviewed by Management.	7
5. Reported Incidents Should be Resolved Timely and Classified according to the Service Level Agreement Guidelines.	7
6. The Continuity of Operations Plan (COOP) and Backup Restoration Procedures Should be Tested Annually.....	8
7. Application Logs Should be Periodically Reviewed to Identify Unusual Activity.	8
8. Management Should Evaluate Vendor Performance Against Contract Requirements.	9
9. Information Entrusted to Vendors Should be Adequately Protected.	9
APPENDIX – MANAGEMENT’S RESPONSE	10

INTRODUCTION

Scope and Methodology

The County Auditor's Office conducts audits of Broward County's entities, programs, activities, and contractors to provide the Board of County Commissioners, Broward County's residents, County management, and other stakeholders unbiased, timely, and relevant information for use in promoting government accountability and stewardship and improving government operations.

We conducted an audit of the information technology used by the Tax Deed Section of Records, Taxes and Treasury Division. Our audit objectives were:

1. To determine whether information technology general controls are adequate for the TaxSys and Deed Auction applications
2. To determine whether the applications adequately support the tax deed sales business process, and
3. To determine whether any opportunities for improvement exist.

To determine whether information technology general controls are adequate for the TaxSys and Deed Auction applications, we reviewed information technology policies and procedures, user roles and permissions, user administration procedures, change management procedures, password configuration settings, electronic media disposal procedures, incident management, backup monitoring, vendor reports, and the continuity of operations plan.

To determine whether the applications adequately support the tax deed sales business processes we reviewed contract administration procedures, data interfaces, property tax data, application controls for bid calculations and bid amounts, and bid procedures.

Our audit included such tests of records and other auditing procedures, as we considered necessary in the circumstances. The audit period was October 1, 2016 through September 31, 2017. However, transactions, processes, and situations reviewed were not limited by the audit period. We also conducted an audit of the Tax Deed Section in our Report No. 18-15, dated February 22, 2018.

Overall Conclusion

We conclude that information technology general controls are not adequate for the TaxSys and Deed Auction applications. We conclude that the applications adequately support the Tax Deed Sales business process. Opportunities for improvement are included in the report.

Background

The Tax Deed section is part of the Records, Taxes and Treasury Division (RTT). The Tax Deed section accepts payments for delinquent taxes, handles the redemption of tax certificates, performs the pre-auction activities necessary to bring properties to auction, and processes payment of claims and other disbursements resulting from the sale of the properties.

Tax deed auctions are conducted in accordance with Chapter 197.502, Florida Statutes: "The holder of a tax certificate, at any time after two years have elapsed since April 1 of the year of issuance of the tax certificate and before the cancellation of the certificate, may file the certificate and an application for a tax deed with the tax collector of the county where the property described in the certificate is located".

In June 2008, Broward County contracted with Grant Street Group, Inc. (GSG) to provide a Tax and License Collection and Distribution System (TaxSys) to automate aspects of the tax certificate and tax deed application process. The application is provided as a vendor-hosted, software as a service (SaaS), web based solution. SaaS is a software delivery method where Broward County essentially leases the right to use TaxSys from GSG.

As the SaaS provider, GSG hosts both the TaxSys software and the County's tax and license data at a remote site. RTT staff access TaxSys using an internet browser, and are able to use the system to conduct the daily business activities. GSG has complete access and control of the TaxSys infrastructure (web servers, firewalls, database servers, and the GSG network), application programs, and County data. Broward County personnel are responsible for authorizing employee access to the application, entering tax and property data, and processing transactions.

TaxSys is used by other Florida tax collectors including; Pinellas County, Miami-Dade County, Monroe County, and Brevard County. GSG provides application maintenance and support for TaxSys and all the associated applications. Application maintenance and support includes application; upgrades, updates, patches, coding and data backups. Application modifications requested by one tax collector can be implemented for all users.

RTT uses other applications provided by GSG, associated with TaxSys, to carry out other day to day department operations such as:

- ❖ Escrow Process – Escrow payment processing online application.
- ❖ BTExpress – Online business tax applications for taxpayers.
- ❖ Payment Express – Electronic payment processing.
- ❖ Lien Auction – Online tax certificate sales.
- ❖ Lien Express – Online County-held certificate sales.
- ❖ Deed Express – Online tax deed applications.
- ❖ Title Express – Automated title search ordering and delivery.
- ❖ Deed Auction – Online tax deed sales.

These additional applications function as attached modules that integrate with TaxSys. TaxSys receives data from the additional applications and centralizes the information for the users of the system to carry out their day to day functions. While the applications have the ability to integrate with TaxSys, each application is ancillary and require some form of independent maintenance. Our audit focuses on the TaxSys application and the associated Deed Auction application used to manage the tax deed sales process.

RTT has an Information Technology (IT) Automation team to maintain user administration processes for TaxSys, reports, and data management. RTT utilizes a ticketing system to manage and report incidents related to maintaining application security, and availability. Broward County and GSG have established a Service Level Agreement (SLA) outlining system performance and availability requirements for TaxSys and associated applications.

OPPORTUNITIES FOR IMPROVEMENT

Our audit disclosed certain policies, procedures and practices that could be improved. Our audit was neither designed nor intended to be a detailed study of every relevant system, procedure or transaction. Accordingly, the Opportunities for Improvement presented in this report may not be all-inclusive of areas where improvement may be needed. Management's Response is included in the Appendix.

1. Access to County Tax Data Should be Restricted Based on Job Responsibilities and Segregation of Duties to Prevent Unauthorized Activity.

During our review of access to data and transactions within the TaxSys and Deed Auction applications, we noted the following concerns:

- A. Nine of 11 (82%) Deed Auction administrators are also operational users performing day to day transactions. This combination of access allows these users to bypass application controls and represents a segregation of duties conflict. As a result, inappropriate activities could occur without timely detection. Application administration functions should be performed by the IT staff rather than operational user staff.
- B. Three of 24 (13%) roles sampled within TaxSys to which users can be assigned provided more access than required for the performance of job responsibilities increasing the risk of inappropriate activity. Roles should be designed to grant access based on job responsibilities as required by the County's IT Administration policy. As a result, inappropriate activities could occur.
- C. Six of 19 (32%) terminated employee accounts within the TaxSys application were not disabled within one day of termination from Broward County. One of the six (7%) terminated employee accounts showed activity on the TaxSys application up to three days after the termination date. It took an average of 45 days to disable sampled terminated employee accounts with values ranging from three to 220 days. In addition, one employee retained access to the Deed Auction application for approximately one year after their transfer to another section within the department where access to the application was no longer required.

User administration procedures are not consistently followed contributing to the delay. It is an industry standard to remove or disable user accounts immediately upon termination or transfer. Allowing terminated or transferred employee accounts to remain enabled after the access is no longer required increases the risk of unauthorized or inappropriate access to tax data.

- D. Annual reviews of user access to TaxSys and Deed Auction are not performed. A review is initiated by the IT Automation Group for the TaxSys application; however, four of five (80%) RTT Managers did not respond to the request for review. Management has not implemented a process to periodically review user access to the Deed Auction application. Chapter 3, Section 4.1 of the Broward County IT Administration Policy requires that all user access rights be reviewed for accuracy by the agency and the data owner to determine if the access rights are correct or must be revised or revoked. Management has not implemented procedures to ensure that managers respond timely to the review request for TaxSys and have not implemented a review for Deed Auction.

Failure to periodically review access to County systems may allow employees to retain inappropriate access after a change in job function, termination from Broward County, functional or security changes to applications, and organization structural changes.

- E. RTT has a formal process for requesting, removing, and modifying user access to TaxSys; however, this process is not consistently followed. We noted that:
- i. Five of nine (56%) of new users were setup on the system during the audit period without the required user access request form.
 - ii. Eight of 19 (42%) terminated employee accounts selected were disabled or removed from TaxSys without the required user access request form

User access requests are made via email increasing the risk of unauthorized or inappropriate access. Established user administration procedures should be followed to document the level of access an employee is authorized to have as well as management's approval of that access.

We recommend management:

- A. Restrict business users from performing application administration functions within Deed Auction. Application administration functions should be performed by IT Staff.
- B. Review the roles and permissions assigned to TaxSys users to ensure access is appropriately restricted based on job responsibilities and segregation of duties are enforced.
- C. Ensure appropriate procedures are in place to remove or disable employee accounts from TaxSys and Deed Auction immediately upon employee termination or transfer.
- D. Implement procedures to ensure that managers respond timely to the request for review of user access to the TaxSys and implement procedures to review user access for Deed Auction at least annually. Management should ensure that any group roles to which users are assigned within TaxSys or Deed Auction are also reviewed at least annually.

- E. Ensure formal procedures for requesting, removing, and modifying user access to TaxSys and Deed Auction using access request forms are established and consistently followed.

2. System Password Requirements Should be Enhanced to Prevent Unauthorized Access.

Passwords represent the digital keys to County systems. We noted the following concerns:

- A. Password configurations for TaxSys do not comply with County policy. Passwords do not meet the password expiration, password history, and password complexity required by Broward County Acceptable Use Policy, Volume 7: ETS Chapter 2, Section 5.
- B. Password configurations for Deed Auction do not comply with County policy. Passwords do not meet the password expiration, password history, password length, password complexity requirements as outlined in Broward County Acceptable Use Policy, Volume 7: ETS Chapter 2, Section 5.

Password settings that are not configured to the latest security standards, increase the risk of unauthorized or inappropriate access. Reasonable requirements should be in effect to minimize the possibility of inappropriate access.

We recommend management work with Grant Street Group, Inc. to update the password configuration for TaxSys and Deed Auction to meet or exceed County policy.

3. Physical Access Controls Should be Enhanced to Restrict and Monitor Access to Sensitive Areas.

Physical access controls need improvement. During our review of physical access controls, we noted the following specific concerns:

- A. RTT does not have a formal process for authorizing physical access to secure areas within the agency. A formal process helps to ensure a consistent approach to granting physical access. Without such, inappropriate physical access could be inadvertently granted.
- B. The division is not equipped with electronic badge access, and RTT utilizes combination door locks for gaining access to secure areas. Management has not implemented appropriate procedures to periodically change combination locks. We noted one section has not changed the door lock combination in the last five years.

Access to secure areas should be limited to authorized personnel. Without an electronic badge access system, management is unable to adequately control or monitor access to secure areas.

We recommend management:

- A. Develop and implement a formal process for authorizing physical access to secure areas within the agency.
- B. Evaluate the use of electronic badge access to secure sensitive areas and maintain appropriate access controls. If combination locks are used, management should implement procedures to periodically change combination locks.

4. Releases and Updates to TaxSys and Deed Auction Should be Formally Reviewed by Management.

Management has not implemented a formal process to review releases and updates provided by GSG. Management relies on GSG to provide and install releases and updates for TaxSys and Deed Auction. These releases and updates often include changes requested by other GSG clients outside of Broward County and may negatively affect RTT's transaction processing and data. Changes made to externally hosted systems should be reviewed and approved by management.

We recommend management implement a formal process to review and approve releases and updates provided by GSG.

5. Reported Incidents Should be Resolved Timely and Classified according to the Service Level Agreement Guidelines.

During our review of incident management procedures, we noted the following concerns:

- A. Reported incidents are not resolved timely. Ten of 60 (17%) reported incidents were unresolved as of December 18, 2017. Of the ten reported incidents, 80% were issues reported by Broward County and 20% were issues reported by GSG, Inc. with the average incident ticket open for 219 days with a range of 116 to 332 days. Reported incidents should be resolved timely. Failure to resolve incidents timely may affect agency transactions and data.
- B. Management does not classify reported incidents according to the Service Level Agreement (SLA) guidelines. Currently, the SLA classifies reported incidents severity as level 1, 2, 3 and 4, with level 1 being the most critical. Additionally, each open level 1 incident is eligible for a \$2000 per day vendor reimbursement, while each level 2 incident is eligible for a \$1000 per day vendor reimbursement. For example, one critical incident ticket was open for 186 days with an estimated potential reimbursement of \$186,000 to \$372,000 dollars if it met the criteria for level 1 or 2 within the SLA. Without appropriate

classification of incidents, management may not be able to claim reimbursement for open incident tickets as allowed by the SLA.

- C. Broward County's reported Incidents and other communication using the ticketing system with Grant Street Group, Inc. are available to be viewed by all Grant Street Group, Inc. clients which may inadvertently expose sensitive information. The ticketing system should be configured to limit each client's access to only their information.

We recommend management:

- A. Ensure procedures are in place to periodically follow up on, and resolve reported incidents.
- B. Classify reported incidents and monitor for reimbursement of unresolved tickets according to the SLA guidelines.
- C. Work with GSG on restricting access to Broward County incidents to only authorized Broward County individuals. Until this issue is resolved, management should ensure that sensitive information is not transmitted using the ticketing system.

6. The Continuity of Operations Plan (COOP) and Backup Restoration Procedures Should be Tested Annually.

Management has a documented Continuity of Operations Plan for TaxSys and Deed Auction; however, the plan has not been tested in the last four fiscal years to ensure the agency's ability to function in the event of a system outage or a disaster. Management should ensure that procedures are in place to continue operations, as needed, if TaxSys or Deed Auction are temporarily unavailable. Without conducting annual tests of the Continuity of Operations Plan, management is unable to determine whether the current plan for TaxSys and Deed Auction are adequate.

We recommend management test the Continuity of Operations Plan annually.

7. Application Logs Should be Periodically Reviewed to Identify Unusual Activity.

Management does not perform a review of application logs to identify and follow-up on discrepancies identified. The TaxSys application has logging enabled; however, management has not implemented a process to periodically review the logs in order to obtain timely notification of inappropriate or unauthorized activity. Without a periodic review of application logs, management does not have timely notification of inappropriate or unauthorized activity.

We recommend management implement procedures to periodically review logs for the TaxSys and Deed Auction applications. In addition, we recommend that management document the review as evidence of their due diligence.

8. Management Should Evaluate Vendor Performance Against Contract Requirements.

Management has not implemented procedures to evaluate vendor performance against contract requirements. Broward County IT Administration Policy Volume 7: Chapter 3, Section 13.2 requires the contract administrators ensure that contracted services are adequately delivered as defined in the agreement. Without monitoring vendor performance, management may not be aware of whether the minimum guaranteed level of services under the contract are being delivered.

We recommend management implement procedures to evaluate vendor performance against contract requirements.

9. Information Entrusted to Vendors Should be Adequately Protected.

A Service Organization Controls (SOC 2) report exists for vendor controls over Broward County data; however, the report covers how the controls are designed (Type I), but does not include a determination of whether controls over the security, availability, processing integrity, and confidentiality of the County's data were operating effectively (Type II) over a period of time. These reports play an important role in:

- ❖ Vendor oversight
- ❖ Vendor management programs
- ❖ Internal County governance and risk management processes
- ❖ Regulatory oversight

Although management has outsourced specific functions to GSG, management has a responsibility over the data entrusted to this vendor and is required to ensure that the data is adequately protected. Without a SOC report that determines whether vendor controls were operating effectively, management is unable to gain assurance over the security, availability, processing integrity, confidentiality, and privacy of the County's data managed by GSG.

We recommend management obtain a SOC 2, Type II report from GSG to gain assurance over the security, availability, processing integrity, and confidentiality of the County's data.

APPENDIX – MANAGEMENT’S RESPONSE



BERTHA W. HENRY, County Administrator

115 S. Andrews Avenue, Room 409 • Fort Lauderdale, Florida 33301 • 954-357-7362 • FAX 954-357-7360

MEMORANDUM

TO: Robert Melton, CPA, CIA, CFE, CIG
County Auditor

FROM: Bertha Henry
County Administrator

DATE: May 30, 2018

RE: Management Response to the Office of the County Auditor's Audit of Tax Deed Sales Information Technology

The Finance and Administrative Services Department and the Records, Taxes and Treasury Division (RTT) have reviewed the Office of the County Auditor's Audit Report on the Tax Deed Sales Information Technology and submits the following as Management's response.

In summary, Management accepts most of the Auditor's opportunities for improvement. RTT has implemented many new procedural enhancements in response to the audit and is working with other County agencies to implement further enhancements. Desktop procedures have been updated to reflect the recommended changes. Additional enhancements to the desktop procedures may be added on an ongoing basis.

Many of the opportunities for improvement involve reporting user and application settings in Grant Street Group's TaxSys Tax Collection and Billing System. Where recommended, user permissions have been updated and reporting has been enhanced in the system. RTT has also implemented periodic user access and user action review procedures, where recommended, to enhance system security and data integrity. Incident reporting and monitoring have been enhanced in accordance with the audit recommendations, to help ensure contract compliance. Physical access controls to secure division areas are being reviewed with the assistance of the Facilities Management Division and will be updated along with the progress of the Governmental Center security review and update project.

Enclosed below, please find detailed responses to each of the Auditor's opportunities for improvement and recommendations.

Opportunity for Improvement 1: *"Access to County Tax Data Should be Restricted Based on Job Responsibilities and Segregation of Duties to Prevent Unauthorized Activity."*

Recommendation A: *"Restrict business users from performing application administration functions within Deed Auction. Application administration functions should be performed by IT Staff."*

Response A: Agree. Application administration functions for the Deed Auction application have been moved from business users to RTT's Information Technology (IT) Administrators. Any modifications to Deed Auction business user accounts are routed through and conducted by RTT IT Administrators. Any modifications to Deed Auction Administrator users are conducted by Grant Street Group (GSG) Administrators. These actions are routed and approved through the RTT Director or Assistant Director and then the RTT IT Administrators using the TaxSys User Access Request Form.

Recommendation B: *"Review the roles and permissions assigned to TaxSys users to ensure access is appropriately restricted based on job responsibilities and segregation of duties are enforced."*

Response B: Agree. User accounts, roles and permissions are reviewed by individual RTT Section Managers and Senior Managers on a quarterly basis. Any users account role and/or permission modifications are noted and requested within five business days of notification by RTT IT Administrators. Responses are required within this timeframe and retained by RTT IT Administrators for reference. Any role changes are requested through the standard TaxSys User Access Request Form.

Recommendation C: *"Ensure appropriate procedures are in place to remove or disable employee accounts from TaxSys and Deed Auction immediately upon employee termination or transfer."*

Response C: Agree. Depending upon the type of account action, RTT IT Administrators are notified by various sources (including RTT Management, Enterprise Technology Services (ETS) or Human Resources (HR) Division) regarding the disabling of employee accounts or deletions upon termination or transfer. Such actions take place in requested timeframes such as by close of business or as of a certain time and date. The TaxSys User Access Request Form is utilized for these account actions.

Recommendation D: *"Implement procedures to ensure that managers respond timely to the request for review of user access to the [sic] TaxSys and implement procedures to review user access for Deed Auction at least annually. Management should ensure that any group roles to which users are assigned within TaxSys or Deed Auction are also reviewed at least annually."*

May 30, 2018
Management Response to Audit of
Tax Deed Sales Information Technology
Page 3 of 7

Response D: Agree. Same response as B, above.

Recommendation E: *"Ensure formal procedures for requesting, removing, and modifying user access to TaxSys and Deed Auction using access request forms are established and consistently followed."*

Response E: Agree. All user account modifications for the TaxSys and Deed Auction applications are requested and approved using the existing TaxSys User Access Request Form.

Opportunity for Improvement 2: *"System Password Requirements Should be Enhanced to Prevent Unauthorized Access."*

Recommendation: Agree. TaxSys and Deed Auction password configurations now meet all of the current ETS County Administrative Policies and Procedures (CAPP) standards. The password configurations were updated as of the February 22, 2018 software release. RTT IT Administrators will periodically review the ETS CAPP documentation and request updates to password configurations as needed in the future.

Opportunity for Improvement 3: *"Physical Access Controls Should be Enhanced to Restrict and Monitor Access to Sensitive Areas."*

Recommendation A: *"Develop and implement a formal process for authorizing physical access to secure areas within the agency."*

Response A: Agree. At the time of onboarding, RTT provides physical access to secure areas only for applicable staff as requested by RTT Supervisors or RTT Operations Managers. If a staff member with access to a secure area leaves RTT's employment and has been provided access to a secure area via combination lock access, the RTT Supervisor or RTT Operations Manager will notify the RTT Agency Purchasing Coordinator to ensure the lock combination is changed within five business days. The combination change activity is logged in a central electronic worksheet by the appropriate section staff or the RTT Agency Purchasing Coordinator who ordered the work.

Recommendation B: *"Evaluate the use of electronic badge access to secure sensitive areas and maintain appropriate access controls. If combination locks are used, management should implement procedures to periodically change combination locks."*

Response B: Agree. RTT has issued a work order with Facilities Management Division to evaluate the addition of electronic badge access to all secure areas in the RTT Governmental Center East offices. Until work on this project has been completed, RTT Management will ensure the codes on the combination locks in secure areas are changed on a quarterly basis. The combination change activity will be logged in a central electronic

worksheet by the appropriate section staff or the Agency Purchasing Coordinator who ordered the work.

Opportunity for Improvement 4: *"Releases and Updates to TaxSys and Deed Auction Should be Formally Reviewed by Management."*

Recommendation: *"Implement a formal process to review and approve releases and updates provided by GSG."*

Response: Agree. As a Software as a Service (SaaS) solution, TaxSys and Deed Auction have an application base shared by many GSG customers. Releases and updates are simultaneously rolled out to all system users, not just one customer at a time. Hence, the control of specific components in a release is very difficult in this environment.

Despite this, RTT staff reviews the forthcoming release notes in the ticket reporting system (also known as JIRA) and Confluence systems, where details of the updates are published. RTT IT Administrators and RTT Managers distribute these release details to the appropriate staff for review, if applicable. RTT staff reviews the new features and functionality in the Beta environments of the respective applications. Notes on the results of the testing are added to the JIRA system ticket(s) associated with the feature update and thus communicated back to GSG.

In addition, RTT has worked with ETS to include TaxSys release information in the ETS Change Control process. As such, TaxSys release information and dates would be noted in ETS Change Control, so others in ETS are aware of the changes taking place and can help to mitigate any fallout from the Release and Updates, if action is merited. The addition to the ETS Change Control process will be in place in June 2018.

Opportunity for Improvement 5: *"Reported Incidents Should be Resolved Timely and Classified According to the Service Level Agreement."*

Recommendation A: *"Ensure procedures are in place to periodically follow up on, and resolve reported incidents."*

Response A: Agree. Reported incidents are reviewed by RTT Management on a periodic basis. Any communications on the reported incidents are captured in the JIRA system. In addition, GSG staff performs periodic onsite visits with RTT staff to review outstanding JIRA system tickets and issues.

Recommendation B: *"Classify reported incidents and monitor for reimbursement of unresolved tickets according to the SLA guidelines."*

Response B: Partially agree.

Management agrees and has procedures in place to follow up on - and resolve - reported incidents. RTT Management has asked GSG if severity levels, in accordance to the Service Level Agreement (SLA), can be assigned to JIRA system tickets. Based on GSG's response, such request is not possible; however, it is possible to assign a "Label" to a ticket in the JIRA system. The "Label" can be noted as a severity level, per language in the SLA with GSG. JIRA system ticket creators have been advised of this additional "Label" step to complete when creating a new JIRA system ticket.

Management also agrees that some JIRA system tickets are not labeled in accordance with the current SLA. Thus, RTT will work with GSG, where possible, to review and reclassify outstanding JIRA system tickets in accordance with severity levels in the current SLA.

Management disagrees with the characterization of the example cited in Audit Concern 5.B. Specifically "...For example, one critical incident ticket was open for 186 days with an estimated potential reimbursement of \$186,000 to \$372,000 dollars [sic]..." While the specific incident cited in the Audit Report was not provided to RTT Management, RTT has reviewed all previous and outstanding incidents reported in the JIRA system to-date and no incident has reached the Severity Level 1 or 2 in the SLA that would require this type of reimbursement. If such an incident were to occur, it would be taken up verbally with the GSG support hotline or to one of GSG's executive team members and documented for the record in the JIRA system after it was verbally reported. It should also be noted that TaxSys system outages are rare and are usually attributable to network connection issues on the County's network, if at all.

Recommendation C: *"Work with GSG on restricting access to Broward County incidents to only authorized Broward County individuals. Until this issue is resolved, management should ensure that sensitive information is not transmitted using the ticketing system."*

Response C: Partially agree.

Management agrees that there should be no "sensitive information" transmitted within the JIRA system and nothing sensitive is posted to tickets in the JIRA ticketing system during the normal course of business. Any sensitive or confidential information is transferred to GSG via secure File Transfer Protocol (SFTP/FTPS) or secure HTTP (HTTPS).

Management agrees with the recommendation related to Audit Concern 5.C, which was in reference to documentation requested during the course of this Audit. Management agrees that such requests should be routed outside of the JIRA and Confluence systems if disclosure of such requests is a concern. The concern specific to this Audit was raised by County Audit staff at the end of this Audit and therefore could not be accommodated during the course of the work and requests involved in this Audit. However, any future requests related to system audits will be routed outside of the JIRA and Confluence systems, in a secure manner amenable to the County Auditor's Office.

Management disagrees regarding "...restricting access to Broward County incidents to only authorized Broward County individuals." The purpose of the JIRA system and Confluence sites is to share information amongst GSG customers. This allows all GSG customers to search for issues and use these systems as research tools to help solve their own problems. This is highly effective, especially in the event when such an issue has been reported previously, perhaps by another customer. To segregate incidents to "...only authorized Broward County individuals..." would undermine the purpose and value of shared support systems. It should also be noted that only key RTT staff members have access to view or log support tickets in the JIRA and Confluence systems.

Opportunity for Improvement 6: *"The Continuity of Operations Plan (COOP) and Backup Restoration Procedures Should be Tested Annually."*

Recommendation: *"Management test the Continuity of Operations Plan annually"*

Response: Agree. Management has included Backup Restoration Procedures and Disaster Recovery Procedures for key systems including TaxSys in the RTT COOP document and annual Tabletop Exercises. Tabletop Exercise results are conducted in the May timeframe each year and will be documented as required.

Opportunity for Improvement 7: *"Application Logs Should be Periodically Reviewed to Identify Unusual Activity."*

Recommendation: *"Management implement procedures to periodically review logs for the TaxSys and Deed Auction applications. In addition, we recommend that management document the review as evidence of their due diligence."*

Response: Agree. Application logs have been developed for key user actions. These logs are distributed at the beginning of each month, for the prior month's activity. RTT's IT Administrators, along with RTT Management, review the logs and report any suspicious activity within five business days of receipt of the logs. Responses from RTT Management are recorded by RTT's IT Administrators, even if no suspicious activity is detected. The logs, distribution of the logs, and RTT Management Responses are retained for review, as needed.

Opportunity for Improvement 8: *"Management Should Evaluate Vendor Performance Against Contract Requirements."*

Recommendation: *"Management implement procedures to evaluate vendor performance against contract requirements."*

May 30, 2018
Management Response to Audit of
Tax Deed Sales Information Technology
Page 7 of 7

Response: Agree. Monthly performance reports are available through the TaxSys application. These reports are distributed, reviewed, confirmed and retained for further confirmation on an ongoing basis.

Opportunity for Improvement 9: *"Information Entrusted to Vendors Should be Adequately Protected."*

Recommendation: *"Management obtain a SOC 2, Type II report from GSG to gain assurance over the security, availability, processing integrity, and confidentiality of the County's data."*

Response: Agree. GSG has provided a SOC2, Type I report, which is the first step in the SOC2 reporting process. GSG is working to provide a SOC2, Type II report, which will be provided by the end of July 2018. The report will be obtained and reviewed when it is available from the vendor.

Thank you for the opportunity to respond and provide Management's comments to the Audit. If there are any addition, deletions/omissions, or other changes or modifications to Management's response, please provide us the opportunity to review prior to issuance. Should you have any questions, please do not hesitate to contact me.

c: Mayor and Broward County Board of County Commissioners
Monica Cepero, Deputy County Administrator
George Tablack, CPA, Chief Financial Officer
Kevin Kelleher, Deputy Chief Financial Officer
Tom Kennedy, Director | Records, Taxes and Treasury Division
Gary Mehringer, Assistant Director | Records, Taxes and Treasury Division
John Bruno, Chief Information Officer, Enterprise Technology Division
Andrew Meyers, County Attorney