



Village of Alfred

Information Technology

Report of Examination

Period Covered:

June 1, 2015 – July 7, 2017

2017M-236



Thomas P. DiNapoli

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State of New York Office of the State Comptroller

Division of Local Government and School Accountability

April 2018

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 Board 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 the Village of Alfred, 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 Alfred is located in the Town of Alfred in Allegany County and has a population of approximately 4,200. The Village provides services to its residents, including general government support, police protection, water, wastewater treatment, road and sidewalk maintenance, and code enforcement. Village appropriations for the 2016-17 fiscal year totaled approximately \$2.3 million.

The Village is governed by an elected Board of Trustees (Board), which is composed of four trustees and a Mayor. The Board is the legislative body responsible for oversight and general management of the Village's operations including establishing policies and procedures for information technology (IT). The Mayor serves as chief executive officer and is responsible for the Village's day-to-day operations.

Objective

The objective of our audit was to assess the Village's IT environment. Our audit addressed the following related question:

- Are the Village's IT assets and computerized data properly secured and safeguarded?

Scope and Methodology

We examined the Village's IT environment for the period June 1, 2015 through July 7, 2017. Our audit also evaluated the adequacy of certain IT controls. Because of the sensitivity of some of this information, we did not discuss the results in this report, but instead communicated them confidentially to Village officials.

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 are included in Appendix B of this report. Unless otherwise indicated in this report, samples for testing were selected based on professional judgment, as it was not the intent to project the results onto the entire population. Where applicable, information is presented concerning the value and/or size of the relevant population and the sample selected for examination.

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 findings and indicated they would take 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 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

Computerized data is a valuable resource that Village officials rely on to make financial decisions and report to State agencies. If the computers on which this data is stored fail or the data is lost or altered, either intentionally or unintentionally, the results could range from inconvenient to severe. Even small disruptions can require extensive time, effort and expense to evaluate and repair. Village officials are responsible for designing and implementing policies and procedures to mitigate these risks. Protecting IT assets is especially important as malicious attempts to harm computer networks or gain unauthorized access to information through viruses, malware and other types of attacks continue to increase.

With so much of the Village's operations recorded and stored using IT assets, it is important for the Board to have appropriate controls in place and set the tone for the importance of proper protection of IT equipment and information. As the Village continues to rely more and more on computerized transactions, this will continue to increase in importance to overall Village operations. The Board should set this tone by adopting and monitoring compliance with appropriate policies.

Village officials have not set an appropriate tone for the protection of IT assets. Officials have not implemented appropriate policies and procedures to ensure IT assets and computerized data are properly safeguarded. The Village did not have written policies or procedures detailing the acceptable use of IT assets and the backing up of critical data. The Village also does not have a recovery plan or breach notification plan and has not provided adequate IT security training to employees. Consequently, there is an increased risk that productivity could be reduced, IT assets and information could be compromised and affected individuals may not be notified. In addition, the Village could suffer service interruptions and there could be a lack of individual accountability for various aspects of the IT environment.

Acceptable Use Policy

Computer use for Internet browsing and email increases the likelihood of exposure to malicious software that may compromise data confidentiality. Village officials can limit such vulnerabilities by restricting personal use of IT assets. An acceptable computer use policy should be in place which describes appropriate and inappropriate use of IT resources and explains expectations concerning personal use of IT equipment and user privacy. It can also be used to hold users accountable for improperly using Village resources.

The Board has not adopted an acceptable use policy. We reviewed all nine Village computers used outside of the Police Department for non-business use and found evidence of personal use on five computers. Such use included personal email, social media, shopping and storage of personal media files.

When employees access websites for nonbusiness or inappropriate purposes through the Village's network, productivity is reduced and there is an increased risk that Village assets and users' information could be compromised through malicious software infections.

Data Backup

Backup procedures are a necessary part of IT contingency planning and often critical for restoring operations quickly and effectively following service disruption. Procedures should define the frequency and scope of backups, the location of stored¹ backup data and the specific method for backing up. In addition, it is important that backup data files and restoration software be routinely tested.

Village officials have not established adequate data backup procedures. The server and financial data are backed up on a regular basis,² but the backups are maintained onsite and have not been tested.

Without comprehensive data backup procedures, which include periodically restoring backed-up data files, Village officials cannot be sure that all critical data is being backed up or that the backups can be used to successfully restore critical systems or data.

Disaster Recovery Plan

A disaster recovery plan (DRP), sometimes referred to as a business continuity plan or business process contingency plan, describes the plans, policies, procedures and technical measures for the recovery of IT operations after a destructive event – whether a natural disaster (such as a flood) or human error, hardware failure or malfunctioning software caused by malware or a computer virus. An efficient DRP would allow the Village to quickly resume its mission critical functions. The content, length and resources to prepare a plan depend on the scope of the organization's computerized operations. Some best practices include:

- Assembling a team for drafting a disaster recovery plan;
- Identifying and prioritizing critical business processes;
- Developing and distributing the plan to responsible parties;

¹ Backup files should be kept in a secure offsite location to avoid loss from an event that could damage the Village's IT system.

² The Village's server is backed up daily and financial data is backed up weekly.

- Training personnel to execute the plan;
- Testing the plan; and
- Periodically reviewing and revising the plan to ensure it still meets organizational needs.

A DRP should also provide for a backup power source to allow an organization to continue to provide needed services not only during a disaster, but also through any loss of power to the server.

The Board has not developed a DRP. Consequently, in the event of a disaster, the Village could lose important data and incur a serious interruption in operations.

Breach Notification Policy

New York State Technology Law requires the Village to have a breach notification policy or local law that requires certain individuals to be notified when there is a system security breach involving private information.³

The Board has not developed and adopted a breach notification policy or local law because it was unaware of this requirement. As a result, if private information is compromised, officials may not understand or fulfill the Village’s legal obligation to notify affected individuals.

Security Awareness Training

Security awareness training communicates IT security expectations to employees and helps individuals recognize security concerns and react appropriately. It also helps to ensure that employees understand their individual responsibilities.

Village employees were not provided with IT security awareness training to ensure they understood how they could help protect IT assets and computerized data. Without adequate training of employees, the Village’s IT assets are more vulnerable to loss and misuse.

Disposal of Assets

Sensitive and confidential information and software must be cleared from computer hard drives, disks, thumb drives and other equipment and media before those items are disposed of or transferred to another use. The Village should have policies and procedures in place for the secure disposal of all equipment containing electronic information.

³ Private information is defined as information that, if lost, compromised or disclosed, could result in substantial harm, embarrassment, inconvenience or unfairness to an individual. Private information includes Social Security numbers, bank account numbers, healthcare information, credit and debit card numbers and driver’s license information.

The Board has not adopted a policy or procedures for the sanitization of hard drives and other electronic media before disposing of them. While onsite, we observed three Village computers that were no longer in use with no immediate plans for disposal. If sensitive and confidential information is not fully removed, it may be recovered and inappropriately used or disclosed by individuals with access to the discarded equipment and media.

Recommendations

The Board should:

1. Develop and adopt an acceptable use policy, distribute this policy to all Village personnel and monitor IT usage.
2. Develop and adopt comprehensive policies and procedures for backing up data and disposing of IT assets.
3. Develop and adopt a disaster recovery plan.
4. Develop and adopt a breach notification policy or local law.
5. Ensure all necessary Village personnel receive IT security awareness training and that the training is updated whenever the IT policies are updated.
6. Ensure sensitive information is adequately removed from devices prior to their disposal or immediately after they are removed from service.

APPENDIX A
RESPONSE FROM LOCAL OFFICIALS

The local officials' response to this audit can be found on the following page.

February 7, 2018

Office of the State Comptroller
Jeffrey D. Mazula, Chief Examiner
295 Main Street, Suite 1032
Buffalo, NY 14203-2510

Dear Chief Examiner Mazula,

On behalf of the Village of Alfred, I am writing you to acknowledge receipt of the Office of the State Comptroller's Draft Report of Examination of Information Technology Policies for the Village of Alfred for the period from July 1, 2015 through July 7, 2017. In response to the findings and recommendations communicated through the draft report received on January 9, 2018 and discussed during the exit conference on January 16, 2018, the Village will develop and implement a corrective action plan to address each potential concern.

The Village of Alfred would like to thank you and your staff for your recommendations and expertise. Our goal in local government is to efficiently manage operations and provide transparency while ensuring our residents continue to receive excellent services at the lowest possible cost without negatively affecting their quality of life.

Sincerely,

Peter McClain
Deputy Mayor

APPENDIX B

AUDIT METHODOLOGY AND STANDARDS

To achieve our audit objective and obtain valid evidence, our audit procedures included the following:

- We interviewed Village officials to obtain an understanding of IT operations and security.
- We inquired about policies and procedures related to acceptable computer use, data backups, disaster recovery plans, breach notifications and disposal of assets.
- We assessed whether Village personnel have received security awareness training.
- We examined nine computers for specific activities such as Internet use and Internet history.

We conducted this performance 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.

APPENDIX C

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