



Office of the Washington State Auditor

Pat McCarthy

Performance Audit

Opportunities to Improve City of Maple Valley Information Technology Security

March 9, 2017



Report Number: 1018778

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Introduction

Government organizations have become increasingly dependent on computerized information systems to carry out their operations. These systems are used to process, share and store sensitive and confidential information, including personal and financial data, in order to deliver services to residents.

Risks to a local government's information technology (IT) environment go beyond the activities of hackers stealing credit card numbers or Social Security numbers, or malware being placed to disrupt communications. Errors or misuse of the system by employees or contractors can also jeopardize the operation of any entity that relies on computers and networks.

Furthermore, research by Verizon Wireless in the 2016 Data Breach Investigation Report shows that the public sector experienced the most cyber security incidents and the fourth most confirmed data breach incidents of any industry in 2015. A 2016 study by the Ponemon Institute found that government pays an average of \$86 per record lost in a data breach.

To help Washington's local governments protect their IT systems, we are offering them the opportunity to participate in a performance audit designed to assess whether there are opportunities to improve their IT security.

The City of Maple Valley chose to participate in this audit.

Scope and methodology

The performance audit we conducted was designed to answer the following questions:

- Do the local government's IT security policies, standards and procedures align with leading practices?
- Has the local government implemented effective IT security practices to protect its information and are they consistent with leading practices?

Comparing the City's IT security program to leading practices

We hired subject matter experts to compare the City's IT security policies, procedures and practices to leading practices in this area, and identify any improvements that could make them stronger. The leading practices we used for our comparison were primarily based on the IT security standards developed and used by the U.S. government. These standards are written and maintained by the National Institute of Standards and Technology (NIST) in Special Publication 800-53, Revision 4.

In conducting our analysis, we also reviewed documentation and conducted interviews with City staff.

Evaluating effective implementation of IT security practices

To determine if the City has implemented effective IT security practices, our subject matter experts used customized software scripts to determine if controls were implemented properly and functioning effectively.

Additionally, our subject matter experts conducted tests on the City's IT infrastructure and ranked the identified weaknesses by the severity and ease in which the identified weakness could be exploited, based on their professional experience.

We gave City management the results of the tests as they were completed, then conducted follow-up testing to determine if they had successfully mitigated the weaknesses we identified.

Audit performed to standards

We conducted this performance audit under the authority of state law (RCW 43.09.470), approved as Initiative 900 by Washington voters in 2005, and in accordance with Generally Accepted Government Auditing standards (December 2011 revision) issued by the U.S. Government Accountability Office. 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 objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. See **Appendix A**, which addresses the I-900 areas covered in the audit.

Next steps

Our performance audits of local government programs and services are reviewed by the local government's legislative body and/or by other committees of the local government whose members wish to consider findings and recommendations on specific topics. Representatives of the State Auditor's Office will review this audit with the City of Maple Valley's legislative body in Maple Valley, Washington. The public will have the opportunity to comment at this hearing. Please check the City of Maple Valley website for the exact date, time and location. The State Auditor's Office conducts periodic follow-up evaluations to assess the status of recommendations and may conduct follow-up audits at its discretion.

Audit Results

The results of our audit work and recommendations were communicated to management of the City of Maple Valley for their review, response and action. We found that, while the city's IT policies and practices partially align with industry leading practices, there are areas where improvements can be made. The City of Maple Valley has already addressed the most significant issues we identified, and is continuing to make improvements.

Because the public distribution of tests performed and test results could increase the risk to the city, distribution of this information is kept confidential under RCW 42.56.420 (4), and under Generally Accepted Government Auditing standards, Sections 7.40-43.

Recommendations

To help ensure the City of Maple Valley protects its information technology systems and the information contained in those systems, we make the following recommendations:

- Continue remediating identified gaps.
- Revise the City's IT security policies and procedures to more closely align with leading practices.

Auditor's Remarks

The State Auditor's Office recognizes the City of Maple Valley's willingness to volunteer to participate in this audit, demonstrating its dedication to making government work better. It is apparent the city's management and staff want to be accountable to the citizens and good stewards of public resources. Throughout the audit, they fostered a positive and professional working relationship with the State Auditor's Office.

Auditee Response



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March 9, 2017

Pat McCarthy
State Auditor
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Olympia, WA 98504-0021

Dear Ms McCarthy:

The City of Maple Valley appreciates the opportunity to review and respond to the State Auditor's Office performance audit report "Opportunities to Improve City of Maple Valley Information Technology Security."

We would like to say thank you for this amazing opportunity. The City of Maple Valley prides itself in its dedication to its citizens and being good stewards of all public resources. We truly appreciate all the hard work put in by your team to help government work better together and in providing us with a truly valuable resource that will help us continue our efforts towards improving our IT Security Program.

It was a pleasure to work with Peg Bodin, Aaron Munn, and other staff from your office as well as consultants who evaluated Maple Valley's information services infrastructure. We have been continually impressed with the professionalism and collaborative approach taken by your office in our many interactions.

Thank you for recognizing the measures we have already taken to protect our IT systems from numerous threats. We are grateful for the time and dedication of your staff and the subject matter experts and all of their efforts to better our current IT security posture and recommend opportunities for improvement. Many of the recommendations have already been put into place and have strengthened our IT security program. We remain committed to continuous improvement to address the recommendations in the report.

Sincerely,

Viveka Lazor
Information Services Manager
City of Maple Valley

Appendix A: Initiative 900

Initiative 900, approved by Washington voters in 2005 and enacted into state law in 2006, authorized the State Auditor’s Office to conduct independent, comprehensive performance audits of state and local governments.

Specifically, the law directs the Auditor’s Office to “review and analyze the economy, efficiency, and effectiveness of the policies, management, fiscal affairs, and operations of state and local governments, agencies, programs, and accounts.” Performance audits are to be conducted according to U.S. Government Accountability Office government auditing standards.

In addition, the law identifies nine elements that are to be considered within the scope of each performance audit. The State Auditor’s Office evaluates the relevance of all nine elements to each audit. The table below indicates which elements are addressed in the audit. Specific issues are discussed in the Results and Recommendations sections of this report.

I-900 element	Addressed in the audit
1. Identify cost savings	No. The audit did not identify measurable cost savings. However, strengthening IT security could help the City avoid or mitigate costs associated with a data breach.
2. Identify services that can be reduced or eliminated	No. The audit objectives did not address services that could be reduced or eliminated.
3. Identify programs or services that can be transferred to the private sector	No. The audit objectives were focused on improving the City’s information system program.
4. Analyze gaps or overlaps in programs or services and provide recommendations to correct them	Yes. The audit compares the City’s IT security controls against leading practices and makes recommendations to align them.
5. Assess feasibility of pooling information technology systems within the department	No. The audit did not assess the feasibility of pooling information systems, but focused on the City’s IT security posture.
6. Analyze departmental roles and functions, and provide recommendations to change or eliminate them	Yes. The audit evaluates the roles and functions of IT security at the City and makes recommendations to better align them with leading practices.
7. Provide recommendations for statutory or regulatory changes that may be necessary for the department to properly carry out its functions	No. The audit did not identify a need for statutory or regulatory change.
8. Analyze departmental performance, data performance measures, and self-assessment systems	Yes. Our audit examined and made recommendations to improve IT security controls at the City.
9. Identify relevant best practices	Yes. Our audit identified and used leading practices published by the National Institute of Standards and Technology to assess the City’s IT security controls.