



Village of Ellenville Information Technology

Report of Examination

Period Covered:

June 1, 2013 — May 31, 2014

2014M-278



Thomas P. DiNapoli

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State of New York Office of the State Comptroller

Division of Local Government and School Accountability

January 2015

Dear Village Officials:

A top priority of the Office of the State Comptroller is to help local government officials manage government resources efficiently and effectively and, by so doing, provide accountability for tax dollars spent to support government operations. The Comptroller oversees the fiscal affairs of local governments statewide, as well as compliance with relevant statutes and observance of good business practices. This fiscal oversight is accomplished, in part, through our audits, which identify opportunities for improving operations and Village governance. Audits also can identify strategies to reduce costs and to strengthen controls intended to safeguard local government assets.

Following is a report of our audit of Village of Ellenville, entitled Information Technology. This audit was conducted pursuant to Article V, Section 1 of the State Constitution and the State Comptroller's authority as set forth in Article 3 of the New York State General Municipal Law.

This audit's results and recommendations are resources for local government officials to use in effectively managing operations and in meeting the expectations of their constituents. If you have questions about this report, please feel free to contact the local regional office for your county, as listed at the end of this report.

Respectfully submitted,

*Office of the State Comptroller
Division of Local Government
and School Accountability*

Introduction

Background

The Village of Ellenville (Village) is located in the Town of Wawarsing in Ulster County and has a population of approximately 4,100 residents. General fund expenditures for the 2013-14 fiscal year were approximately \$3.9 million, which were funded primarily through real property taxes, State aid and user charges.

The Village is governed by an elected Board of Trustees (Board) comprising the Mayor and four Trustees. The Village contracted with an information technology (IT) consultant who administers network performance, computer systems repair, systems setup and configuration programming and diagnostics. The Treasurer serves as the administrator of the Village's financial software.

Objective

The objective of our audit was to determine if computerized data and assets were properly safeguarded. Our audit addressed the following related question:

- Have Village officials implemented effective internal controls over computerized financial data to safeguard Village assets?

Scope and Methodology

We examined the Village's internal controls relating to its computerized data and assets for the period June 1, 2013 through May 31, 2014. Our audit identified areas in need of improvement concerning IT controls. Because of the sensitivity of some of this information, certain vulnerabilities are not discussed in this report but have been communicated confidentially to Village officials so they could take corrective action.

We conducted our audit in accordance with generally accepted government auditing standards (GAGAS). More information on such standards and the methodology used in performing this audit is included in Appendix B of this report.

Comments of Local Officials and Corrective Action

The results of our audit and recommendations have been discussed with Village officials, and their comments, which appear in Appendix A, have been considered in preparing this report. Village officials generally agreed with our recommendations and indicated they planned to initiate corrective action.

The Board has the responsibility to initiate corrective action. A written corrective action plan (CAP) that addresses the findings and recommendations in this report should be prepared and forwarded to our office within 90 days, pursuant to Section 35 of the General

Municipal Law. For more information on preparing and filing your CAP, please refer to our brochure, *Responding to an OSC Audit Report*, which you received with the draft audit report. We encourage the Board to make this plan available for public review in the Clerk's office.

Information Technology

The Village's IT system is a valuable and essential part of the Village's operations, used for Internet access, email and maintaining data and financial records. The potential consequences of a system failure can range from inconvenience to severe problems and even small disruptions in processing can require extensive time and effort to evaluate and repair. Accordingly, Village officials should establish internal controls over the IT system to help ensure that Village assets are protected against waste, loss and misuse. Effective IT controls include policies and procedures over user access rights, disaster recovery, data backups, remote access and server room protection.

Village officials have not designated a financial software administrator who is independent of the financial recordkeeping nor restricted users' access to the financial system based on employee job responsibilities. In addition, Village officials do not review audit logs to monitor users' activities when accessing the financial software. The Board also has not developed comprehensive policies and procedures to protect critical financial data. As a result, the Village has an increased risk that inappropriate transactions could be processed without being detected.

User Access

To protect computer resources from unauthorized use or modification, user rights should be assigned to officials and employees based on their job responsibilities. Administrator rights allow users to create, delete and modify files, folders or settings, including the assignment of users' access rights. Generally, an administrator is designated as the person who has oversight responsibility and control of a system or application with the ability to add new users and change users' passwords and access rights. A good system of controls requires that the administrator's position be separate from the financial processes and functions. Also, to ensure proper segregation of duties and internal control, it is important for the computer system to be configured to limit users access rights only to the functions necessary to fulfill the individuals' job responsibilities. Such access controls prevent users from being involved in multiple aspects of financial transactions. Village officials should periodically review user access rights to help ensure that access is properly controlled and revise those rights as necessary.

The Board has not designated an IT administrator who is independent of the financial recordkeeping functions. Instead, the Treasurer is the designated IT administrator. The Treasurer has full administrative access rights to the Village's financial software. Therefore, she has

unrestricted access to all functions within the software package, can add new users to the system and can change users' access rights without oversight.

Additionally, we found that the three other employees who use the financial software did not have restricted access to only those functions needed to perform their job duties. The Village's financial software has seven modules: payroll, utility billing, purchasing, general ledger, general receipts, accounts payable and real property tax. The Village Clerk (Clerk), accounts payable/payroll clerk and Village Manager's secretary can create, update and delete data in the general receipts, general ledger and purchasing modules that they do not use or need to access for their positions. The Clerk also has read and write access functions in the payroll module, which she does not need to perform her duties.

By designating an administrator who is involved in financial recordkeeping and not restricting users' rights to only the access needed to complete their daily tasks, the Village has an increased risk that inappropriate transactions could be made in the computerized financial system and remain undetected.

Audit Log

It is essential for financial software applications to provide a means of determining, on a constant basis, who is accessing the system and what transactions are being processed. Audit logs (also referred to as audit trail reports) provide information such as the identity of each person who has accessed the computer system, time and date of the access, activity that occurred and time and date of the activity. Management or management's designee should review these logs on a routine basis to monitor the activity of users who access the Village's applications and data. Reviewing audit logs can help accomplish several security related objectives, including individual accountability, reconstructing events, intrusion detection and problem monitoring.

We obtained an audit trail report for two¹ of the seven financial software modules the Village uses. Although the reports provide adequate details to identify the necessary transaction information to perform a review, Village officials do not review these reports. The other five software modules do not have the capability to generate audit log reports.

Although the Village's financial software allows audit logs to be generated in two modules, Village officials have not implemented procedures to periodically produce and review these audit logs. As a result, their ability to detect and address unauthorized activities is limited.

¹ The payroll and utility billing modules

Administrative Rights

Users with administrative rights to computer systems have complete control over those systems. When a user logs in as an administrator, the user's profile, including desktop and any programs that the user initiates, will run with the full access rights and permissions of an administrator. A user with administrative rights can make system-wide changes, including installing programs of their own choosing and manipulating settings configured for security purposes. Additionally, any program that a user with administrative rights runs will inherently run with the same rights, either intentionally or accidentally. To help protect the Village's computer network and data it holds, users should not be authorized to use an administrative account for normal tasks. If administrative rights are needed for certain duties of a user's job, a separate account with administrator rights should be created and used only when needed.

We reviewed three² of the Village's 15 computers and found that users have administrator rights to those computers. Also, the Clerk, Treasurer and the Village Manager's secretary all have local administrator rights to the Village's server. According to the Village's IT consultant, all users on the 15 computers have administrator rights to give them the ability to update software as needed.

Because the Village allows computer users to have administrative rights to their computers and the Village's server, users could intentionally or unintentionally reduce or remove security measures. This would allow malware installed on the computer system to run at a higher privilege under a user account with administrator rights, resulting in a higher risk of data loss or compromise.

Policies and Procedures

Computer policies and procedures should define appropriate user behavior and describe the tools and procedures to protect data and information systems. The Board is responsible for creating an appropriate internal control environment over IT security. It should provide oversight and leadership by establishing computer policies and procedures that take into account people, processes and technology and communicating these policies and procedures throughout the organization. To accomplish this, the Board should adopt policies addressing key security areas, such as acceptable computer use, data and virus protection, password security, disposing of and sanitizing equipment, remote access and acceptable Internet use. For example, the Board is responsible for adhering to New York State Technology Law which requires villages to establish a breach notification policy

² We chose to review these three computers because they are used by employees who are authorized to perform online banking or other online financial activities. The computers are assigned to specific people – the Village Manager's secretary, Treasurer and accounts payable/payroll clerk – and are generally used by these individuals, but could be used by others.

to describe how they would notify residents whose personal, private and sensitive information was, or is reasonably believed to have been, acquired by a person without a valid authorization.

The Board has not adopted written computer-related policies or established procedures to ensure the security of the Village's IT system and data. For example, the Board has not adopted policies or implemented procedures to address breach notification, disaster recovery, system updates, acceptable computer use, system security, internal user access, data backups and protecting personal, private and sensitive information.

Although comprehensive computer-related policies do not guarantee the security of the Village's electronic information, the lack of such policies significantly increases the risk that hardware and software systems and the data they contain may be lost or damaged by inappropriate access and use. Additionally, by not adopting a breach notification policy, Village officials and employees may not understand or be prepared to fulfill their legal obligation to notify affected individuals in the event that private information is compromised.

Recommendations

Village officials should:

1. Designate an individual as the administrator of the financial software who does not perform or monitor the Village's financial recordkeeping.
2. Restrict users' computer access to only those duties needed to perform their job responsibilities.
3. Implement procedures to periodically produce and review audit logs.
4. Limit the use of administrator accounts and ensure users use them only when facets of their job require it.

The Board should:

5. Adopt written IT policies and procedures to address breach notification, disaster recovery, acceptable use, system security, internal user access, data backups and protecting personal, private and sensitive information.

APPENDIX A

RESPONSE FROM VILLAGE OFFICIALS

The Village officials' response to this audit can be found on the following pages.

We have redacted references to sensitive information that was communicated confidentially to Village officials.

Village of Ellenville

**Government Center
2 Elting Court
Ellenville, New York 12428**
Phone: 845-647-7080, Fax: 845-647-7171
www.villageofellenville.com

December 1, 2014

Office of the State Comptroller
Division of Local Government & School Accountability
PSU – CAP Submission
110 State Street, 12th Floor
Albany, NY 12236

Re: Village of Ellenville
Information Technology
2014M-278 IT

Dear Sir or Madam:

Please be advised the Village of Ellenville generally agrees with the audit findings.

This audit response is also serving as the CAP (Corrective Action Plan).

The Village's consulting Information Technology firm, [REDACTED] specifically, [REDACTED]
[REDACTED] has and will implement corrections.

This response has been approved by the Village Board of Trustees on November 24, 2014.

1 - Audit Recommendation:

[REDACTED]

Implementation Plan of Action

[REDACTED]

Implementation Date
November 21, 2014

Person Responsible for Implementation

1 a – Designate an individual as the administrator of the financial software who does not perform or monitor the Village’s financial recordkeeping.

Implementation Plan of Action

The Village Manager, Joseph P. Stoeckeler, Jr. has been approved by the Village Board of Trustees as the administrator of all the financial software.

Implementation Date

November 24, 2014

Person Responsible for Implementation

Joseph P. Stoeckeler, Jr., Village Manager

2 - Audit Recommendation:

Implementation Plan of Action

Implementation Date

November 21, 2014

Person Responsible for Implementation

2a – Restrict users’ computer access to only those duties needed to perform their job responsibilities.

Implementation Plan of Action

All access to computer programs not necessary to perform an employee job responsibilities have been reviewed and corrected accordingly.

Implementation Date

November 21, 2014

Person Responsible for Implementation

[REDACTED]

3 – Audit Recommendation:

[REDACTED]

Implementation Plan Action

[REDACTED]

Implementation Date

November 21, 2014

Person Responsible for Implementation

[REDACTED]

3a – Implement procedures to periodically produce and review audit logs

Implementation Plan Action

A procedure has been implemented for the Village Manager, Joseph P. Stoeckeler, Jr., to review audit logs on a monthly basis.

Implementation Date

November 25, 2014

Personal Responsible for Implementation

Joseph P. Stoeckeler, Jr., Village Manager

4 – Audit Recommendation:

[REDACTED]

Implementation Plan Action

[REDACTED]

Implementation Date

November 21, 2014

Person Responsible for Implementation

[REDACTED]

4b – Limit the use of administrator accounts and ensure users use them only when facets of their job require it.

Implementation Plan Action

Access to administrator accounts and users have been reviewed and corrected accordingly.

Implementation Date

November 21, 2014

Person Responsible for Implementation

[REDACTED]

5 – Audit Recommendation:

[REDACTED]

Implementation Plan Action

[REDACTED]

Implementation Date

November 21, 2014

Person Responsible for Implementation

[REDACTED]

5a – Adopt written IT policies and procedures to address breach notification, disaster recovery, acceptable use, system security, internal user access, data backups and protecting personal, private and sensitive information.

Implementation Plan Action

The Village of Ellenville is in the process of composing and adopting written policies for all facets of our Information Technology.


Implementation Date

December 31, 2014


Person Responsible for Implementation

Joseph P. Stoeckeler, Jr., Village Manager

Signed:



Joseph P. Stoeckeler, Jr.
Village Manager



December 1, 2014

Xc: Office of the State Comptroller
Newburg Regional Office
33 Airport Center Drive
Suite 103
New Windsor, NY 12533

APPENDIX B

AUDIT METHODOLOGY AND STANDARDS

The objective of our audit was to determine if computerized financial data and assets were properly safeguarded for the period June 1, 2013 through May 31, 2014. To achieve our audit objective and obtain valid audit evidence, we performed the following audit procedures:

- We interviewed Village officials, employees, the IT consultant and IT vendor to gain an understanding of the IT environment and internal controls in place.
- We reviewed user access reports and compared user access rights to statements of usage by employees.
- We reviewed one month of each audit log report that was generated by the financial software.
- We reviewed the Village policy book and Board minutes for existing IT policies and procedures.
- We used audit software to analyze information on the Village's servers.

We conducted this internal controls audit in accordance with GAGAS. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objective. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objective.

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