



CITY OF KIRKLAND
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MEMORANDUM

To: Kurt Triplett, City Manager
From: Brenda Cooper, Chief Information Officer
Date: March 7th, 2014
Subject: City Council Study Session: Information Technology Topics

RECOMMENDATION

Council reviews this memo and attached documentation regarding Information Technology and asks questions or provides comments and input. There are no other specific actions being requested of Council at this time.

BACKGROUND DISCUSSION

The City's information technology investments have grown significantly over time, and now almost all city staff depend on software systems to help with some or all of their work. The annual IT study session is designed to brief Council about important IT topics, keep Council aware of the work of the IT department, and provide Council with "peeks" into the future.

There are two parts to this memo: A security update section and brief status on a number of IT projects. The study session content will complement this memo, and will consist of a security training session designed specifically for Council and a brief discussion on new technologies that will impact the city in the future. Should Council desire, more information can be provided on request regarding any of the project topics listed below.

Security

IT Security is a serious topic. For example, in 2013 alone:

- [The Washington State Administrator of the Courts suffered a data breach](#) where up to 160,000 social security numbers and one million driver license numbers may have been accessed.
- [The hacktivist group Anonymous compromised an internal system at the Federal Reserve](#) and obtained information about bankers.
- At least thirty-eight million active users had information stolen when [Adobe was hacked](#).
- [The Target data breach](#) affected more than one hundred and ten million customers, and appears to have started with an email "phishing" attack that snared an employee at an HVAC system vendor used by Target.
- Closer to home, [NORCOM also suffered a potential data breach](#). That investigation is still ongoing, and while no data loss has actually been confirmed, it is believed that a public-facing FTP server was compromised and set up to be used as a spam server.

The listed breaches above are only representative. [Data security company Sophos](#) sums up 2013 by saying that over 800 million records were exposed through a variety of attacks.

The City of Kirkland is constantly under attack:

- In the last 30 days, 592,700 email messages came in to the city, but only 143,700 were considered legitimate email. The rest are a mix of spam, virus vector emails, and other suspicious email.
- 26% of the city's outbound web requests were blocked as suspicious sites, such as known malware sites.
- When staff installed an intrusion prevention system a few months ago, the software immediately uncovered traffic from China that was inside of our firewall (our first layer of protection) and was attempting to scan our websites, probably looking for a way to break into systems.

The City is audited on a number of security topics through the Washington Cities Insurance Authority every year, and also performs a broader security audit every few years. The WCIA security audit qualifies the city for cyber-insurance and the other audits are part of how city staff strives to continue to meet PCI (credit card industry security) and CJIS (Criminal Justice Information Systems) compliance requirements.

Kirkland is also a participant in a regional security program known as Prisem (not to be confused with an NSA program of the same name). Prisem collects logs from the border routers of participants and analyzes potential threats on a regional level. Prisem data is shared with the Washington State Fusion Center, which is related to the Department of Homeland Security.

During the budget process following a similar IT study session in mid-2012, the City Council approved the use of one-time funds to address some of the recommendations that came from the last external security audit for the 2013/2014 budget. These funds allowed for hiring of a network staff person to be devoted half time to security and the other half to other network tasks. Council also approved \$130,000 in CIP funds to be spent on security software and hardware. So far we've spent about \$94,000 to acquire the intrusion detection and prevention system.

Since that study session, the Information Technology department has:

- Paid for training and certification so that the city now has two CISSP (Certified Information Systems Security Professional) staff.
- Reviewed and updated the security policy for all city staff and is preparing city-wide training.
- Created and approved a security policy for vendors which binds vendors to security practices which are similar to the city's security practices.
- Installed an Intrusion Detection and Prevention System which helps identify and stop outside entities from breaking into city systems.
- Encrypted the hard drives on all mobile devices (which is why Council now has to enter a PIN when they reboot their computers).
- Worked with HR to obtain cyber-security breach insurance from the Washington Cities Insurance Authority.

Additional work remains to be completed, including more policy work, the actual delivery of training to all city staff, installation of a log analyzer system, and continued tuning of the systems and practices that have been recently installed.

Another external security assessment is budgeted to occur in late in 2014 or early 2015.

The need for dedicated information security staff will remain beyond this budget period.

Update on Major Systems and Projects

The Information Technology department is quite busy. In addition to the major projects which will be included in this report, there are two other categories of work.

- Much IT Staff time is spent on maintenance and daily activity. These are tasks like returning help desk calls, supporting Council meetings, updating 200+ GIS layers, performing GIS data analytics for better decision making, replacing aging computers and other equipment, ensuring that databases and applications are available and reliable, helping business teams with business process improvement, performing routine updates for the 70 applications that the city supports, and managing reporting.
- There are major city initiatives underway that also require significant IT staff time. For example, staff is now preparing to install network and other systems into and support the Public Safety Building and to help with the move of Police into the new building. IT also supports the Kirkland 2035 and the Cross-Kirkland Corridor outreach efforts, and works on the city's security program initiatives mentioned above.

The section below provides brief updates on major projects which are either recently completed, underway, or are in the planning stages. It should be noted that most of these projects are not completed entirely by IT, but also require significant work, championship, and investment by other department business staff. Staff welcomes questions about any of these projects during the study session.

Recently Completed

Moved Fire Inspections from New World Systems to FireRMS system

NORCOM chose not to utilize New World Systems for Fire Records or Inspections. This made it necessary to move the data Fire personnel had put into New World into a Kirkland system until NORCOM chooses and implements a new system. Staff moved Kirkland Fire data out of New World into the city's existing FireRMS system, and helped the Fire Department implement Fire inspection tracking. This provided a usable solution for Fire until NORCOM can move forward with a regional Fire project.

Upgraded MyBuildingPermit.com to allow for acceptance of electronic documents

The eCityGovAlliance's major initiative last year was to accept more complex permit applications through the regional online permit application, MyBuildingPermit.com (MBP). This represented a large amount of work getting complex permits and applications configured in the new system, as well as changing existing interfaces between MBP and Energov. The new functionality went live July 15, 2013 and Fire and Building began to use the system shortly after in August 2013. Planning started to use the expanded capabilities in January of this year. The new features have been well received by customers, whose most frequent comment is that they hope MBP will provide even more permit and application types in the future.

Developed and Implemented a GIS CIP system

Council requested a way for citizens to both see and suggest capital improvement projects. City GIS staff developed an interactive online system to meet this purpose. So far, there have been 320 unique comments logged into the database. This provides an interactive tool for people to tell the city what they hope Kirkland will work on.

Developed and Implemented Kirkland Maps

The Development Services team identified a business need to put more city data with rich functionality into an interactive mapping system that is available on the Internet. Kirkland GIS staff completed this significant project in a fairly short time frame. The current completed version works for desktop and laptop computers, and some tablets. A version that will work well on mobile systems is in the planning

phase. Citizens and businesses can now look up information which they used to have to obtain by coming in to the city or calling.

Supported Implementation of Public Records Request Portal

The Finance department implemented a new system to complement the new public records ordinance that Council passed in 2013. The IT role was fairly small since the system is fully hosted in the cloud (not on city servers). This system allows records requestors to understand where they are in line, when their requests may be filled, and to view the results of requests.

Implemented Facilities sinking fund software

Facilities identified a need to manage, plan and budget for building maintenance and improvements. Staff worked with them to implement a new application VFA Facilities. This application allows facilities to track all of their building information and to estimate and model the funds needed to maintain the buildings based on different scenarios.

Migrated data from old to new storage system

This project moved all of the city's data from old storage technology which was becoming both full and obsolete onto new storage. Delays in the network replacement project caused delays in this project. The city now has enough room to store data for a few years, after which the system can be expanded if necessary. The new storage and backup software prepares the city for email and data archiving and for moving some data to the cloud if that becomes cost-effective.

Completed a citywide upgrade of network systems

The city's network systems had not been upgraded since 2004 and the equipment was near the vendor's stated end-of-life. Due to initial design challenges with the vendor, this project came in quite late, which in turn delayed projects like the email archiving project which depend on this and the related storage systems project being completed. Finishing this project in 2013 helped to keep the network running, prepared for expansion of the network to the Public Safety Building and reduced the number of single points of failure which can bring city systems down.

Underway

Criminal Justice Information Systems (CJIS) audit

This audit tests the City's compliance with State and Federal system security practices about the handling of criminal justice data. The Police and Information Technology departments both have major roles in this audit. Adhering to CJIS standards protects sensitive data.

Telephone billing audit

Staff are preparing an RFP to hire an outside auditor to review phone bills. Frequent telephone service adds, changes, and deletions by various departments plus changing plan options makes a periodic review of services a best practice. This audit is timed to coincide with the move to the Public Safety Building so that all services which will be needed in the new building are identified and all old services that are no longer needed are also identified and turned off. In the past, these audits have resulted in ongoing savings, and it is anticipated that this audit will have the same result.

Final acceptance of EnerGov System for permitting

The city replaced its previous permitting system with a new system from EnerGov Solutions which went live on April 2nd, 2012. This implementation has been challenging. The original scheduled go-live date was January 2011, and when the system was tested, it failed in a number of ways. While the city has been using the system for nearly two years, city staff have not yet formally accepted the software. The city has a strong contract with EnerGov that requires delivery of certain functionality before acceptance. City staff, EnerGov Solutions, Tyler Technologies (a new parent company for EnerGov Solutions), and legal teams for all of the players have been working together to create a way forward. As of March 5, 2014, the city received a revised amendment to the contract that may get all parties closer to an

agreement. This has been difficult but important work to ensure that the City gets what it needs from the system and has sufficient leverage to ensure that EnerGov and Tyler have deadlines to complete the outstanding work.

Citywide upgrade to Office 2013

This upgrade will bring all staff and city council up to the current desktop version of Office, Office 2013. This will provide many time-saving features in Outlook (email and scheduling) and also improve integration with Microsoft SharePoint. Council should expect this upgrade sometime in the late spring.

Evaluation of Maintenance Management systems

The city currently uses a maintenance management system which was purchased and implemented in 2001. The next upgrade of the system has a significant cost (about \$175,000). While the upgrade was included in the 2013-2014 budget, staff in the Public Works department have requested an evaluation that compares that upgrade to buying a new system. The Information Technology department has hired an outside consultant to help with preparing an RFP to examine the available options in more detail. Either an upgrade to the current system or a new system would include significant new capabilities such as more modern data entry screens, better reporting, more mobile capabilities and more workflow management. One of the drivers for considering a new system is a desire for better integration with the city's Geographic Information Systems.

Payroll calculation codes process improvement and documentation

The city has used the same payroll and finance system for over fifteen years. The system performs complex and ordered calculations for many different salary structures, calendars, taxes, deductions, contributions that have changed through the years due to laws, labor agreement negotiations and benefit changes. The payroll calculation codes process, structure and documentation are all being examined for accuracy and process improvement. This detailed effort will act as an internal audit of payroll processing, and help prepare the system for future changes which may come about through the implementation of new labor agreements, new health care processes, and tax changes. It will also leave the city better prepared for the eventual replacement of the Finance system.

Roll-out of Interactive Online Forms

The Development Services Study suggested that the city do a better job of providing online/digital forms. After some investigation, a mixed team of Information Technology and business users selected Adobe's LiveCycle Forms software for implementation. The system has been procured and installed, standards development is underway, and the first training class has been held. The first staff groups to benefit will be Development Services, the Court, and Human Resources. This new software allows the city to be compliant with Adobe licensing, to manage forms inside of a single repository, and to provide a way for customers to complete and submit forms online or to fill out forms and print them. It also provides the ability to create workflows that manage the completion and approval of information contained in forms and to post form data to existing applications and database, reducing data-entry and errors. The new software is responsive. It will look different on different screens so that a customer will be able to complete forms on desktop computers, tablets, or smart phones. Interactive online forms should add convenience for citizens and businesses, provide better access to government by making them submittable at the user's convenience, and reduce data-entry errors and time.

2012 Aerial Mapping

This regional project includes multiple jurisdictions and spans King and Kitsap Counties, plus portions of Pierce, Thurston, and Snohomish counties. The project is over 95% complete. As it is the first time this had ever been tried in this area on such a large regional scale, there were a number of significant lessons learned which will be applied to the next flight, which is scheduled to take place in early 2015. Kirkland has a position on the regional steering team for the 2015 project and meetings are expected to begin soon. The 2012 flight both refreshed the orthophotography and completed some of the other data and line work for the new neighborhoods that were brought in through annexation.

Private Surface Water Tracking and Source Control System

The Public Works Storm Water Division is in need of a GIS-based application to store, manage, and analyze private storm drainage utility systems and pollution sources. The project team decided to implement VUEWorks and GIS technology, utilizing the existing storm drainage GIS layer as a repository for private system maps. The new system will provide users with robust content and functionality to enhance their routine work flows. It will also streamline records management for the private storm system inspection program, and improve customer service, especially in regard to timely inspections, communication, and monitoring.

Web Page Upgrade

The city website served 387,897 unique visitors and 1,349,404 page views in 2013. The last major upgrade to the website occurred in 2005. While the content has changed and expanded significantly over time, the basic look and feel and the navigation have remained the same. The current version of the website does not work well on mobile devices, and staff sometimes get complaints from customers who state that they have trouble finding information on the site. The re-designed website will work well on most devices, will be better integrated with social media, and will provide a fresh look and modern navigation.

In Planning Stages

Many of the projects that are in planning stages now will not complete in 2014. Nevertheless, staff needs to spend time in 2014 to understand the technologies, plan for implementation, and gain initial training.

Email / Data Archiving

Provides a way to archive all email and to eventually archive other documents as well. This project was originally due to be completed in 2013, but it was dependent on the storage project which was in turn dependent on the network project which went very late. An initial planning meeting has been held. Completion will probably not occur until after the public safety building move is completed due to resources constraints. This archive will provide a single location to be searched for public records related to email, and is anticipated to save significant staff time in response to records requests.

Migration to new phone system (most likely Microsoft's Lync)

The city's current phone system is due for an expensive hardware refresh in 2015. City Staff are seriously considering replacing the current telephone system with a telephone system from Microsoft called Lync. At this point in time, IT staff believe that Lync will provide better integration with Outlook, save money, and give staff more capabilities for communicating remotely or in the field. A final decision has not yet been made.

IT Disaster Recovery

The city has made investments to help make data processing systems more resilient. However, if a region-wide emergency occurs, the city is vulnerable to total loss of data. This project is designed to help acquire a cloud backup for city data and for the city website. Depending on the cost and scope, it may also support the beginnings of a continuity of government program.

Next phase of MyBuildingPermit.com

Public Works is the final department to go-live with more complex applications and permits through MBP. They are working with IT to define and configure their permit types, along with some remaining Building and Planning permit types, and hope to have functionality available by April of 2014. Further work is being done to determine if operational Fire permits should also be made available through MBP. At the same time IT, business customers and eCityGovAlliance are working on an inspection integration with MBP. This will transform the manual process of entering inspections requested through MBP into EnerGov an automatic process similar to the way the Interactive Voice Response (IVR) system works today.

Adding mobility to KirklandMaps

Since Kirkland Maps launched in February, 2014, the project team has received much positive feedback from staff, the business community, and citizens. Users have also expressed a desire for a mobile version of this application. IT/GIS will convene a new multi-department project team to implement this application in 2014.

Future Technology

Humanity is living in a time of significant and fast change. There are a number of new technology tools that may be used by city staff in the next one to ten years. This will be covered in more detail during the study session, including mobility and responsive design, data management, 3D printing, wearable technology, robotics, smart sensors, and big data analytics.