



Office of the Comptroller
November 19, 2010

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Comptroller

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To the Honorable Common Council
City of Milwaukee

Dear Council Members:

As a component of the Comptroller's comprehensive information systems audit work plan, the datacenter audit was conducted in August and September of 2010 and involved onsite visits of City operated datacenters (secure rooms that contain server equipment on which city systems are housed). The audit included physical tours of nine datacenters throughout the City's divisions including; Water Department, Department of Public Works, Police Department, Fire Department, Department of City Development, Employees' Retirement System, Library, Information Technology Management Division and The Municipal Court.

Datacenter controls are an important and tangible part of ensuring that the City's computer systems are available and that City services connected to computing resources are not impaired. A datacenter must therefore maintain high standards for assuring the security, integrity and functionality of its hosted computer environment.

All Datacenter's were evaluated on the criteria of Datacenter Physical and Environmental Control Standards published by the Information Systems Auditing and Control Association. The physical and environmental control areas were evaluated through physical tours and the examination of datacenter access listings and maintenance documentation.

Controls evaluated during the datacenter audit were;

- Flood Prevention
- Fire Prevention
- Environmental Controls
- Access Controls
- Continuity Controls

Flood prevention controls that were evaluated included the presence of raised floors, drains and leak detection systems. Fire prevention controls that were evaluated included the presence of smoke detectors, fire extinguishers and fire suppression systems. Environmental controls that were evaluated included the presence of dedicated air conditioning, temperature/humidity controls, environmental alerts,

secondary battery backup devices and proper cable management. Access controls that were evaluated included the review of listings for restricted physical access to the room and the presence of physical locks. Continuity controls that were evaluated included the regular backup of data and system configurations, datacenter capacity and transportation of backup data to an alternate site.

The audit indicates that the City's various datacenters are generally in good operational standing and that physical, environmental and operating controls related to the datacenters are operating effectively with few exceptions. Two of the City's datacenters had no control exceptions identified. The remaining seven datacenters had several exceptions identified as a result of this audit and recommendations for improvement have been communicated to the appropriate City personnel.

1. Four datacenters currently allow excessive privileged physical access.

Recommendation: Management should periodically review key card access listings and remove users or vendors who have no current business need to have access to the datacenter.

2. Five datacenters do not currently have fire extinguishers located within the room.

Recommendation: At least one ABC rated fire extinguisher should be clearly accessible inside the datacenter. These fire extinguishers should be serviced once a year.

3. Three datacenters do not regularly take backups to an alternate site.

Recommendation: When data is backed up on physical media like tapes, CDs or DVDs it should be taken to an alternate secure site at least once a week.

4. Three datacenters do not have visitors sign into a visitor log for accountability.

Recommendation: All visitors to the datacenter should sign into a visitor log where their name, company, date and time of visit are recorded to provide a record of accountability.

5. One datacenter experienced temporary elevated temperatures which can damage machines.

Recommendation: If a dedicated air conditioning unit is not providing adequate temperature control for several consecutive days than a secondary cooling unit should be installed in the datacenter.

6. A City-wide guideline for appropriate controls to protect a datacenter does not exist.

Recommendation: The City's Chief Information Officer should develop and distribute a datacenter control guideline that lists the physical, environmental and operating controls that should be in place in within the City's datacenters.

Detailed datacenter score cards were sent to all datacenter IS managers. Written management responses to recommendations made for 6 out of 7 datacenters have been received by the Comptroller's Office from City departments. IS managers responsible for the Milwaukee Police/Fire datacenter have not yet responded. Recommendations have been acknowledged by the various divisions and the Comptroller's Office is continuing to work with various datacenter owners on improving their controls.

All City divisions who participated in this audit should be commended for their availability and cooperation throughout the datacenter visits. The Comptroller thanks all parties involved in this audit for their enthusiastic cooperation with the auditor.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael J. Morics", written in a cursive style.

W. MARTIN MORICS
Comptroller

CC: All Division heads of audited departments
Nancy Olson, CIO