

CITY CLERK'S DEPARTMENT Information, Administration and Election Services

File No. 04-1000-20-2013-002

February 14, 2013



Dear s.22(1)

Re: Request for Access to Records under the Freedom of Information and Protection of Privacy Act (the "Act")

I am responding to your request of December 31, 2012 for:

Full texts of all audits from the internal audit branch, from October 1, 2012 to December 31, 2012.

All responsive records are enclosed. Some information in the records has been severed, (blacked out), under s. 13(1) and s.17(1)(c) of the Act. You can read or download those sections here:

http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/96165_00

Under section 52 of the Act you may ask the Information & Privacy Commissioner to review any matter related to the City's response to your request. The Act allows you 30 business days from the date you receive this notice to request a review by writing to:

Office of the Information & Privacy Commissioner, P.O. Box 9038, Stn. Prov. Govt.
Victoria, B.C. V8W 9A4
Tel. 250-387-5629; Fax 250-387-1696

If you request a review, please provide the Commissioner's office with:

- 1) the request number assigned to your request (#04-1000-20-2012-002);
- a copy of this letter;
- a copy of your original request for information sent to the City of Vancouver; and
- 4) detailed reasons or grounds on which you are seeking the review.

Please do not hesitate to contact me if you have any questions.

Yours truly,

Barbara J. Van Fraassen, BA

Manager, Corporate Information and Privacy

City Clerk's Department, City of Vancouver Email: <u>Barbara.vanfraassen@vancouver.ca</u>

Telephone: 604.873.7999

Encl.

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CITY OF VANCOUVER INTERNAL AUDIT REPORT

IT Asset Management

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Internal Audit Management Team

KPMG

Patrice Impey, General Manager (GM), Financial

Services Group & CFO

Jim Chu, Chief Constable (VPD) Sandra Singh, Chief Librarian (VPL)

Mark McDonald, Chief Information Officer (CIO)

Myron Backlin, Manager, Budgets & Asset Management

Janet Horne, Manager, Systems & IT (VPL)

Kathy Wunder, Director, IT (VPD)

EXECUTIVE SUMMARY

September 4, 2012

This audit was initiated to provide reasonable independent assurance that the existing internal controls and business processes supporting the management of Information Technology (IT) hardware assets are adequate, effective, and that assets are properly accounted.

Management has

committed to implement standard inventory tracking processes, formalize asset disposal requirements, and review acquisition processes. This will enable effective management of IT hardware and mitigate financial and legal liabilities at the City. The significant findings are:

F.1 Improve inventory management and tracking of IT assets

The SAP system is used for the initial purchase and recording of IT hardware.

s. 13(1)

Management has committed to establish a baseline inventory record and asset management process as part of the IT Systems Management System implementation.

F.2 Formalize IT asset disposal policy and procedures

IT assets that have reached the end of their useful life should be handled securely and in an environmentally conscious manner. The City donates end of life computers to a non profit organization for re-distribution. 5. 13(1)

s. 13(1)

Management has committed to formalize an IT asset disposal policy, and establish a formal service level agreement with the non profit organization on secure data wiping of donated City assets.

These and other audit findings and recommendations are contained in the report.

Tony Hui, CA

Manager, Internal Audit Division

Jennifer Chow, CMA Senior Internal Auditor

Office of the City Manager Internal Audit Division

A. BACKGROUND

Information Technology (IT) hardware assets at the City were worth \$14.4M based on the 2011 financial statement. Types of IT hardware assets managed at the City include:

- Desktop computers;
- Laptops and tablets;
- Display devices;
- Printers;
- Servers; and
- Telecomm and network hardware.

IT hardware assets are primarily managed by IT Shared Services (ITSS) which is comprised of Corporate IT, and IT staff in Engineering, CSG, Fire, Parks and VPD. Once assets are purchased and recorded in SAP, an equipment record is generated for each item. These equipment records form the basis for asset pools which are used for financial reporting purposes. VPL manages the deployment of their own IT assets through an asset management system, with asset values recorded in SAP.

Management is implementing a new asset management system through the IT Systems Management System (ITSMS) project. An RFP was issued in Q2 2012 and vendors are currently under review. Implementation is expected to be completed by Q1 2013. The main objectives for implementing ITSMS are to enable improved inventory management and deployment of both hardware and software. Management has indicated that ITSMS will be linked to SAP for financial reporting purposes. At the time of review, VPD and VPL were not included in the project scope.

In 2011, ITSS implemented the City Client Hardware Standard to standardize hardware assets purchased at the City. An advisory panel is in place to review suitability of hardware to meet City business needs.

B. SCOPE

Our audit objective was to provide reasonable independent assurance that the existing internal controls and business processes relating to IT asset management are adequate and effective. Our work included review of the following areas:

- Oversight and governance;
- Policies and procedures;
- · Purchasing and receiving processes;
- Inventory management;
- Performance monitoring and maintenance; and
- Disposal and retirement of assets at end of life.

Physical security and mobile devices such as cell phones were covered in previous audits and are out of scope for this audit.

Industry best practices such as the Information Systems Audit and Control Association (ISACA) COBIT 5 Enterprise IT business framework were used in assessing efficiency and effectiveness of the City's IT asset management processes.

The audit is not designed to detect fraud. Accordingly there should be no such reliance.

C. ACKNOWLEDGEMENT

We would like to thank Mark McDonald, CIO, Kathy Wunder, Director IT (VPD), Janet Horne, Manager, Systems & IT (VPL) and ITSS management and staff for their cooperation and assistance.

D. CONCLUSION

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Findings and recommendations have been discussed with appropriate management and responses incorporated in this report.

E. RISK ANALYSIS



Positive Findings

Management has taken proactive measures to address asset management issues with the implementation of an asset management system targeted for completion in Q2 2013. Additionally, management has completed extensive benchmarking of IT asset disposal processes in efforts to address existing gaps.

F. AUDIT ISSUES, RECOMMENDATIONS AND MANAGEMENT RESPONSES



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SAP is the current system used for purchasing and recording of IT assets. Once assets are initially recorded, changes can occur over the life cycle of the asset, such as in the assigned department, employee, location, or the asset has reached the end of its useful life. Although SAP stores financial information of IT assets, it is not designed for the operational management of IT assets.

Active Directory and SAP records do not reconcile

Active Directory (AD) is a software that identifies computers connected to the City's network, and provides a more current record of computers on hand than SAP. (5. 13(1)

Although Active

Directory is able to identify computers connected to the network, it does not contain information on all IT assets such as network devices and has limited information on printers and servers.

ITSMS is expected to address the limitations of existing systems in the deployment, tracking, and inventory management of IT assets. However, SAP will remain as the financial record for IT assets at the City and should be reconciled to ensure accuracy. Management has indicated that a baseline inventory record and asset management processes will be established as part of ITSMS implementation.

Best practices recommend that an accurate record of IT assets be maintained to provide control for operational and financial management.³ This allows for better tracking and accountability of IT assets.

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Management Response:

Please check one:

Please check one:

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¹ Including desktops, laptops, monitors, printers, servers, and network assets.

³ ISACA COBIT 5: A Business Framework for the Governance and Management of Enterprise IT, 2012.

V	Agree with the findings	V	Agree with the recommendation
Γ	Disagree with the findings	Г	Disagree with the recommendation

Management Comment: Time to integrate the new ITMS system with SAP will likely not be completed until June 30, 2013.

F.2 Formalize IT asset disposal policy, procedures and contractual agreement

No formal asset disposal policy

There are currently no formal policies, procedures or contractual agreement in place governing the disposal of City IT assets. The City donates end of life computers to Reboot Vancouver (Reboot) to be refurbished and re-distributed to low income individuals and families. As part of the PC replacement program, City IT staff is responsible for performing data wipes on hard drives from sensitive departments⁴ prior to donation. Reboot is responsible for performing data wipes on all remaining computers. Although the City has been working with Reboot for several years, there is no formal contract agreement in place.

Draft asset disposition strategy

In 2011, IT management made progress towards formalizing the disposal process, through the development of a draft IT Asset Disposition strategy including related policies and procedures. In addition, management initiated an informal email agreement with Reboot outlining expectations on how donated computers should be handled. IT staff has conducted two site visits to inspect Reboot operations since then, however documentation of the visits was brief and should be improved by documenting further details of items inspected and work performed.

Management has indicated that the disposal process will be formalized and a service level agreement with Reboot will be established to address expectations on handling of donated CoV IT assets.

Best practices recommend IT assets which have reached the end of their useful life to be disposed of securely, with stored data permanently deleted. Environment factors should be considered in disposal.⁵



⁴ "Sensitive departments" are defined by IT management as City Manager's Office, City Clerk, Human Resources, Legal, IT Security, Mayor & Council, Directors and above and Executive Assistants.

⁵ ISACA COBIT 5: A Business Framework for the Governance and Management of Enterprise IT, 2012.

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Management Response:	
Please check one:	Please check one:
✓ Agree with the findings	✓ Agree with the recommendation
T Disagree with the findings	Disagree with the recommendation
3	eements will be formalized with Reboot for asset ourcing. Target to complete March 31, 2013
F.3 Ensure consistency and proper oversi	ght over inventory count process
Current inventory count process	
IT hardware assets are managed by three m	nain groups which are responsible for the following:
 Desktop Services for computers, disp Data Centres for servers; and Network & Telecomm assets. 	play devices and printers;
s. 13(1)	
Use of software to perform inventory count	s through ITSMS
always be practical and a logical count Management has indicated that under IT inventory counts based on IP addresses fo	in many locations, a complete physical count may not through use of software is sometimes necessary. SMS, there may be functionality to perform logical r assets connected to the network. Reconciliation of more effective management and deployment of IT
Best practices recommend performing invasset records on a regular and consistent be	ventory counts of assets on hand and reconciling to assis.
. 13(1)	
Management Response:	

Please check one:

Please check one:

✓ Agree with the findings	✓ Agree with the recommendation
□ Disagree with the findings	☐ Disagree with the recommendation
	in when the new Asset Management Analyst is the inventory counts. Target to begin January
s. 13(1)	
process for testing of a separate tablet rollout. business requirements and the model was not in have been re-deployed since this decision, the value to the City. As new technologies continued to obtain loan devices from vendors rather each time. Management has indicated that existing purchappropriate usage. Additionally, management	ets purchased through the regular procurement Management determined that they did not meet implemented. Although some of the test tablets by are primarily idle assets providing no further iously emerge, there may be opportunity for the er than having to purchase for testing purposes thase card users will be re-educated regarding is planning to form strategic relationships with in devices when testing new technology while
5. 13(1)	
Management Response: Please check one: ✓ Agree with the findings ✓ Disagree with the findings	Please check one: ✓ Agree with the recommendation ✓ Disagree with the recommendation

Management Comment: F4.2 The vendor loaner process is already in practice for our device evaluation process (i.e. laptops and tablets) it will be expanded further with the assistance of strategic sourcing.

F4.1 A review of all IT purchased cards holders is in progress. Once the final report is compiled the CIO will limit access to purchase cards on an "as required" basis and will discontinue availability to non-essential areas. Policies will be reiterated to those who will have purchase cards target to complete Dec 31st, 2012.

F.5 Improve tracking of total cost information

Review of maintenance and support costs

Total cost information including maintenance, warranty, and support costs are not currently tracked for all IT hardware assets.

Compugen is the City's provider for the supply and deployment of computer equipment, and provides hardware maintenance services. ITSS reviews service levels and performance of assets provided through Compugen on a quarterly basis. Based on review of the Q1 2012 report, printers had the highest number of support calls, accounting for 53% of trouble tickets and three times the cost of computer support calls⁶. However the reports provided are vendor specific and do not include all IT hardware assets managed at the City.

Maintenance and support costs can be a significant part of an asset's total cost through its lifecycle. For 2011, maintenance for hardware assets totaled s. 17(1) based on information provided by management. In addition to warranty and training costs, maintenance costs should be tracked and the total cost analyzed to provide a more accurate view of costs associated with managing assets. This will further facilitate resource planning and asset utilization.

A regular review of the overall IT asset base should be performed to identify ways to optimize costs and align with business needs. This includes tracking of the initial investment, maintenance or support, warranty and training costs. 8

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Management Response:

Please check one:

Please check one:

Agree with the findings

Agree with the recommendation

T Disagree with the findings

□ Disagree with the recommendation

s. 13(1) and s.17(1)

⁶ Q1 2012 support costs for printers was ^{s. 17(1)} compared to ^{s. 17(1)} for computers.

⁷ ISACA COBIT 5: A Business Framework for the Governance and Management of Enterprise IT, 2012.

⁸ Protiviti Knowledge Leader: IT Asset Management. http://www.knowledgeleader.com

s. 13(1) and s.17(1)

Total Cost of Ownership identification for hardware asset will be a combined effort between, IT Finance, Asset Management Analyst, Strategic Sourcing and the CIO. Target to complete first draft report is April 30, 2013.



CITY OF VANCOUVER INTERNAL AUDIT REPORT Software License Audit

Distribution:

Internal Audit Management Team KPMG

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Group & CFO

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Mark McDonald, Chief Information Officer (CIO) Myron Backlin, Manager, Budgets, Asset Management

& Administrative Services

Kathy Wunder, Director, IT (VPD)

Janet Horne, Manager, Systems & IT (VPL)

EXECUTIVE SUMMARY

September 21, 2012

The Software License Audit was initiated to provide reasonable independent assurance that the related internal controls are adequate and that the business processes managing software licenses are effective and efficient.

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Management has

committed to strengthen internal control and enhance operational efficiency by improving the processes and systems involved with managing the records of software licenses. This will assist in mitigating the risk of non-compliance with the terms of the software license agreements.

The more significant findings and recommendations are:

F.1 Improve inventory system information and practices

s. 13(1)

System

limitations and existing business processes do not provide the City with the detailed information necessary for managing its software assets. This results in difficulties in deploying and updating software and inhibits the optimization of the number of software licenses. Management has committed to implement and manage an inventory system that captures sufficient details, including the software licenses entitlement, current license usage, and location details.

F.2 Implement reconciliation and monitoring controls over software license usage

s. 13(1)

Management of

software licenses and mitigation of risk of non-compliance with license terms would be improved by conducting regular reconciliations between licenses purchased and licenses in use. Implementation of monitoring controls would also potentially identify usage that is not covered by a license, or instances where a license is assigned but not needed by the user. Management has committed to implement a reconciliation process and monitoring controls to address this risk to improve operational efficiency.

These and other audit findings and recommendations are contained in the report.

Tony Hui, CA Manager, Internal Audit Division Carmen Fuellbrandt, CMA Senior Internal Auditor



Office of the City Manager Internal Audit Division

A. BACKGROUND

A software license is an agreement between the software vendor and software user that outlines the user's entitlement to use the software. Software licenses may take various forms, including a single user license, a network license, or a site license that allows users to run software simultaneously.

The value of the City's software assets at 2011 year-end was \$35 million and expenditure on software maintenance was \$3.75 million.¹ There are over 500 software applications, including multiple versions of the same software, listed in the City's inventory.

Of all the software applications installed on the City's IT assets, not all of them require a software license. This includes applications that developed in-house and freeware such as Adobe Reader.

The processes pertaining to the procurement, maintenance, and decommissioning of software are handled by multiple groups. IT Shared Services (ITSS) manages software for most City departments, with the exception of the Vancouver Police Department (VPD) and the Vancouver Public Library (VPL). VPD's software assets are included in the City's inventory, but ITSS is not involved operationally with software distribution. VPL manages its own software purchases, distribution, and inventory. In addition to these groups there are also dedicated staff that manage specialized or departmental-specific software and related user access.

The IT Systems Management System (ITSMS), which is planned to be completed in early 2013, is expected to help automate inventory tracking operations and improve software distribution and deployment processes. This project was at the RFP stage at the time of this audit. The scope of the project specifically includes the ability to create and maintain a structured inventory of software assets, and the ability to automatically discover, track, monitor and report on software inventory and location information of networked Windows desktop and laptop devices.

B. SCOPE

Our audit objective was to provide reasonable independent assurance that the existing internal controls and business processes relating to software licenses are adequate and effective. Our work included review of the following areas:

- Governance and responsibilities for managing software licenses;
- Applicable policies and procedures;
- Processes in place to track software assets, from purchase and installation to disposition;
- Inventory controls and other controls around maintaining compliance with software license terms;
- Contracts and other documentation supporting the City's license entitlement for a sample of software applications; and

¹ As per the City of Vancouver's 2011 Financial Statement.

Authorization of software purchases and installations.

Access controls over software were not in scope as they were previously covered by a separate audit.

The audit is not designed to detect fraud. Accordingly there should be no such reliance.

C. ACKNOWLEDGEMENT

We would like to thank the Chief Information Officer and management and staff in ITSS, VPD IT, and VPL IT for their cooperation and assistance.

D. CONCLUSION

s. 13(1)

Management has

committed to strengthen internal control and enhance operational efficiency by improving the processes and systems involved with managing the records of software licenses. This will assist in mitigating the risk of non-compliance with the terms of the software license agreements.

Findings and recommendations have been discussed with appropriate management and responses incorporated in this report.

E. RISK ANALYSIS

Potential risks are:

- Non-compliance with license agreements which may result in financial penalties;
- Excessive spending on licenses and support costs; software usage is not optimized;
- Costs incurred due to lack of coordination of purchases between departments;
- Staff may install unauthorized software, opening the potential for network exposure to viruses;
- Unnecessary costs incurred from unused or obsolete software; and
- Inaccurate financial reporting of software assets and expenditures.

F. POSITIVE FINDINGS

Management has committed to take immediate corrective actions where applicable, including reviewing and appropriately limiting the number of administrator ID's and standard ID's with elevated access, and compiling a list of centralized software license contracts and supporting information.

It was also noted that there is a good level of detail in the documentation serving as reference material for ITSS staff, particularly for the procurement process that was recently updated via the Procure-to-Pay project. Staff that were engaged for the audit indicated awareness of the new process.

G. AUDIT ISSUES, RECOMMENDATIONS AND MANAGEMENT RESPONSES

G.1 Improve inventory system information and practices

Maintaining an up-to-date and accurate record of software, is a key control in ensuring that the asset is managed effectively and efficiently, and is accounted for appropriately in the financial system.²

City of Vancouver and VPD

SAP is the system that is used to record purchases of both software and hardware for the City, other than for VPL assets. All software that is purchased using the SAP purchase order process is recorded in SAP's inventory, which provides a control over completeness at least when software is initially acquired. However, there are limitations to relying upon the data in SAP to manage software licenses:

- A view of the City's available licenses and licenses currently in use for a given application is not available;
- A list of users or their associated computer numbers is not readily available for the software in inventory;
- The physical location of the hardware asset(s) containing the software is not available;
- The inventory does not include departmental specific software that is not installed by Corporate IT and larger applications such as Hansen and SAP itself.

VPL

VPL manages its IT assets using an inventory database that is separate from the SAP inventory. The VPL inventory is configured to provide more details such as the number of licenses available, which enables identification of any software that is over-subscribed. However, the location of the asset is not easily identified and not all software is included in the inventory.

Review of a sample of City and VPL desktop computers -revealed that out of a sample of 15 computers, there were 23 instances of licensed software found. Seven of these were found in the SAP inventory under the corresponding PC's asset number. The remaining 16 were not listed in SAP. If a license is not included in SAP inventory, it may be due to the entire software license being grouped under a single position number, and not assigned to each individual user's machine.

It has been acknowledged by IT staff that the current inaccuracies of the inventory system cause difficulties for software deployments and updates. Also, without an accurate inventory of software licenses, management may not have appropriate information for decision making regarding contract renewals and optimization of the number of licenses for a given application. Additionally, without insight into the availability of licenses the City may be incurring additional cost by purchasing new licenses rather than re-assigning available licenses.

The IT Systems Management System (ITSMS), planned for 2013, has been identified as a solution to the current inventory information. The new system that is selected will not completely replace SAP's role, as software purchases and the related information for financial reporting will still be recorded in SAP.

Recommendation:

² Management Practice BAI09, COBIT 5. Information Systems Audit and Control Association (ISACA).

s. 13(1)		
Management Response:		
Please check one:	Please check one:	
□ Agree with the findings □		
☐ Disagree with the findings	☐ Disagree with the recommendation	
G.2 Implement reconciliation and monitoring	g controls over software license usage	
	s is to ensure that the optimal number is deployed software installed is in compliance with license	
s. 17(1)		
	Gathering current license usage for most software applications as the inventory not keep an up-to-date record of the licenses	
In addition to ensuring that the City holds sufficient licenses, there is also a risk that too many licenses are held, resulting in excessive software maintenance costs. There is no monitoring of software usage or inactivity for the majority of applications. The exceptions are applications such as SAP which are administered by user ID's and have the capability to identify users that have been inactive for a certain timeframe.		
Under the current system it is difficult to obtain a list of all licensed applications that are physically on a computer. Through a manual process, Desktop Support has access to remotely view licensed software, as well as freeware, in-house developed applications (e.g. eRecruiting) and plug-ins that are physically on a given machine. However, this information is not able to be compiled in a meaningful way, or grouped to show all users of a given software application. The IT Systems Management System project underway aims to improve IT's ability to manage the software that is installed on IT assets.		
s.13(1) and s.17(1)		
Recommendation:		
s. 13(1)		

³ Domain BAI09: Manage Assets, Cobit 5 Process Reference Guide. ISACA.

s. 13(1)	
Management Response:	
Please check one:	Please check one:
✓ Agree with the findings	✓ Agree with the recommendation
□ Disagree with the findings	□ Disagree with the recommendation
G.3 Establish a central repository for license	information
documentation outlining the agreement between	mation such as contracts and other supporting en the City and software vendors. A list of key ation for each software application is also not
software samples, a copy of a license agreementation such as an invoice or renewal question for that software application was obtained for software sample, the only documentation avail	for software licenses varies. For eight out of 15 ent or portion of the agreement was obtained. uote that outlined the City's license entitlement six of the 15 samples. For the remaining one lable was a record of past renewals which were only documentation available as the information er's employment ended.
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Recommendation:	
s. 13(1)	
Management Response:	
Please check one:	Please check one:
✓ Agree with the findings	✓ Agree with the recommendation

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G.4 Increase control around administrator access privileges

The City's Policy AG-015-01 Computing and Telecommunications Facilities - General states that users are not to install software on their computers. The key control with respect to this limitation is that only computer users with administrator access have the ability to install additional software on their machines.

There are two types of administrator access that would enable a user to install software - admin ID's and standard ID's with elevated access privileges. There were 250 and 200 active ID's, respectively, at the time of the audit. Elevated access ID's provide more privileges and pose a higher risk of damage to the asset, such as potential exposure to viruses. Review of the elevated access ID's revealed that 112 out of 200 were for staff in an IT or systems related position, 62 belonged to staff who appear to be in a non-IT or technical role, and the remaining 26 were unable to be determined as they are either a generic ID or belong to staff who have since left the organization.

There is no clearly defined process for requesting this type of access, or listing of which types of job positions should have administrator access. There is also no documentation of the business reason for the staff that currently are provided the access.

Discussions with management about the admin ID's indicated that while there is an informal process in place to review the ID's on a quarterly basis, the number of ID's should be further limited to minimize the risk associated with users installing software without IT's involvement. Without effective control around this type of access there is a risk that users may install software that is not appropriate or required for their job responsibilities, and a risk of potential exposure to viruses from the unauthorized software.

Recommendation:

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s. 13(1)		

Management Response:

Please check one:

T Disagree with the findings

Please check one:

Agree with the recommendation

T Disagree with the recommendation

G.5 Enhance policies and procedures relating to software licenses

Current IT policies do not specifically outline the responsibilities and procedures around the management of software licenses. The IT department website contains a link to a software licensing policy page which prohibits the use of software in violation of a software license. IT Policy AG-015-01 Computing and Telecommunications Facilities - General covers the IT department's role with respect to ensuring that software does not adversely affect the network or compromise security. The policy also states that software is to be approved by IT and not to be installed by users themselves, and includes consequences for violation of policy.

	s project conducted a gap analysis of IT policies dations identified a need for a software licensing
s. 13(1)	
Recommendation:	
s. 13(1)	
Management Response: Please check one: ✓ Agree with the findings	Please check one:

Management Comment:

☐ Disagree with the findings

Corrective action is being taken transition the Information Technology department to comprehensive software license management based upon industry best practices.

Disagree with the recommendation

Action1: Approval has been granted for the recruitment of a regular fulltime "IT Asset Management" that will have full responsibility for creating and maintaining a software license registry, identification of all COV software assets, quarterly reconciliation of software license usage and centralization of software contracts working in conjunction with strategic sourcing. Hiring of new resource anticipated by January 31, 2013.

Action2: Commencement of a "software rationalization" project as a part of phase 3 for ITSS will identify all "licensed" and "non-licensed" software applications to determine their criteria for "discontinuance" or viability and value to business operations across the COV. Project to proceed January 2013.

Action3: Information Technology will implement new IT systems Management System (ITMS) to address software inventory management. An additional module will be acquired to track and correlate software purchases. Target April 2013