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**OFFICE OF THE STATE AUDITOR'S REPORT
ON THE EXAMINATION OF INFORMATION TECHNOLOGY
AND FINANCIAL-RELATED CONTROLS
AT THE QUINCY HOUSING AUTHORITY**

July 1, 2005 through May 23, 2008

**OFFICIAL AUDIT
REPORT
JUNE 23, 2008**

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INTRODUCTION

The Quincy Housing Authority (QHA), which was established through Section 3 of Chapter 121B of the Massachusetts General Laws, provides for the construction, acquisition, rehabilitation and management of rental housing for low-income persons residing in Quincy, Massachusetts. The QHA is governed by a five-member Board of Directors, one whom is appointed by the Governor and four who are appointed by the Mayor of the City of Quincy, including one tenant representative. The QHA is comprised of seven departments; administration, finance, maintenance, leased housing, modernization, support services, and tenant services. The QHA operates from a central office located at 80 Clay Street in Quincy and manages eight development sites throughout the city. At the time of our audit, the QHA was staffed by approximately 70 employees.

The QHA's primary mission is to provide stable, affordable housing for low and moderate-income persons and create an environment to transform from dependency to economic self-sufficiency. In addition to providing public housing, the QHA makes affordable housing available through several rental assistance programs, such as the Federal Section 8 voucher program and the state-funded Massachusetts Rental Voucher Program. Furthermore, through its assistance program, the QHA administers approximately 1,100 rental assistance vouchers. The QHA is comprised of 1,560 public housing units; of which 909 are state-owned housing and 651 are federal housing. The QHA state-funded units consist of family and elderly/disabled housing and housing for special needs. The QHA also administers a program of certificates and vouchers to assist low-income persons and families in leasing apartments in privately owned housing. Of the 1,100 vouchers, approximately 953 represent the voucher allocation to the QHA and the remainder is administered by the QHA for other housing authorities. The QHA is governed by housing regulations issued by the United States Department of Housing and Urban Development (HUD) and the Massachusetts Department of Housing and Community Development (DHCD).

For the annual fiscal period ending June 30, 2007, the QHA received \$14,438,239 for federal operating subsidy and grants as well as \$4,689,132 for state operating subsidy and grants. In addition, the QHA reported rental income for both federal and state programs totaling \$6,114,525 for that period.

At the time of our audit, the QHA's computer operations were supported by five file servers and 65 microcomputer workstations located at the QHA central office as well as the development sites. The QHA uses three file servers to provide both a local area network (LAN) and a wide area network (WAN). In addition, QHA uses two file servers dedicated to the Authority's databases. The QHA's main primary application system is a vendor-supplied, integrated application known as HAB. The HAB application

software provides data processing functions using a module-based system for tenant processing, purchasing, inventory, work orders, and financial accounting and reporting. The initial installation of the HAB application system at QHA began in September 2007 with the implementation stage in process at the end of our audit. It is anticipated that when fully implemented, HAB will provide a fully integrated processing environment for all QHA functions. At the time of our audit, the Authority was using the Computerized Housing Authority Software (CHAS) to a limited extent.

The Office of the State Auditor's examination was limited to a review of certain IT general controls over and within the QHA's IT environment and selected financial-related controls.

AUDIT SCOPE, OBJECTIVES, AND METHODOLOGY

Audit Scope

In accordance with Chapter 11, Section 12 of the Massachusetts General Laws, we performed a follow-up audit of certain information technology (IT) and financial-related controls at the Quincy Housing Authority. Our audit, which was conducted from December 4, 2007 through May 23, 2008, covered the period of July 1, 2005 through May 23, 2008. The scope of the audit consisted of an evaluation of the status of prior audit results in our IT audit report, No. 2004-0762-4T, issued June 28, 2004, regarding documented IT-related policies and procedures, system access security, business continuity planning and off-site storage, maintenance of adequate operating reserve accounts, and the management of unit vacancies. In addition, we examined QHA's compliance with annual reviews of tenant selection and rent determination documentation as required by DHCD.

Audit Objectives

The primary objective of our audit was to determine whether corrective action had been taken with respect to our prior audit results and to review selected IT and financial-related controls. We sought to determine whether the QHA's IT-related internal control environment, including policies and procedures, provided reasonable assurance that the Authority's IT-related objectives would be achieved. Our objective regarding system access security for user account management was to determine whether adequate controls were in place and in effect for the activation, maintenance, and deactivation of access privileges to ensure that only authorized personnel had access to the QHA's automated systems. Furthermore, we sought to determine whether QHA management was actively monitoring the management of user accounts.

We sought to determine whether adequate disaster recovery and business continuity plans were in place to provide reasonable assurance that computer functions would be regained within an acceptable period should a disaster render the QHA's computerized functions inoperable. In addition, we determined whether adequate on-site and off-site storage was being maintained for backup copies of mission-critical and important computer-related media.

Regarding our follow-up examination of financial-related controls, we sought to determine whether QHA management had adequate controls in place and in effect to ensure compliance with Department of Housing and Community Development (DHCD) regulations concerning the maintenance of adequate operating reserve balances, tenant selection and eligibility, and the preparation for occupancy and the filling of vacant housing units. We also sought to determine whether the QHA was complying with the

annual review of all tenant files as required by the code of Massachusetts regulations “Eligibility and Selection Criteria” 760 CMR 5.00.

Audit Methodology

To evaluate whether corrective action was taken on our recommendations presented in our prior audit report, No. 2004-0762-4T, we performed pre-audit work that included a review of prior audit work papers and gaining an understanding of QHA’s current IT environment. We reviewed our prior recommendations regarding documented IT-related policies and procedures, system access security, business continuity and off-site storage. We also examined the extent to which QHA had implemented our recommendations regarding the maintenance of adequate operating reserve accounts and the management of unit vacancies. In addition, we examined QHA’s compliance with annual reviews of tenant selection and rent determination documentation as required by DHCD.

Regarding our review of the adequacy of IT-related policies and procedures, we interviewed senior management and staff to identify IT functions and responsibilities and evaluated the degree to which documented policies and procedures addressed those functions. We reviewed the IT-related policies and procedures to assess whether they provided guidance to Authority staff.

Our tests of system access security included a review of procedures used to authorize, activate, and deactivate access privileges to application systems and IT capabilities available through microcomputer workstations connected to the Authority’s network. To determine whether only authorized employees were accessing the automated systems, we obtained a system-generated user list from QHA for individuals granted access privileges to the automated systems and compared it to the current personnel listing. We performed a test of user profiles and access privileges for all employees compared to individual job functions and responsibilities. In addition, we conducted interviews of a sample of users to confirm job responsibilities and the level of system access granted to them. We reviewed control practices regarding logon ID and password administration by evaluating the extent of documented policies and guidance provided to the QHA personnel. We determined whether all employees authorized to access the automated systems were required to change their passwords periodically and, if so, the frequency of the changes.

To assess the adequacy of business continuity planning, we determined whether any formal planning had been performed to resume computer operations should the network application systems be inoperable or inaccessible. In addition, we determined whether the criticality of application systems had been assessed, and whether risks and exposures to computer operations had been evaluated. Furthermore, to evaluate the adequacy of controls to ensure that copies of application and system software and data files would be

available for recovering automated systems and network services, and to protect data files through the backup of off-site magnetic media and hardcopy files, we interviewed QHA staff regarding the generation and storage of backup copies of magnetic media and we performed a site visit to the off-site storage location.

To assess whether the QHA was adhering to DHCD procedures for the preparation for occupancy and filling vacant housing units in a timely manner, we performed selected tests to determine the unit turnaround time for vacancies. We identified the number of vacant units over the audit period, reviewed records of preparation work, and determined whether the preparation work was completed within DHCD guidelines.

To determine whether the QHA was maintaining the minimum and maximum operating reserve account balances as required by DHCD, we examined a fifteen-month period from July 1, 2006 through September 30, 2007 to determine the average monthly reserve account balance. We then compared this average account balance to the required minimum account balances prescribed by DHCD for all housing authorities to determine whether the QHA was in compliance.

To determine whether QHA had complied with DHCD regulations regarding tenant selection and rent determination processes, we interviewed QHA management and performed selected tests. We judgmentally selected 36 tenant files to verify that required documentation consisting of a signed lease agreement, a CORI determination, an annual rent determination review, income verification, allowable deductions and unit inspection reports were present in each file in accordance with DHCD guidelines.

Our audit was conducted in accordance with Generally Accepted Government Auditing Standards (GAGAS) of the United States and generally accepted industry practices. Audit criteria used in the audit included management policies and procedures, DHCD regulations, 760 Commonwealth of Massachusetts Regulation (CMR) 5.00 "Eligibility and Selection Criteria", 760CMR 8.00 "Privacy and Confidentiality and 760 CMR 6.00 "Occupancy Standards and Tenant Participation For State-Aided Housing." Our audit criteria also included IT management control practices as outlined in the Information Systems Audit and Control Association's "Control Objectives for Information and Related Technology" (CobiT).

AUDIT CONCLUSION

Based on our audit, we found that the Quincy Housing Authority (QHA) had documented IT-related policies and procedures to provide adequate guidance for IT functions and that internal controls were in place to provide reasonable assurance that access security objectives, including password administration, would be met. We also found that the Authority was in compliance with the Department of Housing and Community Development's (DHCD) regulations regarding the management of unit vacancies. However, our audit revealed that QHA's operating reserve balances continued to be below required levels prescribed by the DHCD and that control practices for business continuity planning and off-site storage needed to be strengthened.

Regarding our examination of IT-related policies and procedures, we determined that the Authority had taken corrective action in developing and implementing documented policies and procedures as recommended in our prior report, No. 2004-0762-4T, issued June 28, 2004. We found that the policies and procedures provided adequate guidance to Authority staff.

Our review of system access security revealed that controls for the HAB application system provided reasonable assurance that users were properly authorized and that only authorized users had access to the QHA's programs and data files residing on the file servers and workstations. We found that there were formal policies and procedures in effect for the activation, deactivation and changes to the level of user privileges. However, we found that QHA needed to adhere to existing policies and procedures in changing user passwords. Our audit tests revealed that the passwords for the HAB application system had not been changed for 182 days over the stated policy requirement. During the course of the audit, management took corrective action immediately when informed about the time lapse in changing passwords. We found that password composition had been expanded from three (3) to eight (8) alpha/numeric characters to conform to the Commonwealth's Information Technology Department standards.

With respect to business continuity planning and off-site storage of computer media, we found that controls needed to be strengthened to provide reasonable assurance that processing of the Authority's mission-critical application can be regained should systems be rendered inoperable. Our audit disclosed that a formal disaster recovery and business continuity plan was not sufficiently detailed or tested for the timely restoration of computer operations with regard to the HAB application. In addition, we found that QHA lacked adequate controls over off-site storage for weekly back-up copies of computer media for application systems and data files. Our audit revealed, contrary to sound business practices, that no records or logs were being maintained when the back-up tapes were sent to the off-site location. We also

observed that once at the off-site location, the tapes were placed on an employee's desk rather than in a secure, fireproof safe.

With respect to our examination of financial-related areas, we found that the Authority has continued to experience difficulty in maintaining minimum operating reserve amounts as required by DHCD. Specifically, we found that over a period of fifteen months, beginning July 2006 through September 2007, the QHA operated below the minimum reserve amount by an average of \$732,735.

Our review of the vacant unit turnaround time for fiscal year 2007 and through February 29, 2008 for fiscal year 2008 disclosed that the Authority had made considerable improvements in preparing and leasing housing units on a timely basis. Our prior audit revealed that QHA had a unit turnaround time averaging 371 days for state family units. Our current audit test revealed that the unit vacancy turnaround time for family units had been reduced to an average of seven (7) days. As a result, the Authority had reduced the loss of rental income from \$181,000 reported in fiscal year 2004 to \$8,100 in fiscal year 2007 and \$4,700 in fiscal year 2008 (through February 29, 2008). We acknowledge that increased funding support from DHCD has contributed to the Authority's ability to prepare units for occupancy and to fill those units in a more timely manner. We commend management's efforts in implementing corrective action to reduce the vacancy rate at the QHA.

Based on the results of our audit tests, we concluded that controls were in place and in effect at the QHA to provide reasonable assurance that the tenant selection and rent determination processes are in compliance with the DHCD regulations.

AUDIT RESULTS

1. Maintenance of Adequate Operating Reserve Accounts

Our audit revealed the QHA has not maintained adequate operating reserves for the State Project 4001, which provides housing for families, the elderly and handicapped persons. As a result, the minimum operating reserve amounts as required by DHCD were not being met. Our examination revealed that for the fifteen months between July 2006 and September 2007, the QHA under-funded the operating reserve account by an average monthly total of \$732,735. Over the period, the operating reserve account has been under-funded by amounts ranging from a low of \$393,715 in May 2007 to a high of \$1,108,835 in September 2006.

The Department of Housing and Community Development serves as the oversight agency to local housing authorities in the Commonwealth. The DHCD's 'Fiscal Year 2007 Budget Guidelines', issued September 2006, state that each housing authority is to maintain operating reserves within a minimum and maximum range as specified in the calculations delineated in the regulations.

The QHA's ability to maintain minimum operating reserves has been impacted by a lack of funding increases for its operating budgets from fiscal years 2005 through 2006. During this period the QHA did not receive increases for its operational budget while the Authority was experiencing significant increases in utility costs, property and liability insurance, workman's compensation insurance, and employee health insurance premiums. By not maintaining a minimum operating reserve balance, the Authority was hindered from being able to make necessary capital improvements for its existing housing stock.

The QHA may realize further financial pressure as a result of increasing pension costs. Our audit revealed that the Quincy Retirement Board increased the pension assessment of the QHA beginning in fiscal year 2002 as a result of expenses associated with the privatization of the Quincy City Hospital. The method of assessment used by the Quincy Retirement Board increased QHA's pension liability by approximately 50 percent. At the conclusion of our audit fieldwork, litigation between the Quincy Retirement Board and the Quincy Housing Authority over the increased assessment in pension costs remained unresolved and was in the process of being adjudicated. We believe that if the QHA were deemed responsible for the increases in pension liability, it will experience significant financial distress, placing in jeopardy its ability to perform its mission.

Recommendation:

We recommend that QHA management, in conjunction with DHCD, develop a comprehensive financial recovery plan to address the problems that have contributed to the under-funding of its overall operating

reserve account. We recommend that the QHA work with the City of Quincy to develop a strategy to cover past and future pension liabilities.

Auditee's Response:

The Quincy Housing Authority shares the Auditors' concerns relative to the Maintenance of Adequate Operating Reserve Accounts. The Authority continues to work cooperatively with DHCD to control its cost and explore options for increasing revenues, as the two methods available to build an adequate reserve account. The Auditor has appropriately recognized the significance of the pending pension litigation between the Authority, the City of Quincy and the Quincy Retirement Board. As pointed out, the Authority's pension obligations were significantly impacted as a result of a Home Rule Petition adopted by the State Legislature at the request of the City of Quincy. That legislation provided enhanced retirement benefits to the employees of a major city department. As the only other governmental body which makes up the Quincy Retirement System, the housing authority ought not to be burdened by that extra cost.

Auditor's Reply

We acknowledge QHA management's efforts to address the deficiencies in the operating reserves by aggressively monitoring and controlling expenses. We urge QHA management to continue to work closely with DHCD in exploring options to optimize revenues and maintain adequate operating reserve balances. We urge the Authority, the City of Quincy and the Quincy Retirement Board to seek an amicable resolution to the pending litigation issues currently being adjudicated in Norfolk Superior Court to ensure that QHA can continue to provide safe, decent, and affordable housing to eligible applicants.

2. Business Continuity Planning and Off-Site Storage of Magnetic Media

We determined that the QHA had not developed a formal, comprehensive disaster recovery and business continuity plan for restoring processing functions in the event that automated systems were rendered inoperable or inaccessible. At the time of our audit, the Authority was aware of the need for business continuity planning, but had not developed a comprehensive strategy.

A business continuity plan should document the QHA's recovery strategies with respect to various disaster scenarios. Without a comprehensive, formal, and tested recovery strategy for the QHA's various application systems, the QHA might experience delays in re-establishing the processing of mission-critical system functions, such as tenant files and accounts receivable, should a disaster occur. The lack of a detailed, tested plan to address the resumption of processing might render the availability of systems and data files should IT systems be damaged or become inaccessible. If the LAN were damaged or destroyed, Authority staff would be significantly limited in their ability to access mission-critical, essential, and confidential data, including tenant medical and financial information.

The objective of business continuity planning is to help ensure timely recovery of mission-critical functions should a disaster cause significant disruption to computer operations. Business continuity planning for information services is part of business continuity planning for the entire organization. Generally accepted business practices and industry standards for computer operations support the need for the QHA to have an ongoing business continuity planning process that assesses the relative criticality of information systems and develops appropriate contingency and recovery plans. To that end, QHA should assess the extent to which it is dependent upon the continued availability of information systems for all required processing or operational needs and develop its recovery plans based on the critical aspects of its information systems.

Our audit revealed, contrary to sound business practices, that no records or logs were being maintained to record when the back-up tapes were sent to the off-site storage location. We also observed that the back-up tapes were left on an employee's desk at the off-site location rather than being stored in a secure, fireproof safe. The QHA should perform an assessment of criticality and risk of their systems and IT processing environment to clearly identify the impact of lost or reduced processing capabilities.

Recommendation:

We recommend that QHA management establish a framework of procedures to ensure that the criticality of all automated systems is evaluated and that business continuity planning is adequately addressed. Based on the results of the assessment, QHA should proceed with the development of a written business continuity plan for their mission-critical and essential functions supported by technology.

Once the plan has been developed, it should be tested, then periodically reviewed and updated for any changing conditions. The QHA should specify the assigned responsibilities for maintaining the plan and for supervising the implementation of the tasks documented in the plan. Management should specify who should be trained in the implementation and execution of the plans under all emergency conditions and who will perform each required task to fully implement the plans. Furthermore, copies of the completed business continuity plan should be distributed to appropriate staff members. A copy of the plan should also be kept in a secure, off-site location.

Regarding the off-site storage of back-up copies of magnetic media, we recommend that QHA implement a process to record the transfer and storage of back-up tapes and that the tapes be stored in secure manner.

Auditee's Response:

The Quincy Housing Authority has drafted and has in place a computer services disaster recovery and business continuity plan. We will continue to review and update that plan on an ongoing basis.

The Authority is currently replacing the emergency generator which serves the building which houses its administrative offices. That generator provides electrical service to the core functions of the building such as emergency lighting and elevator service. The new installation will also provide back up electrical service to the Authority computer system, which in addition to back up battery service will reduce the likelihood of information technology loss.

As to the off-site storage of back-up copies of magnetic media, the Authority has obtained a fire proof file cabinet and is developing a protocol to fully record the secure transfer of back up tapes. It is expected that a new system will be fully implemented by the end of the current month.

Auditor's Reply

We acknowledge that the QHA is aware of the need for business continuity planning for its mission-critical and essential application systems. However, we believe that the current draft plan has not been sufficiently detailed or tested for the timely restoration of computer operations with regard to the HAB application for restoring processing capabilities in a timely manner. We suggest that the disaster recovery strategy be expanded to cover a wider range of possible scenarios and provide more detailed information on courses of action to recover IT systems. Understandably the disaster recovery plan should be tested to provide assurance of its viability. We suggest that the QHA conduct a thorough risk assessment as a sound first step. The business continuity plan that is developed should address various disaster scenarios and clearly identify cooperative efforts among staff and QHA vendors to assist in recovery efforts. Modeling a business continuity strategy by incorporating generally accepted disaster recovery and business continuity practices and CobiT standards and guidelines should help ensure that all key elements of a comprehensive business continuity strategy are addressed. Once developed, the business continuity plan should be reviewed and updated annually, or whenever there are significant changes to processing requirements, risks, or the QHA's IT infrastructure.

We are pleased that offsite storage of backup media will be strengthened through the use of a fireproof file cabinet, and we believe that the development of a new system to record the transfer of backup tapes at the off-site location will assist QHA management's ability to recover lost or damaged computer media.

APPENDIX
Status of Prior Audit Results

Control Area	Control Objective	Control Activities	Status of Control	Documented	Adequacy of Control
IT - Related Policies and Procedures	To determine whether adequate policies and procedures were in effect over IT-related activities to ensure that IT operations are managed effectively and efficiently. To review the organizational controls over and within the information technology environment.	Analyzed documented and approved IT policies and procedures.	Corrected	Yes	QHA management has developed documented policies and procedures for IT operations.
System Access Security	To determine whether adequate controls were in place to ensure that only authorized personnel had access into the QHA's automated systems and to determine whether management was actively monitoring password administration.	Conducted access security test and user profile examination. Policy confirms alpha/numeric passwords.	Corrected	Yes	Controls in place. Passwords need to be changed in accordance with existing policy.
Business Continuity Planning & Off-site storage	To determine whether business continuity controls would provide reasonable assurance that mission-critical and essential computer operations could be regained within an acceptable period of time should business functions be	Analyzed existing recovery strategies.	Not fully corrected	Partial	QHA management needs to continue development of a comprehensive business continuity plan.

	interrupted or seriously impacted.				
Control Area	Control Objective	Control Activities	Status of Control	Documented	Adequacy of Control
Maintenance of Operating Reserves	To verify that the QHA reserves fall within the DHCD regulations for maximum and minimum allowable amounts for the state project 4001(Family, Elderly and Handicapped).	Tested operating reserve account balances to determine if minimum levels were being maintained.	Not Corrected	Yes	Operating reserves approximately 700K below DHCD minimum requirements.
Management of Unit vacancies	To determine whether QHA management had adequate controls in place and in effect to ensure compliance with the Department of Housing & Community Development (DHCD) regulations concerning preparation for occupancy and the filling of vacant housing units.	Tested unit vacancy turnaround time for compliance with DHCD regulations.	Corrected	Yes	Vacancy rate is well within DHCD guidelines for unit vacancy turnaround.