



Richmond City Council

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Richmond, Virginia

OFFICE OF THE CITY AUDITOR

REPORT # 2011-14

AUDIT

Of the

Citywide

Computer Purchases and Maintenance

June 2011

OFFICIAL GOVERNMENT REPORT

Richmond City Council

OFFICE OF THE CITY AUDITOR

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*Committed to increasing government efficiency, effectiveness,
and accountability on behalf of the Citizens of Richmond.*

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Executive Summary

The City Auditor's Office has completed an audit of the City's computer purchases and maintenance activity for the twelve months ended June 30, 2010.

Conclusion:

Auditors identified the following deficiencies:

- The current decentralized process lacks proper checks and balances to assure accountability and efficiency. The process is complex, mostly manual, and is vulnerable to the risk of errors and omissions.
- The computer procurement process can be streamlined to address most of the deficiencies of the current process. The revised process will improve recordkeeping, safeguarding of computers and allow purchase of computers based on documented needs.
- Computer leasing actions were not supported by appropriate policies or justification.
- The contract administration was deficient, leading to noncompliance with contract requirements.
- Implementing the virtual desktop initiative will significantly improve efficiencies and generate savings of up to \$500,000. Additional benefits may

be realized due to reduced personal computer maintenance costs.

A portion of these savings would be offset by costs to upgrade hardware for extra data processing and security needs.

The City Auditor's Office appreciates the cooperation of the Finance, Procurement and DIT staff. Written responses are included at the end of the report. Please contact me for questions and comments on this report.



Umesh Dalal, CPA, CIA, CIG

City Auditor

#	<i>COMPREHENSIVE LIST OF RECOMMENDATIONS</i>	<i>PAGE</i>
1	Centralize the IT procurement process within DIT to strengthen controls and accountability over the process of buying computers.	10
2	Develop policies and procedures that will: <ul style="list-style-type: none"> • instruct approved vendors to ship purchased computers directly to DIT for delivery; • distribute computers to user departments only after imaging and installing tracking software; • use the established accounting codes when accounting for computer purchases; • require all agencies to justify all computer purchase requests as part of the approval process; • require DIT to verify that all requests have been approved and properly authorized; • make DIT responsible for funds budgeted for computers and accessories; • require the retention of documented quotes obtained during the procurement process to ensure that purchases are made at the best prices; and • document how DIT updates its inventory records. 	10
3	Require Procurement Services to conduct and document periodic compliance reviews of the computer purchase process.	10
4	Develop formal policies and procedures to: <ul style="list-style-type: none"> • monitor and approve lease payments for computers; and • outline lease vs. buy IT equipment purchasing decisions. 	11
5	Require Procurement and DIT to develop contract administration procedures to: <ul style="list-style-type: none"> • monitor prices to ensure that RSS contract prices remain competitive pursuant to Procurement Policy No. 44 (Revision 1) §44-6.5, and document the results of the monitoring. • develop a checklist that identifies all contract deliverables and responsibilities (e.g., quarterly sales reports from vendors and City approval of price increases) to gain assurance of compliance and proper performance. 	13
6	Re-evaluate the virtualization findings to ensure that they are still consistent with best practices (e.g., business alignment, inventory, review the end-user population, level of customization needed for application delivery, investment cost and ramp-up time, solution lifespan), and include verifiable cost-savings before deciding whether or not to adopt this solution.	16
7	If the findings are still valid, provide adequate funding to DIT for the virtualization project.	16

Introduction

Introduction

The City Auditor's Office has completed an audit of the City's computer purchase and maintenance activity. The audit period covered the twelve months ended June 30, 2010.

The audit was conducted in accordance with Generally Accepted Government Auditing Standards promulgated by the Comptroller General of the United States. The Standards provide a reasonable basis for the conclusions regarding the internal control structure over computer purchases and the recommendations presented.

Management Responsibility

The management of the City of Richmond is responsible for maintaining relevant records and maintaining a system of internal accounting and management controls. In fulfilling this responsibility, management is required to assess the expected benefits and related costs of the control procedures.

Objectives and Methodology

The objectives of the audit were to:

- Determine the existence and effectiveness of internal controls; and
- Evaluate the efficiency, effectiveness and appropriateness of computer purchases. In addition, the auditors reviewed warranty purchases and their use in computer maintenance.

For the purpose of this audit, computers were defined as personal computers, work stations, laptops, and servers.

Auditors employed the following methodologies to complete this audit:

- Interviewed relevant personnel;
- Reviewed policies and procedures;

- Reviewed financial data, supporting documents, and data flows; and
- Conducted other tests, as deemed necessary.

Background

At the City of Richmond, departments procure computers and accessories through a partially decentralized process. The decentralized portion of the process allows City departments to purchase computers if they have the funds available in their budgets to initiate the computer purchase process.

Three departments are involved in procuring and paying for computers

In addition to the agencies purchasing computers, there are three departments involved in procuring and paying for the computers as follows:

- DIT is responsible for tracking agency requests and ensuring that the requested hardware and software components are compatible with the City's infrastructure architecture and security standards and provide the required functionality.
- Procurement facilitates the purchasing process for equipment, materials, and services required to support agency/department needs.
- The City's Finance Department is responsible for making payments to the computer vendors and maintaining an inventory list that includes City computers.

DIT informed the auditors that it keeps a list of computers that need replacement based on their age. DIT is expected to systematically replace these computers using funds appropriated for this purpose. This replacement activity is primarily a centralized process.

Observations and Recommendations

Internal Controls

According to Government Auditing Standards, internal control, in the broadest sense, encompasses the agency's plan, policies, procedures, methods and processes adopted by management to meet its mission, goals, and objectives. Internal control includes the processes for planning, organizing, directing and controlling program operations. It also includes systems for measuring, reporting and monitoring program performance.

Internal controls over computer purchases need significant improvements

Based on the results and findings of the audit methodology employed, auditors concluded that:

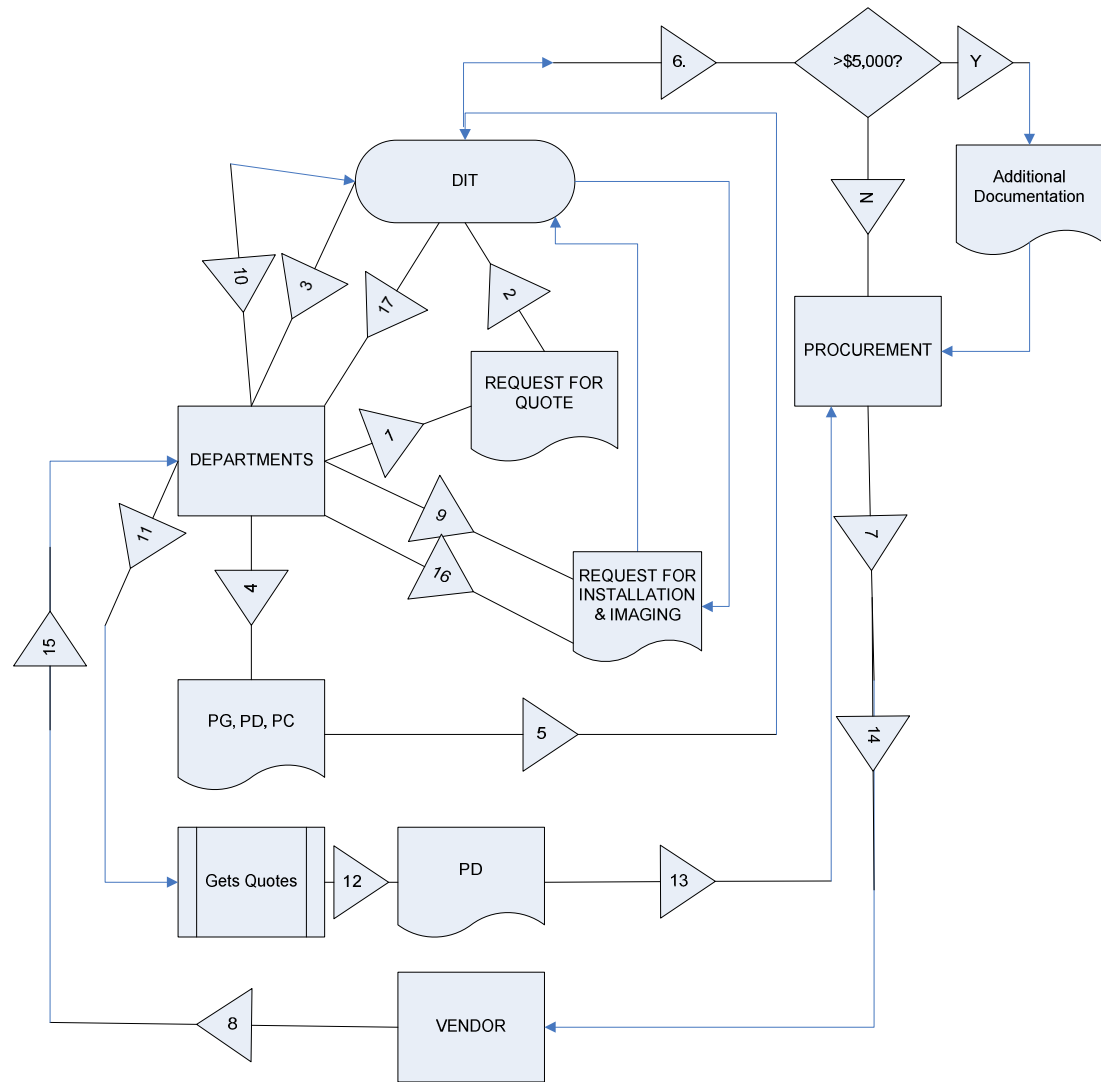
- Internal controls over computer purchases do not provide assurance of proper accountability over City resources.
- The current process has not resulted in an efficient and effective use of public resources as procurement is not managed consistently throughout the City. There are opportunities for saving money and implementing missing controls.

Current process of buying computers

The current, decentralized process lacks proper checks and balances to assure accountability and efficiencies

Due to the decentralized process of computer purchases, no single agency is responsible for ensuring that this process is conducted effectively. At the City, computers can be purchased using two processes. Users have the ability to purchase computers using DIT's help or circumvent DIT's involvement. In addition, DIT uses a life cycle replacement program. The current, decentralized process for procuring computers by users, which is depicted below, is complex, manual and prone to delays and human error:

The current process is complex, mostly manual, and is vulnerable to the risk of errors and omissions



Department procures with the help of DIT
 1 Department requests for quote from DIT
 2 DIT gets the request
 3 DIT obtains quote and gives it to the department
 4 Department enters request (RX) into Advantage (PG, PD, PC)
 5 Paper copy of request is routed to DIT for tracking and DIT approval
 6 DIT approves request; PG/PD is sent to Procurement for signature. If >\$5,000, Procurement receives/logs/reviews request documents from agency for quote and DIT approval; Procurement approves PC in Advantage and signs PC
 7 PG/PD or PC is transmitted to the Vendor
 8 Vendor delivers the products to departments or to DIT
 9 Department requests DIT for imaging and installation
 10 DIT performs imaging and installations

Department procures without help of DIT
 11 Department sometimes bypass DIT and get their own quotes
 12 Department prepares PD and release in Advantage if ≤ \$5,000
 13 PD is released by agency and transmitted to Procurement
 14 Procurement signs PD and sends to vendor
 15 Vendor delivers to the department
 16 Department requests DIT to install the computer
 17 DIT installs the computer after imaging and installing tracking software

*Weaknesses in the
current process*

*The computers are
purchased without
formal needs analysis*

*A needs analysis is
essential for managing
the total cost of
ownership of computers*

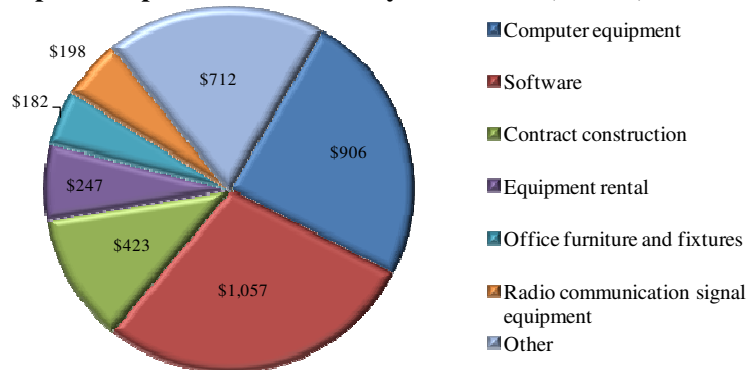
*The current process does not provide accountability over the
resources spent for computer purchases*

1. Currently, a formal needs analysis is not being performed for computer purchases. A needs analysis would identify the type and functionality of hardware that allows the user to carry out assigned duties. For example, the needs of an analyst working with large amounts of data and graphics will vary from the needs of a clerical employee. A needs analysis goes hand-in-hand with managing the total cost of owning computer equipment. Without the discipline of an objective needs analysis, there is a risk that computers may either be insufficient or may exceed the requirements of the user.
2. The agencies are not required to justify requests to purchase a computer as long as funds are available in their budget. This means better funded agencies may be able to purchase computers that exceed their needs. Other departments may have to work with old, outdated computers until they are replaced by DIT.
3. The current process for purchasing computers allows a department to bypass DIT by using an accounting code other than one of the three designated for computer expenditures. When this occurs, DIT is not aware of these transactions. DIT informed the auditors that it will image and install a computer if the computer meets or exceeds the City standards even if the transaction was not approved by DIT.
4. The decentralized process does not allow monitoring of appropriate recordkeeping of computer purchases. The City is not in a position to accurately summarize total resources spent on the acquisition of computers. If this type of basic information is not known, it is very difficult to properly manage computer purchases.

In FY 2010, the City recorded about \$3,726,000 in the commodity code 205 (an accounting code) pertaining to “purchased computer

hardware, peripherals and accessories.” As depicted in the following pie-chart, only \$906,000 (24%) of this amount represented computer equipment purchases. The remaining amount was recorded in various expenditure categories unrelated to computer purchases. There are other accounting codes established for expenditures such as software and leases.

Computer Expenditure Data Analysis FY 2010 (in '000)



Source: Finance Department

Auditors were informed that departments sometimes use budgeted amounts available in other unrelated line items to purchase computers. This practice clutters the data in the financial system. Therefore, it may not be possible to easily quantify the total amount spent on computer purchases. Accordingly, none of the departments involved perform a citywide analysis to manage these procurements.

Records for leased computers could not be located in the specific accounts set up for that purpose

5. During the audit, the auditors noted that there was no activity recorded for leased computers using the relevant accounting codes. Contrary to this, the inventory records obtained from DIT show about 400 leased computers. The auditors were not able to verify the total cost of the leased computers due to the lack of documentation.
6. Current, written policies require DIT to obtain competitive quotes from various authorized vendors. However, DIT does not obtain

There is no assurance that the computers are presently purchased at the lowest price available

quotes from multiple vendors. Therefore, there is no assurance that computers are presently purchased at the lowest price available. It was not possible to quantify the financial impact of this non-compliance.

DIT could not demonstrate receipt of contractual discounts from the vendors

7. The purpose of the current contract was to enable the City to purchase computers at certain discounts on prices approved by the City. DIT personnel could not provide evidence that discounts had been received from the vendors. Without relevant documentation, it was impossible for auditors to verify contract compliance.
8. The current paper-based, manual process is inefficient and increases the risk of delayed processing, unauthorized changes, lost documents and resources spent in handling paper documents.
9. The current process allows the departments to purchase computers, receive them and process the relevant documentation. The departments are responsible for notifying DIT to image and install the computers. However, DIT does not have a mechanism to track computer purchases that aren't sent to them for imaging. There is a risk that, if the computer is missing prior to imaging, it will not be detected by current procedures.

The City's mechanism for tracking computers does not provide assurance that all the computers purchased by departments are recorded

The Finance Department maintains a list of controllable items which includes computers. Annually, the departments are required to report their computer inventory to the Finance Department. Finance verifies the existence of the reported computers; however, this process may not detect missing items that are not reported.

10. The auditors identified that neither DIT nor Finance has a complete list of computers purchased by the City.
11. DIT does not have written policies and procedures for adding, transferring and deleting computers from its inventory records.

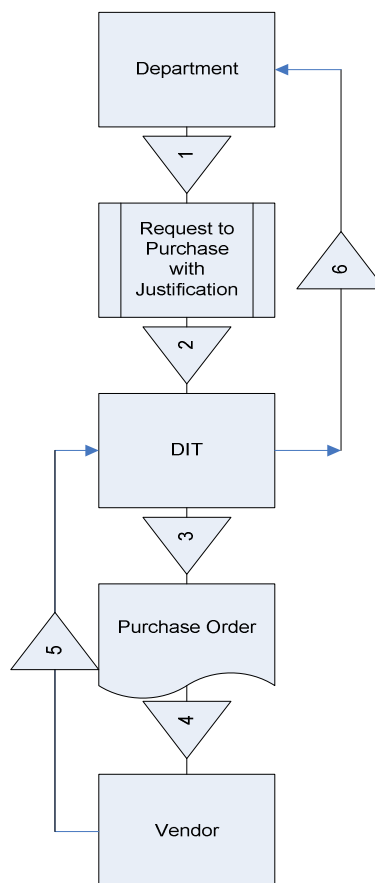
Based on the foregoing discussion, the controls over the procurement of computers appear to be weak.

Opportunity for Streamlining the Process

The computer procurement process can be streamlined to address most of the deficiencies of the current process

With current resources, it is possible to streamline and simplify the existing process. Centralizing the process of purchasing computers will improve internal controls, improve efficiencies, and mitigate many of the weaknesses noted above. Currently, DIT plays a major role in the procurement process. The following is a proposed process diagram of the streamlined procedures:

1 Departments request DIT to purchase computer or peripherals with justification
2 DIT reviews the justification and proceeds to purchase if satisfied with the need for the requested product
3 DIT obtains quotes for the product with predefined specifications suitable for the need, verifies and complies with contract terms, uses appropriate accounting codes and prepares PG
4 PG is transmitted to vendor
5 Vendor delivers the products
6 DIT images, installs tracking software, images and installs



The proposed streamlined process will improve efficiencies and hold DIT accountable for all computer purchases

The revised process will improve recordkeeping, safeguarding of computers and allow purchase of computers based on documented needs

This proposed process centralizes computer purchases within DIT. DIT will review and approve justifications and requests, sign off on all computer purchase orders, receive all computers directly from vendors, perform required imaging and installation of tracking software, update its inventory records, and administer the computer purchase contract. The proposed simplified process has the following benefits that address deficiencies of the current process:

1. Requiring DIT to use the proper use of accounting codes will ensure accurate recordkeeping of computer purchases. This information can then be analyzed as part of the planning for short and long-term demand, and for negotiation with vendors.
2. DIT will be able to evaluate all requests and justifications for the purchase to prevent the potential for the unnecessary procurement of computers.
3. The City will be able to verify if the City is receiving the best value for computer purchases using a record of quotes obtained during the process. Recently, such evidence was not available. During the audit, DIT indicated that it has begun keeping a record of quotes obtained.
4. DIT will receive all computers directly from vendors. The computers will be distributed to departments after DIT has had an opportunity to image them and install the tracking software. This will improve the controls over the safeguarding of assets.
5. The accountability for complying with City policies, contract terms and having proper controls over computer procurement will rest with DIT. Procurement will also be able to perform reviews to assure proper compliance and controls over this significant City expenditure.

Recommendations:

1. ***Centralize the IT procurement process within DIT to strengthen controls and accountability over the process of buying computers.***
2. ***Develop policies and procedures that will:***
 - ***instruct approved vendors to ship purchased computers directly to DIT for delivery;***
 - ***distribute computers to user departments only after imaging and installing tracking software;***
 - ***use the established accounting codes when accounting for computer purchases;***
 - ***require all agencies to justify all computer purchase requests as part of the approval process;***
 - ***require DIT to verify that all requests have been approved and properly authorized;***
 - ***make DIT responsible for funds budgeted for computers and accessories;***
 - ***require the retention of documented quotes obtained during the procurement process to ensure that purchases are made at the best prices; and***
 - ***document how DIT updates its inventory records.***
3. ***Require Procurement Services to conduct and document periodic compliance reviews of the computer purchase process.***

***Lease vs. Buy
Decision***

Computer leasing actions were not supported by appropriate policies or justification

There are no policies or procedures to systematically decide between leasing or buying the computers. The analysis prepared by Finance revealed that the “buy” option was cheaper than the three operating lease scenarios. Although the Finance Department claimed that the City

The City did not have computer lease documents that were supposed to be included in the contract file

chose to lease to conserve cash flow, there was no documented evidence to appropriately support this assertion. Guidance for developing these policies can be found from other jurisdictions such as the State of Texas.

The City has leased about 400 computers from a vendor. The Procurement Services Department could not produce an entire set of lease documents needed for the auditor's inspection. Therefore, it was not possible to verify if the payments made for these leases were in compliance with the lease agreements. Apparently, DIT, Finance and Procurement Services are not monitoring the leasing contract. Any overcharges due to errors or omissions may not be detected and corrected in a timely manner.

Recommendation:

4. Develop formal policies and procedures to:

- *monitor and approve lease payments for computers; and*
- *outline lease vs. buy IT equipment purchasing decisions.*

Extended Warranties

Rationale for purchasing extended warranties was not verified and may have resulted in wasted resources

DIT informed the auditors that the City has about 3,800 computers and, depending upon the yearly budget, between one-third and one-fourth are replaced annually. DIT stated that it purchased a three-year extended warranty at an additional cost of \$62 for each computer.

There is no assurance that an annual expenditure of \$59,000 for warranties benefitted the City

DIT personnel could not quantify the actual use of warranties. Therefore, there is no assurance that the warranties were used effectively. This may have resulted in unnecessary expenditures of up

to an estimated \$59,000 per year. During the audit, DIT informed the auditors that it has discontinued the acquisition of extended warranties.

Contract Compliance

The contract administration was deficient leading to noncompliance with contract requirements

The auditors identified that the City has not complied with many provisions in the contract. The table below includes the following contract provisions which were used by the auditors to verify compliance:

Compliance with the computer purchase contract is not being monitored

Contract requirement	Did the City Comply?	Observation
Vendors offer products at unit prices not in excess of established prices in effect on the contract date	NO	Price lists are not received and monitored for increases, and approval of price increases is not conducted.
Vendors' established price is that listed in their catalogs or at the market price for commercial items after applying trade discounts	NO	The City does not perform any market price analysis to check reasonableness of prices. Such reviews are also required by Richmond Supply Schedule (RSS) Procurement Policy No. 44 (Revision 1) §44-6.5 on price reasonableness. Prices for items frequently purchased are to be compared against similar items from the Federal Supply Schedule contracts and from eVA. Prices will also be compared to prices for the same product available from other RSS contractors.
Vendors notify Procurement of the amount and effective date of price increases or decreases	NO	Vendors change prices without notification.
Vendors submit written requests to Procurement for price increases and obtain formal approval prior to raising prices	NO	Procurement does not review and approve price increases.
Vendors furnish quarterly reports itemizing the dollar value of all sales under the contract for the preceding three-month period.	NO	These reports are not received for review. These reviews are also required by the RSS Procurement Policy No. 44 (Revision 1) §44.6.6 on compliance reviews.

Vendors prepare, print and distribute paper copies of their pricelists showing accepted discounts	NO	In practice, the principal vendor furnishing computers does not issue paper copies.
Vendors provide two paper copies of the authorized price list and the authorized price list on a common-use electronic medium following notification of contract award, price increase or price reduction.	NO	Paper copies are not sent. Both key vendors offer their prices electronically; however, as previously noted, vendors change prices without seeking or obtaining approval from Procurement.

Monitoring price changes is a critical task to detect unapproved price increases and take timely corrective action to ensure that the City buys computers at the lowest possible prices. By default, the City accepts prices without exercising its contractual right to approve increases. Without vigilant monitoring of prices, there is no assurance that vendors are offering the lowest prices for computers. A comparison of prices offered by two vendors indicated that the City paid an excess amount for 27 computers.

Recommendation:

5. Require Procurement and DIT to develop contract administration procedures to:

- ***monitor prices to ensure that RSS contract prices remain competitive pursuant to Procurement Policy No. 44 (Revision 1) §44-6.5, and document the results of the monitoring.***
- ***develop a checklist that identifies all contract deliverables and responsibilities (e.g., quarterly sales reports from vendors and City approval of price increases) to gain assurance of compliance and proper performance.***

***Virtual Desktop
Computer Initiative***

Implementing the virtual desktop initiative will significantly improve efficiencies and generate substantial savings

In December 2009, DIT prepared an analysis of a desktop virtualization to reduce expenses and improve systems availability. This idea would improve the management of computing at the user level and result in cost savings. However, DIT has not made much progress on the virtualization efforts. Continued delay on the virtualization initiative may result in ongoing expenditures that are not in the City's or taxpayers' best interests.

***DIT's desktop
virtualization initiative is
a good idea that would
result in cost savings***

DIT had proposed to replace a large number of City personal computers (PCs) with workstations that did not have moving parts or permanent memory called "thin client" or virtual computers. These workstations automatically connect to a server and acquire "PC-like" processing and storage capabilities. For the use of employees who are performing basic functions, (i.e. those that do not require graphics, or extensive analyses), these workstations can replace their PCs without compromising functionality. In the proposal, DIT estimates that 90% of the City's desktop users could use virtualized PCs through the use of servers.

In the virtualization process, actual processing is performed, and the data is stored on a shared server that is securely located in the data center. Some of the major benefits are:

- The PC user being able to access applications from multiple locations;
- Continuous backup prevents accidental loss of user data;
- Prevention of unauthorized software on PCs;
- Reduction in the number of individual software license charges;
- Better system availability due to the use of more reliable server hardware;

- Elimination of patching thousands of individual PCs, and
- Easier disaster recovery.

Thin clients also have some disadvantages:

- Thin clients depend entirely on a server to access programs and store data files. If a network is down, the thin client cannot access the server or work “offline”.
- Desktop virtualization can have upfront costs because it requires the additional purchase of:
 - software that allows multiple operating systems to run on a host computer concurrently;
 - servers;
 - centralized storage infrastructure; and
 - upgraded network infrastructure to support more bandwidth.

The Gartner Group, a well-known information technology consulting group and publisher of best practices, noted in its December 2010 research publication that:

- Server-based computing, or virtual computing, is a mature client architecture that delivers total cost of ownership that is 8% to 13% lower than that of a locked and well-managed PC deployment, and up to 44% to 47% lower than that of an unmanaged desktop deployment (i.e., users can install their own software and there is no server involved with the desktop’s operating system);
- Virtual computing offers the lowest cost mechanism for delivering desktop applications to users; and
- Virtual computing costs are spread across server, storage and data center infrastructure components.

Based on industry expert's research, there is a potential for the City to save \$500,000 annually

In the Gartner study, thin clients cost \$350 on average and have a six-year life. The City's computers have an estimated average cost of about \$850 and a four-year life.

Using the above data, the City's hardware costs will be reduced by about \$500,000 annually. A portion of these savings would be offset by any costs incurred to upgrade servers and other equipment needed to handle any extra data processing and security requirements. According to the Gartner Group, the additional benefit may occur due to reduced personal computer maintenance costs.

Recommendation:

- 6. Re-evaluate the virtualization findings to ensure that they are still consistent with best practices (e.g., business alignment, inventory, review the end-user population, level of customization needed for application delivery, investment cost and ramp-up time, solution lifespan), and include verifiable cost-savings before deciding whether or not to adopt this solution.***
- 7. If the findings are still valid, provide adequate funding to DIT for the virtualization project.***

MANAGEMENT RESPONSE FORM
DEPARTMENT OF INFORMATION AND TECHNOLOGY

COMPUTER PURCHASES AND MAINTENANCE AUDIT - JUNE 2011 Appendix A

#	RECOMMENDATION	CONCUR Y N	ACTION STEPS
1	<i>Centralize the IT procurement process within DIT to strengthen controls and accountability over the process of buying computers.</i>	Y	1) DIT will work with Procurement, Budget and Finance to develop a comprehensive strategy for centralization and ensure the appropriate controls and accountability over the computer purchase process are in place. 2) The new ERP system (RAPIDS) will provide automated workflow for computer and computer related purchases, all procurements that include IT will be automatically directed to DIT for approval prior to purchasing. This type of workflow does not exist in our current system.
	TITLE OF RESPONSIBLE PERSON		TARGET DATE
	Procurement and DIT Managers		1-Feb-13
	IF IN PROGRESS, EXPLAIN ANY DELAYS		IF IMPLEMENTED, DETAILS OF IMPLEMENTATION
#	RECOMMENDATION	CONCUR Y N	ACTION STEPS
2	<i>Develop policies and procedures that will: a) instruct approved vendors to ship purchased computers directly to DIT for delivery; b) distribute computers to user departments only after imaging and installing tracking software; c) use the established accounting codes when accounting for computer purchases; d) require all agencies to justify all computer purchase requests as part of the approval process; e) require DIT to verify that all requests have been approved and properly authorized; f) make DIT responsible for funds budgeted for computers and accessories; g) require the retention of documented quotes obtained during the procurement process to ensure that purchases are made at the best prices; and h) document how DIT updates its inventory records.</i>	Y	a) As the contracts are renegotiated all approved vendors will be instructed to ship purchased computers to DIT. b) All PCs will then be imaged either by DIT or as pre-arranged with the manufacturer. In all cases the equipment will be imaged and tracking software will be installed before it is delivered to the department. c) Accounting codes that have been established and communicated by Finance will be used for computer purchasing. This will be re-emphasized in policy. d) The IT Equipment life cycle replacement schedule will provide overall governance of PC purchases. Exceptions will be justified on a case by case basis. e) DIT will work with Procurement to ensure all requests for computers are properly approved and authorized. f) DIT will work with Budget to centralize funds for life cycle replacement of computers and accessories in DIT (Not in non-departmental account). g) Quotes demonstrating the competitive bidding process will be attached to the corresponding purchase order. h) DIT and Finance will review and update IT equipment inventory procedures and responsibilities.
	TITLE OF RESPONSIBLE PERSON		TARGET DATE
	DIT Managers, Finance, Budget and Procurement		1-Nov-12
	IF IN PROGRESS, EXPLAIN ANY DELAYS		IF IMPLEMENTED, DETAILS OF IMPLEMENTATION

#	RECOMMENDATION	CONCUR Y N	ACTION STEPS
3	<i>Require Procurement Services to conduct and document periodic compliance reviews of the computer purchase process.</i>	Y	Department of Procurement Services will conduct and document RSS compliance reviews pursuant to Procurement Policy No. 44.6.5(Revision 1).
	TITLE OF RESPONSIBLE PERSON		TARGET DATE
	Procurement		31-Oct-11
	IF IN PROGRESS, EXPLAIN ANY DELAYS		IF IMPLEMENTED, DETAILS OF IMPLEMENTATION
#	RECOMMENDATION	CONCUR Y N	ACTION STEPS
4	<i>Develop formal policies and procedures to:</i> <ul style="list-style-type: none"> • <i>monitor and approve lease payments for computers; and</i> • <i>outline lease vs. buy IT equipment purchasing decisions.</i> 	Y	As part of well-managed government, a citywide lease versus buy analysis model is being developed for all lease vs. buy decisions. This effort is being led by the CAO's management analysis group. Each department will be required use the model in their decision making and as part of the approval process for the procurement.
	TITLE OF RESPONSIBLE PERSON		TARGET DATE
	CAO Office, Procurement		31-Oct-11
	IF IN PROGRESS, EXPLAIN ANY DELAYS		IF IMPLEMENTED, DETAILS OF IMPLEMENTATION
#	RECOMMENDATION	CONCUR Y N	ACTION STEPS
5	<i>Require Procurement and DIT to develop contract administration procedures to:</i> <ul style="list-style-type: none"> • <i>monitor prices to ensure that RSS contract prices remain competitive pursuant to Procurement Policy No. 44 (Revision 1) §44-6.5, and document the results of the monitoring.</i> • <i>develop a checklist that identifies all contract deliverables and responsibilities (e.g., quarterly sales reports from vendors and City approval of price increases) to gain assurance of compliance and proper performance.</i> 	Y	When the new RSS contracts are negotiated Procurement will ensure that evidence of pricing and discounts is included in vendor quotes. As noted in #3 Procurement will conduct and document quarterly vendor reviews to ensure compliance with contract deliverables. DIT will comply with the contract administration procedures established by Procurement.
	TITLE OF RESPONSIBLE PERSON		TARGET DATE
	Procurement		31-Oct-11
	IF IN PROGRESS, EXPLAIN ANY DELAYS		IF IMPLEMENTED, DETAILS OF IMPLEMENTATION

#	RECOMMENDATION	CONCUR Y N	ACTION STEPS
6	<i>Re-evaluate the virtualization findings to ensure that they are still consistent with best practices (e.g., business alignment, inventory, review the end-user population, level of customization needed for application delivery, investment cost and ramp-up time, solution lifespan), and include verifiable cost-savings before deciding whether or not to adopt this solution.</i>	Y	Virtualization has been a part of DIT's technology strategy since 2007. Proof of concepts were conducted for Virtual Desktops in 2008. Implementing a Virtual Desktop solution is an existing objective included as part of DIT's strategic plan with the deployment scheduled for FY12.
	TITLE OF RESPONSIBLE PERSON		TARGET DATE
	IF IN PROGRESS, EXPLAIN ANY DELAYS		IF IMPLEMENTED, DETAILS OF IMPLEMENTATION
#	RECOMMENDATION	CONCUR Y N	ACTION STEPS
7	<i>If the findings are still valid, provide adequate funding to DIT for the virtualization project.</i>	Y	The proposed and adopted budget for FY12 already includes funding for Virtual Desktops for the City of Richmond.
	TITLE OF RESPONSIBLE PERSON		TARGET DATE
	IF IN PROGRESS, EXPLAIN ANY DELAYS		IF IMPLEMENTED, DETAILS OF IMPLEMENTATION